Online Conference Abstracts

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For your convenience, all podium and poster abstracts have been indexed by first author on page LXXV.

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Conference Sessions

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Oncology Nursing Society State-of-the-Science Lectureship: Reducing Negative Health Outcomes Related to Sleep/Wake Disturbances in People With Cancer
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ONS Victoria Mock New Investigator Presentation: Cognitive Dysfunction in Breast Cancer Survivors: The Role of Serotonin
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Cheryl Beck, DNSc, CNM, FAAN

Closing Session: Challenge, Significance, and Accelerating Possibility: Time for a Renaissance in Cancer Nursing Research
Kathleen Mooney, RN, PhD, AOCN®, FAAN

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PODIUM SESSIONS

Podium Session 1: Caregivers and Community Care

AA

THE ODYSSEY OF CARE GIVING: A POETIC NARRATIVE OF THE EXPERIENCE OF FAMILY CARE GIVING. Wendy Duggleby, PhD, RN, AOCN®, College of Nursing, University of Saskatchewan, Saskatoon, Canada; Allison Williams, PhD, McMaster University, Hamilton, Canada; Karen Wright, PhD, University of Saskatchewan, Saskatoon, Canada; and Lorraine Holtslander, PhD, University of Saskatchewan, Saskatoon, Canada

The psychosocial burden experienced by family members of individuals with advanced cancer has been well documented. Both the family member with cancer and the family caregivers experience the many crises and distresses associated with cancer particularly when cancer becomes advanced. As part of a research study we asked caregivers of family members with terminally ill cancer to share their stories through journals. We believed that understanding both the challenges faced by family caregivers, and their hopes experienced by family caregivers via their journal entries, would add new insights into their experience that may otherwise have been missed or misunderstood. Research on family caregivers of persons with cancer is an ONS priority.

The purpose of this study was to describe, through poetic presentation, the experiences of family caregivers of persons with advanced cancer conveyed in their written journals. The specific aims were to: describe the nature of the narratives and to portray through poetic presentation the caregivers' experiences.

The theoretical framework for this study was Cortazzi's narrative approach that assumes there are three major structural categories of a narrative: event, experience and evaluation.

One hundred and one journal entries written over a 2 week time period from 10 family caregivers were transcribed verbatim. The first step in the analysis of the journals was to determine the type of narrative represented. The type of narrative was a reflection of the substantive material that was the focus of the narrative. The data was then condensed into poetic phrases to reflect structural categories of event, description and evaluation.

The overarching metaphor through which participants described their experience was an odyssey. Each stanza of the poetic narrative described the day-to-day lived experiences of chaos, hope and joy. The poetic representation of the findings will be presented with discussion of how poetic narrative inquiry brings richness and depth to the understanding of the caregiver experience as a basis for future research and changes in policy and practice.

Funding Source: Canadian Institutes of Health Research

AB

CANCER CAREGIVERS AND SLEEP: A DECADE OF RESEARCH. Patricia Carter, PhD, RN, CNS, University of Texas at Austin, Austin, TX; Cherie Simpson, MSN, Doctoral Student, University of Texas at Austin, Austin, TX; and Gayle Acton, MN, PhD, University of Texas at Austin, Austin, TX

Researchers have sought to describe caregiver sleep, depression, and quality of life, to understand the relationships between these phenomena, and to develop interventions to improve sleep, mood, and quality of life in this growing population. This paper will present the findings of nearly a decade of research dedicated to answering these questions.

We reviewed available English language empirical reports about sleep and it's relationship to depression and quality of life in family caregivers of persons with cancer. Computerized database searches included Medline, CINAHL, and PsycINFO from 1998-2008. Search terms included sleep; sleep disturbance; insomnia; caregivers; family caregivers; cancer.

A total of 21 papers were examined and conceptual issues identified. Major findings include: 1) caregivers report moderate to severe insomnia and depressive symptoms and poorer quality of life than do non-caregivers, 2) caregiver insomnia is more closely linked to caregiving stressors than to patient symptoms, 3) caregiver insomnia, depression, and quality of life scores show great variability over time, 4) traditional pharmacological and behavioral therapies are inaccessible to family caregivers of persons with cancer, and 5) modified behavioral therapies for insomnia show some promise in improving caregiver insomnia, depression, and quality of life.

Sleep is an essential physiologic need. Sleep allows the body and mind to restore and rebuild. Unfortunately, when life places additional demands upon us, like providing care to a loved one with cancer, sleep is often the first self-care practice to be lost. This year over 1.4 million people will provide care to a love one with cancer. Many family caregivers report suffering from debilitating insomnia and depression, and poor quality of life.

Nurse scientists have a unique understanding of caregiver demands, concerns, and issues. In order to design interventions to serve the family caregiver, we must be able to communicate with other disciplines that have a rich understanding of sleep and it's potential impact on health and well-being.

Many questions have been answered about sleep, depression, and quality of life in cancer caregivers; however, there is still work to be done. Conceptual issues of variable definitions, study design, and instrumentation must be addressed.

AC

EFFECTIVENESS OF PALLIATIVE CARE INTEGRATION IN A COMMUNITY ONCOLOGY CENTER. Maryjo Prince-Paul, PhD, APRN, AHPCN, Case Western Reserve University, Cleveland, OH; Joel Saltzman, MD, Lake University Ireland Cancer Center, Mentor, OH; Lois Teston, MD, Lake University Ireland Cancer Center, Mentor, OH; Carol Matthews, APRN, AHPCN, Hospice of the Western Reserve, Cleveland, OH; Michele Snyder-Willis, RN, BSN, CCRP, Lake University Ireland Cancer Center, Mentor, OH; and Aimee Vance, RN, MPH, Case Western Reserve University, Cleveland, OH

Although not every cancer diagnosis becomes a terminal disease, it is still the case that over 50% of those diagnosed do not survive the disease. Despite the widespread recognition of the need for new models of care to better serve patients with advanced cancer, little evidence exists documenting the effectiveness of these models.

There is a common misconception that palliative care (PC) services are offered only in the terminal phase of illness. Little is known about how PC services in a community cancer center can affect health care resource utilization in patients receiving cancer-focused, life

prolonging care. The purpose of this pilot study was to investigate the integration of an on-site PC advanced practice nurse (APRN) in the community oncology setting and the effect of PC services on patients with advanced cancer compared to usual care.

Donabedian's Structure, Process, and Outcome theory was used as the guiding framework.

This study utilized a descriptive, pre/post design with 101 adult patients with advanced cancer (Stage III/IV). Accrual occurred for 5 months in the usual care period (ARM A; n=52), followed by 5 months accrual after implementation of the PC APRN (ARM B; n=49). Data were collected at enrollment (T1) and 4 months post enrollment (T2). Data were analyzed using Chi -square and logistic regression analyses.

Controlling for health related QOL variables, eight covariates were entered into two logistic regression models with hospitalization and mortality as outcome measures. Significant findings included: those patients with palliative care had a significantly lower mortality rate at four months (OR=15.4; p<.02) and were five times less likely to be hospitalized (OR= .20; p<.01). Through integrating PC into community cancer care, advanced cancer patients demonstrate less acute care use, which is likely to result in lower costs of care. Patients in the PC group were more likely to survive at four months than comparison group patients. Contrary to what many believe, PC services can be effectively provided to patients as they receive chemotherapy treatment and are not associated with increased mortality. Access to a PC APRN integrated into the community oncology setting may be associated with measurable benefits.

Funding Source: NIH/NCI R25T CA090355

AD

TAILORING AN EVIDENCE-BASED NURSING PRACTICE MODEL FOR STAFF NURSES IN COMMUNITY CANCER CENTERS.

Jo Hanson, RN, MSN, CNS, OCN®, City of Hope, Duarte, CA; and Marcia Grant, RN, DNSc, FAAN, City of Hope, Duarte, CA

Excellence in patient care results when nurses continually question current practice and make changes based on educated queries. Evidence-Based Nursing Practice (EBN), combining the best scientific evidence, clinical expertise, and patient/family preferences, provides a systematic problem-solving approach for practice changes.

EBN problem-solving is a challenge for busy staff nurses who traditionally rely on intuition and collegial advice. Several excellent university developed models teach how to incorporate EBN into practice; however staff nurses in community cancer-center settings rarely have this educational option. The purpose of the unit-based model is to educate community cancer-center staff nurses in EBN problem-solving. Model components include: 1) support e.g. administration, managers, facilitators; 2) participants e.g. individuals and/or teams; and 3) projects characteristics e.g. small, nurse-focused, fit with unit priorities.

Staff nurses, self-selected or recommended by a manager or colleague, attend a small all-day EBN workshop. Unit teams rather than individual participation is recommended. Workshop content includes: 1) EBN basic concepts and processes (EBN expert RN consultant); 2) finding the best evidence (librarian director); and 3) unit-based project development (individual/team work facilitated by APNs and other experts). In addition to identifying keywords for a lit search, the hands-on interactive project development period provides a format for identifying the problem, describing current practice, outlining planned interventions, and defining outcome measures. Participants return to their unit with a well defined, unit-based project. Facilitators conduct a lit search, then, together with the participant, evaluate the findings, and partner in finding hospital policies and national guidelines. The Nursing Research Department and facilitators provide one-on-one support throughout the planning, implementation, and measurement processes.

Five EBN workshops, 65 participants, have initiated 35 unit-based projects. Current project status results: completion (18%); in-progress (64%); and no- progress to date (18%). Some projects may become hospital-wide PIs. The first EBN bi-annual institutional poster session generated 12 displays.

Advancing EBN for staff nurses is paramount to quality patient outcomes. Challenges of access to training programs hamper staff nurses' ability to incorporate EBN into their daily practice. Tailoring a model for staff nurses at the unit level is a successful approach in bringing EBN to the bedside.

Funding Source: UniHealth Foundation

Podium Session 2: Pain

AE

PREDICTORS OF THE TRAJECTORIES OF THE AMOUNTS OF ANALGESICS PRESCRIBED AND TAKEN IN A SAMPLE OF ONCOLOGY OUTPATIENTS WITH PAIN FROM BONE METASTASIS.

Janet Edrington, RN, MS, PhD, School of Nursing, University of California, San Francisco, San Francisco, CA; Steven Paul, PhD, School of Nursing, University of California, San Francsico, San Francisco, CA; Marylin Dodd, RN, PhD, School of Nursing, University of California, San Francsico, San Francisco, CA; Claudia West, MS, School of Nursing, University of California, San Francisco, San Francisco, CA; Karen Schumacher, RN, PhD, University of Nebraska Medical Center, Omaha, NE; and Christine Miaskowski, RN, PhD, School of Nursing, University of California, San Francisco, San Francisco, CA

Limited information exists on how variable is the amount of analgesics prescribed for and taken by patients with cancer pain.

In a sample of patients with metastatic bone pain, we examined how the amount of analgesic prescribed for and taken by these patients changed over the course of 5 weeks and investigated predictors of the initial amounts of analgesics prescribed and taken and/or the characteristics of the trajectories of the amount of analgesic prescribed and taken.

The University of California's Symptom Management Model served as the theoretical framework.

Patients (n=87) were adults who were able to read and understand English; had an average pain score of > 2.5, and had radiographic evidence of bone metastasis. Patients completed a demographic questionnaire, a measure of distress, and ratings of average and worst pain. Over 5 weeks, analgesic prescriptions and intake were recorded on a daily basis in a medication diary. Based on work by Masters-Steedman, a Medication Quatification Scale (MQS) score was calculated. The MQS is a method of quantifying analgesic medications on the basis of pharmacologic classification of the medication and the daily dose that creates a quantitative index. Hierarchical Linear Modeling was used to evaluate the trajectories of the amount of analgesic prescribed and taken and the predictors of the various trajectories.

For both the prescribed and taken amounts of analgesics, a linear model fit the data best. Significant intercept predictors of the amount of analgesic prescribed were: age, KPS score, and level of distress caused by pain. Significant predictor of the linear slope was baseline rating of worst pain. Significant predictors of the amount of analgesic taken were: level of distress caused by the pain and hours per day in significant pain. The only predictor of the linear slope was gender. Findings suggest that different variables influence the trajectories of the amounts of analgesic prescribed and taken. These findings provide new information on the variables that influence analgesic prescriptions and intake in oncology outpatients with pain from bone metastasis; some of which are amenable to nursing interventions.

Funding Source: National Cancer Institute (CA64734)

AF

THE INFLUENCE OF PAIN ATTITUDES ON PAIN EXPERIENCE AMONG ADVANCED CANCER PATIENTS IN TAIWAN.

Lih-Mih Chen, PhD, Kaohsiung Medical University, School of Nursing, Kaohsiung, Taiwan; Christine Miaskowski, RN, PhD, FAAN, University of California, San Francisco, San Francisco, CA; Marylin Dodd, RN, PhD, FAAN, University of California, San Francisco, San Francisco, CA; and Geraldine Padilla, PhD, University of California, San Francisco, San Francisco, CA

Based on the Multidimensional Model of Cancer Pain, pain attitudes is known as an important element of the cognitive dimension in cancer pain experience. Little research has been done in understanding the interactions between pain attitudes and various dimensions of the cancer pain experience.

1) to determine the relationship between pain attitudes and the pain experience 2) to determine the relationship between pain attitudes and the type of cancer, current treatment, and pain management, and 3) to identify significant predictors of pain attitudes

A Multidimensional Model of Cancer Pain (i.e., physiologic, sensory, affective, cognitive, behavioral, and sociocultural) is being used.

A descriptive, cross-sectional study design was used to investigate and explore the relationships of pain attitudes on various dimensions of the cancer pain experience among a convenience sample of 120 Taiwanese patients with advanced cancer. All participants who could read and write Chinese and did not have severe symptoms at the time of enrollment were asked to complete the study questionnaires (i.e., Demographic Profile, SOPA, BPI, QOL, CES-D, BAI). The time required to complete questionnaires ranged from 35 to 50 minutes. Data obtained in this study was analyzed using the Statistical Package for the Social Sciences (SPSS)13.0 on a personal computer. Descriptive statistics, correlation, t-test, analysis of variances, and multiple regression were used to answer research questions.

1) the cancer pain experience is a multidimensional concept and interactions exist within various dimensions; 2) pain attitudes measured by SOPA were significantly correlated with various kinds of pain intensity, pain quality, various words of pain quality, anxiety, depression, quality of life, total number of pain locations, family monthly income, educational level, percentage of pain relief, adequacy of pain management, opioid usage, and analgesics prescription; and 3) 55.3% of total variance of pain attitudes (measured by SOPA) can be explained by eight significant predictors (i.e., family monthly income, educational level, adequacy of pain management, worst pain intensity, least pain intensity, using gnawing and tender to descript pain quality, and anxiety). The findings from this study contribute significantly to the literature of Multidimensional Model of cancer pain in Taiwan and provide direction for assessing advanced cancer patients at high risk for having negative pain attitudes.

AG

EXAMINING OPIOID UNDERUSE BY INDIVIDUALS WITH CANCER.

Marie Flannery, RN, PhD, AOCN®, University of Rochester School of Nursing and James P. Wilmot Cancer Center, Rochester, NY

Despite clinical practice guidelines, efficacious analgesic treatments, and extensive educational efforts, cancer pain remains a prevalent and critical problem for people with cancer. The clinical standard for moderate to severe pain is around the clock (ATC) use of opioid analgesics.

One aspect contributing to unrelieved pain is the underuse of opioid medications by individuals with cancer. The purpose of the research was 1) to describe use of opioid medications 2) examine the relationship between pain severity and opioid use in cancer patients, and 3) analyze 4 variables that may predict underuse of opioid medication.

A conceptual model predicting a direct relationship between pain severity and opioid use with four moderating factors (accurate knowledge, side effects, and goals for pain relief, and patient related barriers to opioid use) was used.

The primary methods of data collection were self-administered questionnaires during two home visits and daily journals. Existing instruments with established psychometric properties previously used with cancer patients were selected (e.g., Brief Pain Inventory, Barriers Questionnaire, and Medication Side Effect Checklist). Data analysis included descriptive and multiple regression statistics.

A purposive sample of individuals' prescribed opioids included 39 individuals, 56% female, M= 60 years old (R 31-85), performance status ECOG 2-3, with metastatic cancer. The mean worst pain score on 1-10 scale was 4.3 (range 0-10). 56% of participants were prescribed ATC, with 91% of available dose taken. 95% of participants were prescribed PRN, with M = 37% of dose taken (R-21-54%). PRN use varied significantly by pain level: mild 16%, moderate 37%, and severe 54%. Neither demographic variables nor any of the 4 predictor variables explained variance in opioid use.

Findings from this study are consistent with past research; use of ATC was high when prescribed and underuse of PRN opioids was confirmed. Additionally, the variables proposed to predict opioid use were not correlated in this sample. Additional examination is necessary to explain patient underuse of opioids.

Funding Source: Gilda's Club

Podium Session 3: Psychoeducational Interventions

AH

WHEN COMPARED WITH INFORMATION INTERVENTIONS, ARE COGNITIVE BEHAVIORAL MODELS MORE EFFECTIVE IN ASSISTING PATIENTS TO MANAGE SYMPTOMS?

Barbara Given, PhD, RN, FAAN, Michigan State University, East Lansing, MI; Charles Given, PhD, Michigan State University, East Lansing, MI; Alla Sikorskii, PhD, Michigan State University, East Lansing, MI; and Mei You, MS, Michigan State University, East Lansing, MI

The RCT was a nursing intervention. Symptom management is a priority of ONS and NCI and thus this is highly relevant.

Are cognitive behavioral models superior to information based interventions to assist cancer patients undergoing chemotherapy to manage their symptoms? This report summarizes findings from an RCT two arm trial where a six contact 8 week cognitive behavioral model delivered by nurses was compared with a 6 contact 8 week information intervention delivered by a coach.

Cognitive behavioral theory was used to implement evidence-based symptom self care strategies: nurses assessed the severity of each symptom at each contact, and nurses- patients collaborated on selecting symptoms and strategies to be implemented. Strategies were tailored to patients needs, multiple strategies were offered, each strategy was evaluated (tried and, if tried its success) for each symptom, successful strategies were retained or new ones introduced. This intervention was compared against a 6 contact 8 week strategy where the coach assessed symptom severity and referred patients to a Symptom Management Guide offering evidence-based strategies.

Following consent and baseline interview 115 and 118 patients were assigned to the nurse and coach arms respectively. Fifteen symptoms scored on a 10 point scale were summed at baseline and 10 weeks. Anchored interference based severity cut-points for each symptom were established, tested for validity and reliability and used to assess responses (severe to moderate or mild, and moderate to mild) for each symptom.

Both trial arms reduced significantly aggregate symptom severity over baseline, but neither was more successful than the other at 10 weeks. No age, depression, comorbidity, sex, stage, or recurrence status interactions with arm were significant. At the symptom level, there was a significant interaction between the nurse arm and age. Patients over 65 responded more quickly to the cognitive behavioral arm. In sum, older patients appear to respond more favorably to a cognitive behavioral arm, however,

this advantages must be weighed against costs (19 minutes for the coach compared with 42 for the nurse) of intervention delivery. Implications for directing care for old patients will be presented.

Funding Source: Grant R01 CA030724 from the National Cancer Institute

AI

SUPPORT AFTER BREAST CANCER: FINAL REPORT OF A SENIOR PEER COUNSELING TELEPHONE INTERVENTION.

Rebecca Crane-Okada, PhD, RN, AOCN®, City of Hope National Medical Center, Duarte, CA; Evelyn Freeman, PhD, WISE & Healthy Aging (retired), Santa Monica, CA; Holly Kiger, MN, RN, WISE & Healthy Aging, Santa Monica, CA; Parisa Mirzadehgan, MPH, John Wayne Cancer Institute at Saint John's Health Center, Santa Monica, CA; Linda M. Deacon, BA, John Wayne Cancer Institute at Saint John's Health Center, Santa Monica, CA; and Armando E. Giuliano, MD, John Wayne Cancer Institute at Saint John's Health Center, Santa Monica, CA

Few studies have addressed the effectiveness of support for older women during the stress-filled time between breast cancer surgery and initiation of adjuvant treatment. None have explored the use of senior peer counselor volunteers, with skills and life experiences in providing emotional support to older adults during life transitions.

In partnership with a community agency's established senior peer counseling program, we tested the effects of a senior peer counselor (PC) telephone intervention on anxious mood, perceived social support, fear of recurrence, resource use, and instrumental support seeking in older women after breast cancer surgery, over 12 months.

Study participants were randomized to one of three schedules for receipt of telephone calls from PC: (1) once weekly for five weeks, then as desired, beginning shortly after surgery (immediate contact/IC) (N=49); (2) once weekly for five weeks, then as desired, beginning 6 weeks after surgery (delayed contact/DC) (N=46); (3) on request (usual contact/UC) (N=44). Participants completed study questionnaires on social support (Interpersonal Relationship Inventory), coping (Brief COPE), mood (HADS), Fear of Recurrence, and resource use. Comparisons were made within and between groups by age (50-64 vs 65 and older) and receipt of PC intervention, at baseline (before surgery), pre- and post-intervention, 6 and 12 months after surgery.

We enrolled n=143; 3 withdrew, 1 expired of a second cancer, 139 completed the study. Mean age was 62 (50-94); most were married, White, with Stage 0 or I disease having breast conservation surgery. Anxiety declined over time, support remained high, and conflict remained low, irrespective of age or intervention. Significant differences ($p<.03$) for resource use and fear of recurrence were associated with age and not receipt of PC intervention. The older group without PC intervention less often reported seeking instrumental support at all time points. While senior peer counseling with trained and supervised PC was a useful adjunct to the clinical team and valued by participants, further exploratory analyses of the data suggest PC intervention may have greater quantifiable benefit to subgroups of higher risk women (e.g., unpartnered and anxious at enrollment).

Funding Source: Avon Foundation

AJ

TAILORING AN INTERVENTION TO MEET AN EMERGING PATIENT NEED.

Liz Cooke, RN, MN, AOCN®, ANP, City of Hope Medical Center, Duarte, CA; Robin Gemmill, RN, MSN, CNS, CWOCN, City of Hope Medical Center, Duarte, CA; Marcia Grant, RN, DNSc, FAAN, City of Hope Medical Center, Duarte, CA; and AnnaCathy Williams, RN, BS, City of Hope Medical Center, Duarte, CA

SNIP (Standardized Nursing Intervention Protocol) is a NCI-funded R01 grant in progress providing an advanced–practice nurse (APN) teaching /coaching intervention for discharged blood and marrow transplant patients. The intervention content of the study was tailored to address patient and family needs when patients relapsed and mortality was inevitable. The purpose of this abstract is to describe the revised End-of-Life (EOL) content.

An expected death rate during implementation of intervention research revealed urgent patient and family needs when relapse occurred. The following components provided additional educational and resource materials:

1. An extra teaching session was formulated which contains relevant NCI literature, and open-ended questions to assess the patient's perception of the situation, sense of meaning, social support, future goals, psychological response, and hope. Therapeutic presence and ongoing support by APNs is offered and provided.
2. Additional prepatory content for families was created which gives concrete practical literature about cemetery and burial procedures, and signs of dying. A grief assessment tool was developed to assess families and refer for support if complicated grief risk is suspected
3. The third component of the content is bereavement follow-up. Patients are send literature on grief with a card within a month after death.

To formulate the revised content the two APN intervention nurses attended the End-of-Life Nursing Education Consortium (ELNEC) which gives comprehensive evidence-based content aimed at both patient and family needs. The APNs used the working goals and outcomes of the course to formulate three components for new content to provide appropriate quality nursing care.

Issues surrounding EOL and relapse for patients and their families require a comprehensive compassionate approach. Also, recent literature suggests that caregivers need more prognostic information so that they can prepare for the death of their loved one, and often do not ask which may lead to caregiver distress. This abstract addresses revised content of an NCI-funded study in process to meet these needs.

The goal of this revised content was to address comprehensive EOL issues in an APN intervention study.

Funding Source: National Cancer Institute

AK

PRECHEMOTHERAPY EDUCATION—OUTCOMES OF A RANDOMIZED CONTROLLED TRIAL.

Sanchia Aranda, RN, PhD, Peter MacCallum Cancer Centre, Melbourne, Australia; Penelope Schofield, PhD, Peter MacCallum Cancer Centre, Melbourne, Australia; Michael Jefford, PhD, MBBS, Peter MacCallum Cancer Centre, Melbourne, Australia; Patsy Yates, RN, PhD, Queensland University of Technology, Brisbane, Australia; Breen Sibilah, PhD, Peter MacCallum Cancer Centre, Melbourne, Australia; Carl Baravelli, BA (Hons), Peter MacCallum Cancer Centre, Melbourne, Australia; and Meinir Krishnasamy, PhD, RN, Peter MacCallum Cancer Centre, Melbourne, Australia

Pre-chemotherapy is a routine component of nursing practice. Despite more than 30 years of chemotherapy nursing there is limited evidence to guide the delivery of pre-treatment education.

This study aimed to test a novel intervention package. Man hypothesis: the new intervention would result in reduced psychological distress and reduced symptom severity and bother in the intervention group versus control group.

The intervention package was designed used best available evidence in three key areas: eliciting & responding to emotional cues, preparing patients for potentially threatening medical procedures and advice regarding self-care to prevent or reduce symptoms associated with chemotherapy. The intervention package consisted of

a DVD 'Looking after yourself during chemotherapy' (also available in usual care), a question prompt list, a nurse consultation and tour of the day chemotherapy unit. Education was delivered 48 – 72 hours prior to treatment versus on the day of treatment in most usual care patients. Intervention nurses underwent standardised training, including the use of actors for simulated education. These nurses were barred from delivering education in the control condition.

The intervention was tested using a randomised controlled trial for patients with breast and colorectal cancer and lymphoma. Patients were stratified by treatment toxicity (high/low). All education sessions (usual care/intervention) were audiotaped to assess intervention fidelity and diffusion. Data collection occurred at baseline (HADS, C-SAS), day 1 (HADS) and 3rd cycle of chemotherapy (HADS, C-SAS). ANCOVA was used to assess treatment effects.

192 patients were randomised usual care (n=94) and intervention (n=98). 90% intervention and 9% usual care patients watched the DVD. There were no main effects of the intervention for either psychological distress (Follows 1 & 2) or for symptom prevalence, severity or distress (follow up 2), p values >0.05. There was a trend towards reduced symptom severity for intervention patients (p=0.069). The intervention was acceptable to patients and nurses. Nurses described increased confidence in patient education. We are conducting the analysis of intervention adherence. The study demonstrated the feasibility and acceptability of the education package. The absence of a main effect suggests the need to increase the intervention intensity.

Funding Sources: NHMRC project grant and Leukaemia Foundation Grant supported the RCT. The DVD was produced with an educational grant from the Peter MacCallum Cancer Foundation

Podium Session 4: Recruitment

AL

SUCCESSFUL RECRUITMENT AND RETENTION IN A PHASE II TRIAL. Donna Tyrpak, MS, RN, ANP, State University of New York at Buffalo, Buffalo, NY; Jean Brown, PhD, RN, FAAN, State University of New York at Buffalo, Buffalo, NY; Richard Browne, PhD, State University of New York at Buffalo, Buffalo, NY; Peter Horvath, PhD, CDN, State University of New York at Buffalo, Buffalo, NY; Gregory Wilding, PhD, State University of New York at Buffalo, Buffalo, NY; and Dhiren Shah, MD, Cancer Care of WNY, Buffalo, NY

To describe the methods used to successfully recruit and retain participants.

The Multivitamin/Minerals during Cancer Therapy study is a phase II, 3-arm, double blind, placebo controlled RCT. 53 prostate cancer outpatients receiving external beam radiation with or without brachytherapy were enrolled over 25 months from 5 sites in Western New York. Participants were seen at 4 time points over 21 weeks. Recruitment strategies included: ongoing analysis of recruitment approaches, focusing efforts on receptive sites, supporting clinical staff, integrating the study nurse into clinical sites, obtaining a partial HIPAA waiver for direct contact of eligible participants, reducing participant burden with time sensitive enrollment appointments, enrolling participants 5 days per week, and providing study literature and newsletters. Retention strategies included: clear explanation of participation expectations and weekly phone calls to assess protocol adherence and adverse events.

Recruiting participants for a longitudinal randomized clinical trial(RCT)is generally a daunting task,often taking longer than expected to accrue the projected number of participants. Usually only a small proportion actually enrolls in RCTs.

Ongoing analysis of strategies and willingness to refine efforts are imperative for effective recruitment. Educating, developing a rapport, and integrating the study nurse with clinical staff are important to achieving successful results. Staff referrals of all eligible patients need to become part of the daily clinical site routine to overcome clinical gate keeping.

Recruitment rates for the 5 sites averaged 28.5% with the largest site averaging 34%. 81% of participants came from the largest site. 98% of participants enrolled completed the study. Successful recruitment was attributed to: ongoing clinical staff support, familiarity with site scheduling process, ability to enroll participants 5 days per week, supplying written reference and contact information. High retention was attributed to: weekly phone calls for follow-up, appointment reminders, assessment of protocol adherence and adverse events, and realistic expectations of participation explained during the initial visit.

Funding Source: NIH/NCI 1R21CA102391-01A2

AM

PLANNING, IMPLEMENTING, AND MONITORING STRATEGIES FOR RECRUITMENT OF ADOLESCENTS/YOUNG ADULTS INTO A RANDOMIZED CLINICAL TRIAL. Brooke Oakley, RN, MPH, Children's Healthcare of Atlanta, Atlanta, GA; Sharron L. Docherty, PhD, CPNP, Duke University School of Nursing, Durham, NC; Debra Burns, PhD, MT-BC, Indiana University School of Music at IUPUI, Indianapolis, IN; Lona Roll, RN, MSN, CHRISTUS Santa Rosa Children's Hospital, San Antonio, TX; Verna L. Hendricks-Ferguson, RN, PhD, Goldfarb School of Nursing at Barnes-Jewish College, St. Louis, MO; Kristin Stegenga, RN, PhD, Children's Mercy Hospital, Kansas City, MO; and Joan Haase, PhD, RN, FAAN, Indiana University School of Nursing, Indianapolis, IN

This paper will describe recruitment considerations and strategies to recruit AYA into a multi-site, behavioral, randomized Phase II clinical trial of a music therapy intervention, titled Stories and Music for Adolescent/Young Adult Resilience During Transplant: The SMART Study.

Considerations in planning and implementing recruitment included: 1) individual factors (e.g., gender and developmental differences, disease and treatment trajectory, and parental influence); 2) process and contextual factors (e.g. personnel collaboration and coordination, timing of study introduction and consent, appearance and content of recruitment materials to appeal across developmental ages and genders, and site culture differences); and, 3) systems for monitoring recruitment patterns (e.g., identification criteria, tracking recruitment efforts, recruitment rates, and reasons for not enrolling, such as disease or treatment changes, not interested).

Enhancing recruitment and participation in randomized clinical trials (RCT), especially for adolescents and young adults (AYA), is a national priority. Addressing disparities in AYA participation requires better understanding about the specific factors which may lead to their recruitment and participation in RCT. Hence, recruitment of participants to meet targeted study-enrollment goals must be carefully planned, implemented and monitored. Literature on recruitment is especially limited regarding AYA populations. Rarely do investigators report examples of both positive and negative outcome strategies in the recruitment of AYA with cancer. Discussion and reporting of successful recruitment strategies for AYA can help to increase participation of this population in RCT.

In addition to carefully planning recruitment strategies, researchers need to plan ways to monitor and, if necessary, adjust those strategies. This presentation describes recruitment rates and discusses reasons for AYA refusal to participate in RCT. Application of recruitment strategies may augment investigators' efforts to successfully recruit AYA with cancer in future studies.

Recruitment processes have been refined to address the key factors above to achieve an overall recruitment rate of 53% (n=67 enrolled). Successes and obstacles related to the recruitment of AYA participants to the study will be presented.

Funding Sources: NIH/NINR 1R01NR008583-01A; NCI/DCP Cancer Control Credits through Childrens Oncology Group (COG) ANUR0631

AN

LESSONS LEARNED FROM RECRUITMENT AND RETENTION OF SMOKERS WITH CANCER INTO CLINICAL RESEARCH. Julie Lynch, RN, MBA, University of Massachusetts, Boston, Nursing & Health Sciences, Boston, MA; Mary E. Cooley, PhD, RN, Dana-Farber Cancer Institute, Brookline, MA; Karen M. Emmons, PhD, Dana-Farber Cancer Institute, Brookline, MA; Robert Haddad, MD, Dana-Farber Cancer Institute, Brookline, MA; Marshall Posner, MD, Dana-Farber Cancer Institute, Brookline, MA; Tiffany-Jen Cohen, BS, Dana-Farber Cancer Institute, Brookline, MA; and Bruce E. Johnson, MD, Dana-Farber Cancer Institute, Brookline, MA

The purposes of this presentation are to describe recruitment and retention of smokers with cancers into a clinical trial and discuss challenges associated with recruiting smokers with cancer.

One-thousand-seven-hundred-and-eighty-four patients were screened for eligibility into a study that examined factors related to smoking relapse after a diagnosis of cancer. Two-hundred-eighty-two participants (16%) were eligible. Common reasons for not being eligible were: never-smoked cigarettes, quit-smoking > 7- months ago, no follow-up in the clinic, ineligible diagnosis, or too sick. Out of those who were eligible, 180 (64%) patients enrolled. There was 17% attrition over 6-months for participants with head and neck cancer and 44% attrition for those with lung cancer. Common reasons for attrition were progressive disease and death. Challenges associated with recruiting and retaining participants were: some felt guilty over their continued smoking, some smokers felt uncomfortable disclosing their smoking status to providers and family members, questionnaires were too long, and some participants received great pleasure from smoking and wished to continue smoking. In order to maintain retention, we developed a shortened questionnaire which contained the primary outcomes of the study only and had the same research coordinator assigned to collect data from patients throughout the study.

Although smoking cessation is associated with improved clinical outcomes, many smokers with smoking-related cancers are highly dependent smokers and may find it difficult to quit after their diagnosis. Smoking cessation interventions that are tailored to smokers with cancer are needed. However, in order to be able to develop and test smoking cessation interventions, an understanding of the ability to recruit and retain smokers into clinical trials is needed.

Future studies need to use multiple clinical sites and develop recruitment and retention strategies that are sensitive to the special needs of smokers with cancer.

Recruitment of smokers into clinical trials is challenging. Enrollment rates were reasonable. However, a large number of participants needed to be screened in order to reach target enrollment. Embarrassment over continued smoking and discomfort with disclosing smoking status are common issues and may influence recruitment into intervention trials.

Funding Sources: National Cancer Institute 1 K07 CA92696-02 and James B. Gillen Thoracic Oncology Research Fund, Dana-Farber Cancer Institute (Mary E. Cooley)

AO

SECOND LOOK: OUTCOMES ANALYSIS OF THE IMPACT OF RESEARCH INFRASTRUCTURE ASSESSMENTS ON CLINICAL TRIAL ACCRUAL AT COMMUNITY CANCER PROGRAMS AFFILIATED WITH FOX CHASE CANCER CENTER PARTNERS. Patricia Keeley, MSN, OCN®, ACNS-BC, Fox Chase Cancer Center, Rockledge, PA; Paul Engstrom, MD, FACS, Fox Chase Cancer Center, Philadelphia, PA; Steven Cohen, MD, Fox Chase Cancer Center, Philadelphia, PA; Bonnie Miller, RN, BSN, OCN®, Fox Chase Cancer Center, Rockledge, PA; Elaine Sein, RN, BSN, OCN®, Fox Chase Cancer Center, Philadelphia, PA; and Margaret O'Grady, RN, MSN, OCN®, Fox Chase Cancer Center, Rockledge, PA

The purpose of this study was to identify the impact of targeted assessments of research infrastructure on clinical trial accruals for Fox Chase Cancer Center Partner (FCCCP) institutions by looking at outcomes for those sites participating in the assessment.

A RERA was conducted at multiple sites. A review of literature and user input provided support for revisions to the tools used in the 2005 assessment, which identified methods to enhance existing research programs and included the entire research staff, physician investigators and clinical trials processes. Institution-specific feedback provided to senior medical and administrative leadership provided best practice recommendations for operations, education, marketing and outreach.

In 2005, we hypothesized that a detailed benchmarking of clinical research resources and staffing analysis would result in improved research accrual at community hospitals within the FCCCP program. As a follow up to this initiative, a Research Re-Assessment (RERA) was instituted in 2007 to identify sustained impact of results from the original assessments. FCCCP is a consortium of community hospitals linking with Fox Chase Cancer Center, an NCI-designated comprehensive cancer center.

This analysis revealed that a significant increase in percentage of overall accruals from FCCCP sites came from those institutions participating in the research assessments. Staffing analyses suggest that streamlining of research activities may create opportunities to work more efficiently while increasing accrual rates. FCCC Partner institutions benefited from a clinical trials infrastructure process improvement.

Sites participating in the RERA accounted for 27.04% of accruals from FCCCP institutions in 2004; in 2007, these sites represented 49.71% of Partner accruals. Clinical Research Associate staffing was leaner at sites participating in the RERA. Median staffing for Clinical Research Nurses (CRN) remained steady at 1.0 FTE per site; Data Managers (DM) decreased from 1.0 FTE in 2004 to 0.35 FTE in 2007. For the same time period, non-participating sites increased staffing from 1.5 to 2.5 FTE for CRN and increased from 1.0 to 1.25 FTE for DM. Participating sites demonstrated a decrease in DM staff, while non-participating sites saw an increase for both CRN and DM positions.

Podium Session 5: Symptom Clusters

AP

CHANGES IN SYMPTOM CLUSTERS IN PATIENTS UNDERGOING RADIATION THERAPY. Jung-Eun Esther Kim, RN, PhD, UCSF Medical Center, San Francisco, CA; Marylin J. Dodd, RN, PhD, FAAN, School of Nursing, UCSF, San Francisco, CA; Bradley E. Aouizerat, PhD, School of Nursing, UCSF, San Francisco, CA; Thierry Jahan, MD, School of Medicine, UCSF, San Francisco, CA; Claudia West, RN, MS, School of Nursing, UCSF, San Francisco, CA; Bruce Cooper, PhD, School of Nursing, UCSF, San Francisco, CA; and Christine Miaskowski, RN, PhD, FAAN, School of Nursing, UCSF, San Francisco, CA

Symptom clusters were defined as stable groups of interrelated symptoms that occur simultaneously. However, because numerous methodologic differences exist across previous studies of symptoms cluster, it is difficult to draw definitive conclusions regarding the number and types of symptom clusters that occur in oncology patients with a specific cancer diagnosis or in those who undergo a specific cancer treatment.

The study purposes were: to determine the prevalence and severity of symptoms at the middle, end, and one month after the completion of RT; to determine the number and types of symptom clusters at these three time points; and to evaluate for changes over time in these symptom clusters.

The UCSF Symptom Management Model served as the theoretical framework.

Patients (n=160) completed a clinical questionnaire that obtained information on demographic and clinical characteristics, as well as the Memorial Symptom Assessment Scale (MSAS) that measured the multidimensional experience of symptoms. In order to have a sufficient amount of data, symptoms that were present in > 20% of the patients were used in these analyses. At each time point an exploratory factor analysis (EFA) was performed to determine the number of symptom factors based on symptom severity ratings. For each time point, differences in severity scores for each of the symptom clusters between patients with breast and prostate cancer were evaluated using the Mann-Whitney two sample rank-sum test.

Although the number and the specific symptoms within each symptom cluster were not identical across the three time points, three relatively similar symptom clusters (i.e., mood-cognitive symptom cluster, sickness-behavior symptom cluster, treatment-related, or pain symptom cluster) were identified in this sample. The internal consistency coefficients for mood-cognitive symptom cluster and sickness-behavior symptom cluster were relatively high at >0.70. Of note, the majority of the symptom cluster factor scores were significantly higher in patients with breast cancer compared to those with prostate cancer. These findings suggest the occurrence of general symptoms clusters as well as disease and treatment specific symptom clusters.

Funding Source: National Institute Nursing Research (NR04835 and T32-NR07088)

AQ

THE PATTERNS OF CHANGE IN SYMPTOM CLUSTER INTENSITY ACROSS THE TREATMENT TRAJECTORY IN BREAST CANCER.

Hee-Ju Kim, PhD, RN, University of Ulsan, Ulsan, Korea; Andrea Barsevick, PhD, RN, AOCN®, Fox Chase Cancer Center, Philadelphia, PA; and Susan Beck, PhD, RN, FAAN, University of Utah, Salt Lake City, UT

Although the diverse aspects of symptom clusters have been investigated, it unknown whether there are distinct trajectories of the symptom cluster intensity.

This study aimed to examine the patterns of change in the symptom cluster intensity (SCI) across the treatment trajectory in breast cancer patients, and to distinguish among different changing patterns.

The Theory of Unpleasant Symptoms, which explains the existence of symptom clusters and influencing variables, served as the conceptual basis.

A secondary analysis was adopted. The sample included 160 breast cancer patients undergoing chemotherapy or radiotherapy. Cluster analysis of subjects was done with the attributes of SCI across three different time points: before (Time 1) and after initiating chemotherapy or radiotherapy (Times 2 & 3). SCI was the unit-based scores of five symptoms found in the psycho- neurological cluster (depressed mood, cognitive disturbance, fatigue, insomnia, pain). ANOVAs and chi-square tests were conducted to examine differences among changing patterns.

Instruments included: the General Fatigue Scale (fatigue); the Profile of Mood States-Short Form (depressive mood, cognitive disturbance); the Pittsburgh Sleep Quality Inventory (insomnia); the Side Effect Checklist (pain); and the ECOG performance status (baseline performance status).

Five distinct patterns of change in SCI across treatment trajectory were identified. As for the patients in group I, SCI was moderate at baseline and it dramatically increased over time (21%). In group II, SCI was low at baseline and decreased over time (29%). In group III, SCI was moderate at baseline, slightly increased at Time 2, and then decreased to the baseline level at Time 3(24%). In group IV, SCI was high at baseline and it dramatically decreased over time (13%). In group V, SCI was high at baseline and it gradually increased over time (13%).

The five patterns of change were significantly different in baseline physical performance status and symptom management strategy used during treatments; they were also different in a patient outcome (functional limitations in daily activities).

Future studies need to explore additional factors that uniquely characterize each changing patterns. We recommend clinicians to use our findings to inform patients regarding symptom experience during treatment.

Funding Source: Oncology Nursing Society, small grant

AR

THE ASSOCIATION OF FREQUENCY, INTENSITY AND DISTRESS OF FATIGUE, PAIN AND INSOMNIA FOR CHEMOTHERAPY PATIENTS.

Jacquelyn Keehne-Miron, PhD, RN, MSN, AOCN®, Amgen, Thousand Oaks, CA; Barbara Given, PhD, RN, FAAN, Michigan State University, East Lansing, MI; Alla Sikorskii, PhD, Michigan State University, East Lansing, MI; and Bill Given, PhD, Michigan State University, East Lansing, MI

Researchers have descriptively studied multiple co-occurring symptoms throughout the chemotherapy experience. However, the various dimensions of the symptom experience (frequency, intensity and distress levels) of co-occurring symptoms have not been collectively examined as they change over time throughout chemotherapy.

The purpose of this research was to examine the dimensions of frequency, intensity, and distress of the co-occurring symptoms of fatigue, pain and insomnia as they occur at two different data collection points in two randomized clinical trials (RCT's) of a cognitive behavioral intervention. This study answered the question: At baseline observation and 10 weeks is there an association between the dimension of fatigue and the dimension of pain and/or insomnia for adults receiving chemotherapy? Co-variates examined include: age, site/stage of cancer, sex, and co-morbid conditions.

An adapted version of the Armstrong Symptom Experience Model was used as the conceptual framework.

Seven cancer centers throughout the Midwest and East coast accrued patients. Descriptive, cross-tabs, t-tests and regression analyses were conducted using SPSS version 13.0.

Adults receiving chemotherapy for solid tumors or non-Hodgkin's lymphoma (n=671) participated. Seventy percent were female and 86.3% were Caucasian. Thirty-five percent had breast cancer and 21% had lung cancer. The mean age was 57.6 years (range of 25-90). At baseline and 10 weeks there was an association between the three dimensions of fatigue and the same dimensions for pain and insomnia. For all dimensions of pain and insomnia, with the exception of 10 week frequency and distress of insomnia, younger age enhanced the dimension of pain or insomnia over and above the effect of fatigue. Co-morbid conditions also enhanced the dimensions of pain at both baseline and 10 weeks over and above the effect of fatigue. However, co-morbid conditions only influenced frequency of insomnia at baseline over and above the effect of fatigue. Future studies should be directed toward the examination of interventions aimed at various dimensions of multiple co-occurring symptoms such as fatigue, pain and insomnia in RCT's.

Funding Sources: ONS Foundation, National Cancer Institute (RO1 CA 79280 & RO1 CA 30724), Walther Cancer Institute, and Michigan State University College of Nursing

AS

A CLUSTER OF SYMPTOM AND QUALITY OF LIFE OVER TIME IN PATIENT WITH HEPATOCELLULAR CARCINOMA.

Ching-yi Lai, MN, Koo Foundation Sun Yat Sen Cancer Center, Taipei, Taiwan

Hepatocellular carcinoma (HCC) is the leading cause of cancer death in Taiwan and the incidence rate is rising globally. Few researches focused in physical symptom along with the disease progression among HCC patients. Therefore to describe and

explore the symptom and the clusters, severity, and continuance is necessary.

To describe symptom clusters and explore the correlations between quality of life (QOL) and symptom clusters among HCC patients at the time of diagnosis and three months later.

Base on the Lenz Theory of Unpleasant Symptoms as theoretical framework. This theory indicated that symptoms were clustering, not exist alone. They were influenced each other.

This research was designed as a longitudinal study. Thirty newly diagnosed HCC patients were recruited from a cancer hospital in Taiwan. Data were collected via structured interview through three measurements, Quality of Life Questionnaire, Symptom Distress Scale (SDS) and the Hospital Anxiety and Depression Scale (HADS), at the time of diagnosis and 3 months later.

The result reported an average of mild distress symptoms at two time point among these patients. From findings, symptoms were gathered into neuro-psychological (NP), gastro-intestinal (GI), pain and elimination clusters at the time of diagnosis. Four clusters which were pain, disease associated symptom (DAS), psychological (P) and gastrointestinal cluster (GI) were found at three months after the diagnosis.

Some symptoms clusters were strongly correlated, GI and NP ($r = .62$, $P < .001$), NP and pain ($r = .48$, $P < .05$). At second time point, pain cluster was significantly correlated with DAS, P and GI clusters($r = .56$, $P < .001$; $r = .56$, $P < .001$; $r = .39$, $P < .005$). DAS was strongly correlated with P and GI ($r = .91$, $P < .001$; $r = .40$, $P < .005$). Multiple regression analyses found that symptom severity explained 14.6% of the variance.

The result revealed that symptom clusters were different and quality of life was not affected by symptom clusters at the time of diagnosis and 3 months later among patients. Study showed that these different symptom clusters would facilitate healthcare providers in patient assessment and further to improve the QOL for HCC patients.

Podium Session 6: Cognitive Function

AT

WOMEN'S EXPERIENCES OF LIVING WITH NEUROCOGNITIVE CHANGES WHILE UNDERGOING CHEMOTHERAPY FOR BREAST CANCER. Joyce Thielen, PhD, RN, CS, Elms College, Chicopee, MA

Purpose. The purpose of this study was to describe the lived experience of the neurological changes women describe while undergoing chemotherapy for breast cancer.

Background. Breast cancer is the most frequently diagnosed cancer in U.S. women and the most prevalent cancer in the world. There is growing recognition that cognitive difficulties may occur in women who receive adjuvant chemotherapy for breast cancer. Published research in the area of "chemo brain" has been quantitative and little is known how these difficulties affect everyday life from the patient's perspective.

Method. A descriptive, phenomenological approach was used to describe the lived experience of neurocognitive effects of chemotherapy on everyday life. A purposive sample of 13 women with breast cancer participated in audiotaped interviews in a community setting of their choice. Participants were either currently undergoing or had recently completed adjuvant chemotherapy treatment; with reported changes in memory, concentration, or attention since undergoing chemotherapy; who were able to read and understand English and were willing and able to talk about their experiences. Colaizzi's descriptive phenomenological method guided data analysis.

Results. Data were grouped into the following eight recurrent themes: 1) Insidious recognition and validation of "chemo brain"; 2) Looking for answers in all the wrong places; 3) Can't keep my eye on the ball; 4) Underwhelming information for an overwhelming experience; 5) What the future holds; 6) Work department: Hold please!; 7) Caution: Woman on chemo on board; 8) Coping strategies.

Conclusions & Implications. Women receiving chemotherapy for breast cancer have substantial problems with cognition affecting their everyday lives. Suggestions of caring implications which emerged from the data underscore the need to support these women through this underestimated experience and stressful time of their lives.

Funding Source: Elms College Faculty Development Grant

AU

CHEMOTHERAPY-INDUCED COGNITIVE CHANGES IN BREAST CANCER PATIENTS. Catherine Jansen, RN, PhD, OCN®, San Francisco Kaiser Permanente Medical Center, San Francisco, CA; Marylin Dodd, RN, PhD, FAAN, University of California, San Francisco, San Francisco, CA; and Christine Miaskowski, RN, PhD, FAAN, University of California, San Francisco, San Francisco, CA

Although studies suggest that standard dose chemotherapy for breast cancer causes cognitive impairments, the evidence for chemotherapy-induced cognitive changes is inconsistent.

The purposes of this study were (1) to evaluate newly-diagnosed breast cancer patients prior to chemotherapy (doxorubicin and cyclophosphamide alone or followed by a taxane) and assess changes over time in cognitive function (one week after four cycles of chemotherapy, as well as one week and six months after chemotherapy completion); and (2) to evaluate correlations between cognitive function and anxiety, depression, fatigue, hemoglobin level, menopausal status, and perception of cognitive function.

The theoretical framework of "Potential Contributing Factors for Chemotherapy-Induced Impairments" guided this study.

This prospective, repeated measures study enrolled a convenience sample ($n = 71$) from two outpatient oncology clinics. Instruments used have adequate reliability and validity and include the Repeatable Battery for the Assessment of Neuropsychological Status, Stroop Test, Grooved Pegboard, Attentional Function Index, State-Trait Anxiety Inventory state subscale, Center for Epidemiological Studies Depression Scale, and Lee Fatigue Scale. Descriptive statistics were used to summarize sample characteristics, paired t tests were used to determine any cognitive changes between baseline and after completion of doxorubicin and cyclophosphamide, and linear mixed model analyses were used to determine whether significant changes remained after controlling for anxiety, depression, fatigue, hemoglobin level, menopausal status and perceived cognitive function. Linear mixed models will be used to determine the pattern of cognitive changes over the entire study period.

Preliminary results, based on 62 women who have completed two assessments, revealed significant changes in 2 cognitive domains [visuospatial skill ($p < 0.0005$), delayed memory ($p = 0.017$)], as well as the total cognitive score ($p < 0.0005$) over time. These changes remained significant, even after controlling for anxiety, depression, fatigue, hemoglobin level, menopausal status, and perceived cognitive function. Data from this study support the hypothesis that chemotherapy has a negative impact on select domains of cognition. It is hoped that with the longer follow-up, we will be able to elucidate the phenomenon of chemotherapy-induced cognitive changes and describe its characteristics and corresponding covariates.

Funding Sources: Funded in part by ACS doctoral scholarship 02-209-03, ONF doctoral scholarship

AV

COGNITIVE DYSFUNCTION AND ITS RELATIONSHIP TO QUALITY OF LIFE IN AFRICAN AMERICAN AND CAUCASIAN BREAST CANCER SURVIVORS. Diane Von Ah, PhD, RN, Indiana University, School of Nursing, Indianapolis, IN; Kathleen Russel, PhD, Indiana University, School of Nursing, Indianapolis, IN; Anna Maria Storniolo, MD, Indiana University, School of Medicine, Indianapolis, IN; and Janet

Carpenter, PhD, Indiana University, School of Nursing, Indianapolis, IN

Breast cancer survivors (BCS) constitute the largest group in the cancer survivor community, with over 2.4 million female BCS estimated to be living in the United States alone. Up to 83% of BCS report some degree of cognitive dysfunction, including problems with attention. Although cognitive dysfunction after cancer has been identified as a national research priority, few studies have empirically explored the relationship between cognitive dysfunction and quality of life in persons with cancer.

The purpose of this study was to examine relationships between self-reported cognitive dysfunction and quality of life in African American and Caucasian BCS. Self-reported cognitive dysfunction in this study was measured as capacity to direct attention (CDA), since this ability is vitally important in supporting other cognitive abilities such as acquiring important information, planning activities, making decisions, completing tasks, and accomplishing goals.

Ferrell and colleagues' model was used to define quality of life.

A secondary analysis of questionnaire data measuring CDA and quality of life domains defined by Ferrell and colleagues including psychological well-being (depressive symptoms), social well-being (social support, marital satisfaction, parental satisfaction), physical well-being (activity level, physical function, fatigue), spiritual well-being (spirituality), and global quality of life (overall well-being) was conducted. Descriptive statistics, Pearson's or Spearman's correlations, and multiple regression were used.

62 African American and 72 Caucasian BCS aged 32-79 (M=56.3; SD=9.3) and a mean of 6.4 years post-diagnosis (SD=2.8) participated. The majority reported moderate ability to direct attention, while 26% reported poor attention. Deficits in CDA were significantly related to poorer quality of life including more depressive symptoms, less social support, lower parental satisfaction, poorer physical functioning, greater fatigue, and lower well-being ($p < .05$).

IMPLICATIONS: Over one in four BCS reported poor attention indicating that cognitive dysfunction can continue long after the diagnosis and treatment for breast cancer. CDA was related to poorer quality of life outcomes suggesting that interventions that address survivors' CDA may have a broad impact on quality of life in BCS.

Funding Sources: NIH, NCI (R03CA97737), grant T32 NR007066 from the NI NR, NIH, to Indiana University School of Nursing, and the Mary Margaret Walther Program for Cancer Care Research

AW

THE CHALLENGE OF MEASURING NEUROCOGNITIVE CHANGE.

Samantha Mayo, RN, HBSC, BSCN, MN, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, Toronto, Canada

The purpose of this presentation is to describe some of the major challenges regarding the measurement of neurocognitive changes related to cancer treatment, particularly hematopoietic stem cell transplantation (HSCT), to stimulate discussion regarding key considerations when selecting outcome measures, and to offer strategies for future research.

Despite the dramatic impact to daily functioning, neurocognitive changes after HSCT are subtle and variable, making the complexity of this experience difficult to understand through the exclusive use of objective assessments of neurocognitive functioning (e.g. global screening, neuropsychological batteries). Indeed, studies that have included both self-report complaints and objective measures of function demonstrate that they are poorly correlated, whereby, for instance, those reporting greater complaints may differ from those demonstrating greater impairment. Given the apparent disconnect between self-report and objective measures of neurocognitive performance after transplant, many questions are warranted and will be discussed - Are patients' experiences influenced by more than function alone? Do conventional functional measures evaluate the most relevant neurocognitive domains? Most importantly, what is a clinically significant change in cognitive function, from whose perspective should this be defined, and how can we best evaluate this?

Largely consistent with research surrounding the neurocognitive consequences of chemotherapy treatment for solid tumours, neurocognitive changes (e.g. forgetfulness, decreased thinking clarity, etc.) have been also reported after HSCT for haematological cancers. However, theory development regarding the etiology of these changes, the neurocognitive domains most affected, and potential for recovery is challenged by the inconsistency of outcome measures used across studies.

Drawing on research approaches that have been applied to address this issue in other cancer and non-cancer patient populations, specific implications for future inquiry regarding neurocognitive change after HSCT will be offered.

The choice of outcome measures in any observational and/or intervention study has major implications on theory development and clinical practice. As such, measurement decisions must be made only after careful consideration of what specific constructs are being measured and how this may both limit and enable the formulation of clinically significant conclusions.

Podium Session 7: Methods and Instruments

AX

THE DEVELOPMENT AND TESTING OF A SCALE FOR MEASUREMENT OF PERCEIVED SELF-EFFICACY FOR CANCER-RELATED FATIGUE SELF-MANAGEMENT.

Amy Hoffman, PhD, MSN, BSN, RN, Kirkhof College of Nursing, Grand Rapids, MI; Audrey Gift, PhD, RN, FAAN, Michigan State University, East Lansing, MI; Alexander von Eye, PhD, Michigan State University, East Lansing, MI; Barbara Given, PhD, RN, FAAN, Michigan State University, East Lansing, MI; Charles Given, PhD, Michigan State University, East Lansing, MI; and Marilyn Rothert, PhD, RN, FAAN, Michigan State University, East Lansing, MI

Persons with cancer report many troublesome symptoms such as cancer-related fatigue (CRF). Self-Efficacy Theory proposes that persons who believe in their ability to manage their symptoms can achieve optimal physical functional status (PFS). Perceived self-efficacy (PSE) is theorized to influence PFS through symptom self-management behaviors but this notion has not been empirically tested. Likewise, a literature review found no existing scale to measure PSE for fatigue self-management in persons with cancer.

The purpose of this study is to describe the development and testing of a measurement tool for Perceived Self-Efficacy for Cancer-Related Fatigue Self-Management(PSEFSM).

Development of this measure was guided by Bandura's Self-Efficacy Theory which explains the cognitive process of symptom self-management to show how increasing a patient's PSE to manage symptoms can be an effective means for a patient to better manage symptoms and achieve optimal PFS.

A six-item scale adapted from Lorig's Arthritis Self-Efficacy Scale was developed to measure PSEFSM. Psychometric testing was completed using secondary analyses from baseline observation of two randomized control trials performed on 63 persons with lung cancer (LC) and 235 persons with other cancer (OC) diagnoses who were undergoing a course of chemotherapy.

Internal consistency reliability resulted in a Cronbach's alpha ranging from .91 to .92 for persons with LC and OC diagnoses and the total sample. The scale's content validity was evaluated by a panel of experts who agreed the scale operationalized the construct PSEFSM. Guided by the theoretical framework, evidence of construct and external validity was tested using mediation analyses. As predicted, for the total sample and in the LC and OC groups separately, the hypothesis of mediation from CRF to PFS through PSEFSM was tested showing significant support for partial mediation. In the total sample, the magnitude of the relationship between CRF and PFS was reduced after PSEFSM was controlled, with the mediation accounting for 12% of the variance ($t = -2.59$; $p = .009$). The findings indicate that the tool provides

a reliable and valid measure of PSEFSM that could be used in research to facilitate the development of interventions to increase PSE to achieve optimal symptom self-management.

Funding Sources: National Institutes of Health, National Institute of Nursing Research, Individual Ruth L. Kirschstein National Research Service Award, Grant Number 1F31 NR009621-01A1. Fatigue, Self-Efficacy, and Functional Status in Persons with Lung Cancer

AY

RECONCILING DIFFERENCES IN PATIENT REPORTED DATA.

Marlene Cohen, RN, PhD, FAAN, University of Nebraska Medical Center College of Nursing, Omaha, NE; Cathy Rozmus, DSN, RN, University of Texas Health Science Center Houston School of Nursing, Houston, TX; Marianne Moore, RN, MSN, CNM, University of Texas Health Science Center Houston School of Nursing, Houston, TX; Tito Mendoza, PhD, M.D. Anderson Cancer Center, Houston, TX; and Charles Cleeland, PhD, M.D. Anderson Cancer Center, Houston, TX

The purpose of this presentation is to describe issues in data triangulation in mixed methods studies. In both clinical situations and in mixed methods studies, qualitative and quantitative data may be incongruent, and decisions must be made about how to reconcile the differences to reach accurate conclusions.

Data from three completed studies will be used to illustrate issues with incongruent data from patients that are obtained with different methods and potential resolution of these data. In the first study, data were obtained from both phenomenological interviews and brief symptom measures in patients undergoing cancer treatment. It was found that symptom descriptions in the interviews were more severe than ratings on the symptom measures. In the second study, patients with advanced cancer reported not having pain but having a variety of other symptoms. Treating them with therapies directed at relieving pain improved these symptoms. Interviews with these patients revealed a variety of reasons they were not reporting pain. In the third study, cancer survivors rated their symptoms low but again in narrative text described severe symptoms that seriously impaired their functioning. Obtaining these discrepant findings from patients at different points in the cancer trajectory underscores the importance of accurately understanding patient data.

In the context of clinical trials, these data are increasingly important as "patient reported outcomes" (PROs). PROs are any reports coming directly from patients without interpretation by others about how they function or feel in relation to a health condition and its therapy. PROs have become increasingly essential in clinical trials to evaluate products, and have received attention from the Food and Drug Administration (FDA).

Obtaining data to illuminate what is relevant to patients with various health conditions and how interventions may improve these outcomes is an important aspect of cancer nursing research.

Challenges in understanding data are recognized by researchers, clinicians, and the FDA. Measures important to oncology nurse researchers such as symptoms and quality of life are affected by health status and other valued aspects of life, and may be altered by cultural perspectives.

Funding Sources: National Institutes of Health, National Institute of Nursing Research, RO1 grant

AZ

DEVELOPMENT AND VALIDATION OF A SCALE TO MEASURE HEALTH-RELATED SOCIOECONOMMIC WELL-BEING IN PERSONS WITH A CANCER DIAGNOSIS.

Barbara Head, PhD, RN, CHPN, ACSW, University of Louisville School of Medicine, Louisville, KY

Socioeconomic status, the impact of a cancer diagnosis and related treatment on that status and related well-being significantly impact a person's quality of life and coping abilities.

The impact of socioeconomic status on the diagnosis, treatment, survival, and overall quality of life in persons with cancer has been well documented. Yet, many studies overlook the relevance of socioeconomic factors when measuring the impact of cancer care. A multitude of tools exist for the measuring of health-related quality of life (QOL) in oncology, but the majority do not recognize socioeconomic well-being as a relevant domain. The purpose of this study was to develop and validate a theory-based scale measuring the construct of socioeconomic well-being.

The Ecological Theory of Germain and Gitterman and James Coleman's theory of social class were used as the basis for construct definition and item development.

Following expert review, the proposed lmeasure, a demographic questionnaire, and other instruments necessary for the validation study were mailed to a random sample of 1200 persons diagnosed with cancer. Classical measurement theory directed the analysis of the proposed instrument. This iterative process included analysis of reliability via the Cronbach alpha, evaluation of corrected item total correlations and factor loadings, and analysis of content and construct validity at the item level via principal component analysis. This process resulted in one scale measuring overall socioeconomic well-being with two subscales (Material Capital and Social Capital) and a total of 17 items. Incremental validity was evaluated using a hierarchical regression model.

The resulting instrument for the measurement of health-related socioeconomic well-being could be used with existing measures of other domains or as a stand alone measure, and is appropriate for application in both clinical and research settings

Podium Session 8: Partners/Spouses

BA

MOOD, HEALTH BEHAVIORS, AND INTERVENTIONS USED TO REDUCE STRESS IN SPOUSES OF PATIENTS WITH CANCER.

Linda Goodfellow, PhD, RN, Duquesne University School of Nursing, Pittsburgh, PA

Spouses of patients with cancer are a highly stressed group of individuals. It is imperative that oncology nurses include the spouse of a patient with cancer in their plan of care and suggest interventions that may help reduce the stress associated with caring for an ill partner with cancer.

The specific aims of this study were to: 1) examine the relationships between mood, anxiety, confusion, depression, fatigue, and health behaviors in spouses of patients with cancer; 2) identify interventions that spouses of patients with cancer use or are willing to use to reduce stress; and, 3) determine any gender differences in regard to the major variables under study.

Concepts from the stress literature, stress management, and family systems theory were used to guide this study.

A descriptive, survey design was used to examine the relationships between mood, anxiety, confusion, depression, fatigue, and health behaviors, interventions to reduce stress, and gender. Male and female spouses of patients with cancer (N=76) were recruited from an out-patient chemotherapy unit. Participants were asked to complete several questionnaires and to return them in the envelope provided. Mood, anxiety, confusion, depression, and fatigue were measured by the Profile of Mood Scale. Researcher generated questionnaires were used to collect data including a Spousal Health Assessment tool, the Frequency of Interventions Used to Reduce Stress Questionnaire, and the Intervention Checklist. Descriptive statistics and correlational procedures were used to analyze the data.

Significant relationships and gender differences were found among the major variables including mood, anxiety, confusion, depression, fatigue, health behaviors, and interventions used to reduce stress. Future studies need to test the effects of interventions most frequently used to reduce stress on psychosocial and physiologic outcome measures in spouses of patients with cancer.

Funding Source: Duquesne University Faculty Development Research Award

BB

COUPLES' EXPERIENCE OF LEARNING ABOUT BREAST CANCER.

Kathryn Anderson, PhD, ARNP, LMFT, Florida International University, Miami, FL

From the moment of suspicion of breast cancer (BrCA), the lives of couples are affected as the reality of breast cancer enters their world. Studies have explored the impact of breast cancer on couples, but few tell the experience from the perspective of both partners in ethnically diverse couples. With BrCA mortality for both Black and Hispanic couples significantly higher than that of white couples, it is crucial to examine the experience of these ethnicities.

As part of the introduction to culturally sensitive data collection, couples were asked to share their experience as a couple once the possibility of BrCA entered their lives to provide an understanding for the couple interaction focus.

The Sound Relationship House Model,that examines couple relationship characteristics provided the background theoretical framework for the study.

Twelve couples (four Hispanic, four non-Hispanic Black, and four non-Hispanic White) were interviewed within the 1st year of their diagnosis of BrCA in a pilot study. This convenience sample of couples was recruited at a private surgical oncology office and from the community. The initial exploratory question was "Tell us briefly about your experience as a couple dealing with the breast cancer, since you first learned that you might have breast cancer. What has it been like for you from a couple perspective?" This introductory section of the interview about the couple experience was to last 15-20 minutes. Interviews were transcribed verbatim and checked for accuracy. Data analysis was completed using constant comparative analysis with N-Vivo 7.0 software.

All couples reported that they had not talked about their experience together, other than to deal with diagnosis and treatment logistics, despite constant thinking about other concerns to do with the BrCA. Couple themes will be discussed, with similarities and differences across ethnicities expressed. It became clear to the researchers that this introductory question held critical information for couples that offer implications for practice and further couple research. We determined that this questioning served as a critical relationship development tool to facilitate the later research discussions with these couples of differing ethnicities.

BC

EXPLORING A DIFFUSION OF BENEFIT: DOES A WOMAN WITH BREAST CANCER DERIVE BENEFIT FROM AN INTERVENTION DELIVERED TO HER PARTNER?

Barbara Cochrane, PhD, RN, FAAN, University of Washington, Seattle, WA; Frances Lewis, PhD, RN, FAAN, University of Washington, Seattle, WA; and Kristin Fletcher, MS, University of Washington, Seattle, WA

In 2008 over 250,000 new cases of breast cancer will be diagnosed in the U.S. Because of profound treatment demands and the importance of the partnered relationship for psychosocial adjustment, the potential for a partner-only intervention to have a diffusion of benefit to the woman is scientifically and clinically intriguing.

At a time when women are undergoing treatment for breast cancer, interventions to address its impact on women and families are often directed toward the women. The purpose of this pilot study was to provide preliminary data on a diffusion of psychosocial benefit for women diagnosed with breast cancer when only their partners receive an intervention regarding the breast cancer experience.

The study is based on a relational model of adjustment to breast cancer and Bandura's Social Cognitive Theory.

This pilot study involved a single-group pretest-posttest design conducted during a larger evaluation of the Helping Her Heal psycho-educational intervention for partners of women with breast cancer. Intervention sessions were not conducted with the women, but women did complete some at-home assignments with partners. Eligible women had a first diagnosis of Stage 0-III breast cancer within the previous 6 months and were cohabiting in a committed relationship for at least 6 months with a partner willing to participate in the main study. Standardized self-report questionnaires with well-established reliability and validity were used to collect data on state anxiety (CES-D), depressed mood (STAI), and marital quality (DAS).

The study sample included 9 women, who were an average of 52.7 years old (range=32-69 years), partnered an average of 26.7 years (range=5-44 years), and diagnosed an average of 4.5 months earlier (range=1.6-7.7 months). Wilcoxon Signed Ranks Tests showed significant pre- to post-intervention improvements in women's anxiety (p=0.01), depressed mood (p=0.01), and the affectional expression domain of marital quality (p=0.03). This study offers preliminary support for a diffusion of benefit, indicating that additional research is needed to provide an evidence base for focusing some clinical efforts on partners alone, rather than adding further to diagnosed women's clinical burden.

Funding Sources: Suzanne E. VanHooser Nursing Research Fund Award, University of Washington School of Nursing; the University of Washington School of Medicine Tennis Fund; and the ONS Foundation

BD

PARTNERS' SURVIVORSHIP FROM PROSTATE CANCER TREATMENT EFFECTS.

Jean Boucher, RN, PhD, University of Massachusetts Worcester, Worcester, MA

The American Cancer Society estimates that prostate cancer (PC) affects over 230,110 males as the leading cause of cancer in men in the United States. Current gaps in knowledge exist regarding long-term follow-up needs involving partners' perspectives both individually and together in their relationship as a dyad with regards to prostate cancer survivorship. Current focus needs to shift towards understanding partners' perspectives in order for oncology nurses to provide appropriate long-term information, care and ongoing support.

The purpose of this study was to explore partners' perspectives after prostate cancer treatment to understand these long-term, permanent effects individually and as partners. This study's specific aims were to:

1. Describe experiences living with the long-term and permanent treatment effects of prostate cancer from the perspective of men and their partners.
2. Identify follow-up information, physical and psychosocial care, and support of patients and their partners individually, and as partners in regards to prostate cancer survivorship.

The philosophical framework of Naturalistic inquiry guided the study. The qualitative descriptive method was used to study the experience for prostate cancer partners living with long-term and permanent treatment effects from their perspective which has not been fully explored.

A qualitative descriptive design was employed with recruitment of 8 prostate cancer patients and their partners (n=16).

The sample included formal interviews using a purposive sampling of local and regional stage disease who received radical prostatectomy. Maximum variation sampling techniques were used. Qualitative content analysis techniques were employed. Analysis of data utilized coding methods as described by Sandelowski. Interviews were transcribed into Microsoft Word. Content analysis was used to inductively derive themes comprising a logical summary.

Themes included acknowledging a problem via PSA, biopsy, and opinions; the quest of partner dyads to learn and be informed including use of the internet, robotics, and diagrams; participants' concerns with nerve sparing procedures and treatment related to erectile dysfunction; recovery and use of Kegel exercises; and, partner dyads in having a closer relationship with helpfulness in talking with PC patients, along with support of family, friends, and religion. Oncology nurses and other practitioners can utilize

the results from this study to provide appropriate information, care, and ongoing support in a more efficacious and proactive manner.

Funding Source: ONS Foundation Small Grants Award

Podium Session 9: Survivorship

BE

SURVIVORSHIP PROGRAM DEVELOPMENT: NEEDS ASSESSMENT IN COMMUNITY CANCER CENTERS UTILIZING ACADEMIC PARTNERSHIPS. Maura C. Schlairet, RN, MSN, EdD, Valdosta State University, Valdosta, GA; Mary Ann Heddon, RN, MSN, OCN®, South Georgia Medical Center–Pearlman Cancer Center, Valdosta, GA; and Martha Griffis, RN, BSN, OCN®, South Georgia Medical Center–Pearlman Cancer Center, Valdosta, GA

Academic and research institutions have led the way in improving cancer care in the United States. However, 85% of cancer patients receive treatment and follow-up care at community cancer centers and few healthcare providers have received training to identify and meet these survivors' multidimensional needs.

The purpose of this project was to document the needs of cancer survivors receiving care in a community setting, by partnering with an academic institution, to design a meaningful survivorship program.

The Illness Trajectory Theory provided the basis for modification and use of an existing needs assessment instrument.

The Survey of Needs, developed by the Cancer Education Program Staff and the Mayo Clinic Cancer Center, was modified to explore survivors' needs across multiple dimensions. The survey, consisting of 50 Likert-style items representing physical, social, emotional, spiritual, educational, and other needs, was distributed to 826 adult cancer survivors receiving treatment or follow-up care at a community cancer center in a southeastern state. This center was located in a medically underserved region and provided care for underserved populations. Cancer center staff were also surveyed using a similar instrument to explore perceptions of survivors' need and distress.

Response rate for survivors was 37%. The sample was 67% female with a mean age of 63 years. Most frequently reported needs included fatigue, fear of recurrence, sleep disturbance, and stress. Significant positive correlations were observed between number of needs and associated distress scores. Global need and distress scores were significantly correlated with greater desire for survivorship education. Utilizing general linear modeling, significant difference in survivors' need and distress scores, and interest in survivorship education, was observed by gender and age.

Response rate from cancer center staff was 90%. Significant difference was observed in perception of survivors' distress, interest in education, and preference for education delivery formats with markedly higher scores among staff compared to survivors' ratings.

The modified Survey of Needs appeared to be a simple and reliable instrument for use with cancer survivors to articulate need and quantify associated distress. Findings here will promote development of a survivorship program that may serve as a model for other community cancer centers.

Funding Source: Southwest Georgia Cancer Coalition

BF

TWO YEARS LATER: A QUALITATIVE FOLLOW-UP STUDY OF WOMEN'S PSYCHOLOGICAL RESPONSES TO TRANSITIONING FROM BREAST CANCER PATIENT TO SURVIVOR. Robin Lally, PhD, RN, AOCN®, CNS, University at Buffalo SUNY School of Nursing, Buffalo, NY; and Paula Hamilton, RN, BSN, MS Student, University at Buffalo SUNY School of Nursing, Buffalo, NY

Over 2.4 million women in the U.S. live with a personal history of breast cancer. Approximately 30% of these women will experience significant psychological distress as a result of their diagnosis. Depression and other psychiatric disorders may also persist for years after treatment, affecting the quality of life of women and their families.

Research suggests that certain traits and ways of coping promote better psychological outcomes of the breast cancer experience overall. Few studies, however, focus specifically on women's thought processes during the stressful transitions from wellness to diagnosis and treatment to survivorship. The purpose of this study was to explore the thoughts, emotions and behaviors of 2-year breast cancer survivors as they described their transition from diagnosis to survivorship, and compare these findings with their initial pre-treatment cognitive-emotional response to diagnosis in order to identify themes that continued and changed over time.

Naturalistic inquiry guided study conduct and analysis.

Twelve women initially interviewed pre-treatment (mean 13 days post-diagnosis) (T1), participated in a second, open/semi-structured interview 23-27 months later (T2). Women were white, married, and 39-81 years old (mean = 55). All were treated at a Midwestern breast center and underwent: lumpectomy (7), mastectomy [bilateral (4) and unilateral (1)], chemotherapy (6), radiation (7), and ongoing hormonal therapy (6) for stage 0 – III breast cancer. All were breast cancer free at T2. Two had ongoing health concerns. Constant comparative analysis of T2 data, and T2 with T1 data was performed during interviewing. Directed content analysis was used by the researchers to independently and then collectively coded/categorize data, guided by T1 categories.

Several themes identified at T2 were consistent with themes/subthemes at T1, although focus of the themes often shifted to reflect women's changed perspectives over time. Ongoing themes included: finding meaning, introspection, self-growth, and survivor identity. New T2 themes included: post-treatment void, cancer uncertainty, and looking back. Most women had not participated in available support groups or counseling. The findings support the need for assessment and intervention at the transition points of breast cancer care to promote thought processes that will contribute to psychological wellbeing.

Funding Sources: School of Nursing, ONS, MNRS

BG

WORK RETURN AND CHANGES IN WORK ACTIVITIES ASSOCIATED WITH TREATMENT FOR GYNECOLOGICAL CANCERS. Elizabeth Ercolano, RN, MSN, DNSC, Yale University School of Nursing, New Haven, CT; and Ruth McCorkle, PhD, FAAN, Yale University School of Nursing, New Haven, CT

There have been a number of factors identified that interfere with a person's ability to work during or after cancer treatment for common cancers. Factors include being a women, manual labor, other illnesses, and effects of the cancer and treatments. There is little or no information on women with gynecological cancers' ability to work.

This study's purpose is to further our understanding of the patient and cancer-related factors that may impact work in women with gynecological cancers.

SPECIFIC AIMS:

1. Describe patient and cancer-related characteristics of women with gynecological cancers and their time to return to work and changes in work activities overtime.
2. Examine the relationships among the patient and cancer-related characteristics to time to return to work and changes in work activities overtime.

The Vulnerability/Risk/Human Response/Care Model guided the study design.

DESIGN: A secondary analysis of data collected at baseline,1,3, and 6 months post-surgery as part of a randomized nursing clinical trial (McCorkle, 2003-2007).

SAMPLE: 71 women who were working at diagnosis and treated by surgery, chemotherapy and/or radiation.

MEASURES: Patient and Family Sociodemographic and Health

History Questionnaire and an Employment Questionnaire with established face and content validity measured patient and cancer-related factors. The Enforced Social Dependency Scale (ESDS) with an internal consistency of 0.96 and test-retest relability of 0.62 measured changes in work activities.

DATA ANALYSIS: Spearman correlations were conducted to measure the relationships among patient and cancer-related factors to time to return to work and changes in work activities overtime. A mixed effect model will be conducted to correct for repeated observations.

By 6 months,50% of the women were working. Cancer-related factors were strongly correlated more restrictions in work activities at 1 month (r=.302, p=.001) and 3 months (r=.440, p=.001) and moderately correlated at 6 months (r=.302, p=.024). Other illnesses were moderately correlated with more restrictions in work activities at 1 month (r=.254, p=.050) and 6 months (r=.304, =p.023). Future studies should consider the influence of workplace factors in addition to patient and cancer factors.

Funding Sources: National Institute of Health, National Institute of Nursing Research, 1R 01NR7778, R. McCorkle, PI

BH

DETERMINANTS OF FUNCTIONAL PERFORMANCE IN LONG-TERM SURVIVORS OF ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION WITH CHRONIC GRAFT-VERSUS-HOST DISEASE.

Sandra Mitchell, PhD, CRNP, AOCN®, National Institutes of Health, Bethesda, MD; Nancy Kline Leidy, RN, PhD, Center for Health Outcomes Research, United BioSource, Bethesda, MD; Daniele N. Avila, CRNP, MSN, National Cancer Institute, Bethesda, MD; Kathleen H. Mooney, RN, PhD, University of Utah, Salt Lake City, UT; William N. Dudley, PhD, University of North Carolina at Greensboro, Greensboro, NC; Susan L. Beck, APRN, PhD, University of Utah, Salt Lake City, UT; and Steven Z. Pavletic, MD, National Cancer Institute, Bethesda, MD

Clinical experience suggests that impaired functional capacity and distressing symptoms contribute to adverse changes in functional performance in patients with cGVHD. No prior research has examined the combined and relative contributions of functional capacity, symptom bother, and clinical characteristics to variations in functional performance in this population.

Study aims were to describe functional capacity and performance and to determine the factors accounting for functional performance in a sample of 100 allogeneic HSCT survivors with cGVHD.

The study was guided by the Functional Status Model as postulated by Leidy and extended by Stull et al.

Participants in a natural history study of alloHSCT survivors (median time since transplant 31 months; range 4-201 months) with cGVHD were comprehensively assessed. Functional capacity was determined by 2-minute walk distance, grip strength, and range of motion. Functional performance was measured using the Physical Component Summary Score (PCS) of the Medical Outcomes Study Short Form-36v.2 (SF-36). Symptom bother was captured through the Lee cGVHD Symptom Scale. Data were analyzed using descriptive statistics, tests for group differences and multiple regression.

PCS and all SF-36 subscale scores, except the mental health subscale score, were significantly lower than the US population normative value of 50 (p<.01). The most severe decrements were seen in physical function (Mean= 38.8 ±10.9) and physical role function (Mean= 37.88 ±11.88); 75% of the sample exceeded the threshold of minimally important clinical difference, scoring five or more points below norm on these two subscales. Age, gender, time since cGVHD diagnosed, cGVHD severity, intensity of immunosuppression and comorbidity, together with functional capacity, and symptom bother explained 55% of the variance in functional performance (R2=0.55; F=10.72; p<.001). More intensive immunosuppression, reduced capacity for ambulation, and greater symptom bother were significant independent predictors (p<.001) of impaired functional performance. Mediation modeling indicated that symptom bother had a direct effect on functional performance, as well as an indirect effect on performance, mediated by functional capacity (Sobel test p=.004). Results suggest a two-fold opportunity to improve functional performance, specifically through interventions to improve functional capacity, such as the capacity for ambulation, and through strategies to reduce cGVHD symptom bother.

Funding Sources: This research was supported in part by the Intramural Research Program of the NIH, and was partially funded by NCI training grant R25 CA093831 (Kathleen H. Mooney, PI).

Podium Session 10: Symptoms/Symptom Management

BI

THE EFFECTS OF MOOD DISTURBANCES ON SLEEP QUALITY IN ONCOLOGY OUTPATIENTS SCHEDULED TO BEGIN RADIATION THERAPY.

Christina Van Onselen, RN, California Pacific Medical Center, San Francisco, CA; Marylin Dodd, RN, PhD, University of California, San Francisco, San Francisco, CA; Theresa Koetters, RN, MS, University of California, San Francisco, San Francisco, CA; Laura Dunn, MD, University of California, San Francisco, San Francisco, CA; Steven Paul, PhD, University of California, San Francisco, San Francisco, CA; and Christine Miaskowski, RN, PhD, University of California, San Francisco, San Francisco, CA

Sleep disturbance, depression, and anxiety are frequently reported problems in oncology patients. However, no studies were found that evaluated how depression or anxiety or the co-occurrence of these two symptoms influenced sleep quality in oncology patients prior to RT.

In a sample of patients about to undergo RT for breast, brain, lung or prostate cancer, the study purposes were: to describe the percentage of patients in one of four mood status groups (i.e., neither depression or anxiety, only depression, only anxiety, or both depression and anxiety) and to evaluate for differences in sleep quality among these four mood status groups.

The UCSF Symptom Management Model served as the theoretical framework.

Prior to RT, 179 patients completed a demographic questionnaire, the Center for Epidemiologic Studies-Depression Scale (CES-D), the Speilberger State Anxiety Inventory (STAI-S), and the Pittsburgh Sleep Quality Index (PSQI). Differences in demographic and clinical characteristics among the four mood status groups were evaluated using one-way analyses of variance or Chi Square analyses. Cut-points for the CES-D and the STAI-S were used to determine the mood status groups.

A majority of the sample was male (71.8%), white (52.5%), married/partnered (56.8%) with a mean age of 60.1 years. A main effect of mood status group was found for the global PSQI scores. The neither depression or anxiety group had the lowest global PSQI scores among the four mood groups. The only anxiety group's PSQI scores were lower than the both depression and anxiety group, but higher than the neither depression or anxiety group. These findings demonstrate that those without mood disturbances reported less sleep disturbance than those with mood disturbance, especially those with both depression and anxiety. The study findings suggest that oncology patients experience sleep disturbances prior to RT, especially those with mood disturbances.

Funding Source: National Institute of Nursing Research (NR04835)

BJ

SYMPTOM TRAJECTORIES IN POST-TREATMENT SURVIVORS: A LATENT GROWTH CURVE ANALYSIS.

Jeannine Brant, APRN, AOCN®, St. Vincent Healthcare, Billings, MT; Susan Beck, PhD, RN, AOCN®, FAAN, University of Utah, Salt Lake City, UT; William Dudley, PhD, University of North Carolina,

Greensboro, NC; Ginette Pepper, PhD, RN, FAAN, University of Utah, Salt Lake City, UT; Patrick Cobb, MD, Hematology Oncology Centers of the Northern Rockies, Billings, MT; and Christine Miaskowski, PhD, RN, FAAN, University of California, San Francisco, San Francisco, CA

The transition from cancer treatment to follow-up is an uncertain time for cancer survivors. During the post-treatment phase, survivors may continue to experience physical and psychological sequelae related to the disease or its treatment.

The objectives of this study were to: 1) examine post-chemotherapy symptom trajectories in post-treatment survivors, and 2) determine whether individual characteristics predicted symptom trajectories.

The Symptoms Experience Model, that takes into account the global experience of multiple cancer-related symptoms, served as the guiding framework for this study.

This retrospective, longitudinal analysis included 100 patients who recently completed chemotherapy for lung cancer, colorectal cancer, or lymphoma. Symptoms were rated on an electronic patient care monitor system in an outpatient cancer care clinic. Latent growth curve analyses were conducted to examine the trajectories of pain, fatigue, sleep disturbance, distress, and depression in post-treatment cancer survivors. Data were modeled for 16 months post initial chemotherapy to detect trajectories of growth and predictors for the five symptoms.

Symptoms at the first follow-up visit were significantly different than zero ($p<0.0001$). Growth curves over the 16 month trajectory were not significantly different from zero, indicating that for the sample, symptoms persisted. The depression trajectory (quadratic) was predicted by gender. Males showed a convex curvilinear growth trajectory for depression whereas females showed a concave curvilinear trajectory ($p<0.05$). Higher distress was predicted by a younger age ($p<0.05$) at the first follow-up visit (2 to 6 weeks). More pain was experienced in younger patients, those with lung cancer, those with stage III and IV disease, and nonCaucasian patients at the first follow-up visit ($p<0.05$). NonCaucasian patients also experienced more depression, sleep disturbance, and pain throughout the 16 month post-treatment trajectory ($p<0.05$).

This study demonstrated that psychological and physical symptoms can persist in post-treatment cancer survivors. It appears that some individual characteristics place patients at risk for more severe post-treatment symptoms, but further studies are warranted.

Funding Sources: American Cancer Society, NCI Educational Grant (Kathy Mooney, PI)

BK

PROPHYLACTIC SKIN CARE FOR PATIENTS UNDERGOING RADIATION THERAPY.

Tracy Gosselin, RN, MSN, AOCN®, Duke University Hospital, Durham, NC; and Susan Schneider, RN, PhD, AOCN®, Duke University School of Nursing, Durham, NC

Breast cancer is commonly treated with radiation therapy (RT). Standards of care and product selection related to managing an acute skin reaction vary based on practice setting, clinician and patient preference. A variety of products are available, yet research regarding best supportive product is mixed and/or lacking.

The purpose of this study was to evaluate three skin care products that may decrease the incidence and/or severity of acute skin reactions in women undergoing RT for breast cancer.

The framework used to guide this study was the physiologic model of wound healing. Acute skin reactions arise from the interaction of ionizing radiation on the normal epithelium. Protective skin care products are thought to protect the epidermis providing hydration and keeping the skin supple.

A double-blinded, placebo controlled study was conducted to evaluate three products against a placebo in managing an acute skin reaction. Women were randomized to one of four study arms and were evaluated weekly by the RT clinic nurses using the Radiation Therapy Oncology Group (RTOG) skin toxicity grading criteria as they were blinded to study product. Data were analyzed using descriptive and inferential statistics.

208 women with breast cancer completed the study. None of the products were statistically better than the placebo in preventing skin reactions. Significance tests were based on changes to the likelihood-ratio chi-square across nested models, and indicated that increases in skin reaction over time did not vary with treatment group. This was the case for both the linear ($p = 0.16$) and non-linear ($p = 0.94$) effects of time, and for both time components tested together ($p= 0.41$). Patient reported satisfaction with all three products was higher than placebo ($p < 0.01$) with a preference for Biafine®. Ease of product application showed a trend ($p = 0.08$) toward Biafine® being the easiest to apply.

The development of guidelines to support patient care is encouraged. Results from this study support the idea that patient's prefer to do "something rather than nothing", although these findings do not demonstrate improved clinical outcomes with the use of skin care products that can be expensive.

Funding Sources: ONS Foundation and Aventis Pharmaceuticals

BL

STRESS, SYMPTOMS, SYMPTOM DISTRESS, AND SYMPTOM SELF-MANAGEMENT IN LOCALIZED PROSTATE CANCER.

Chao-Pin Hsiao, RN, University of Arizona, Tucson, AZ; Ida M. (Ki) Moore, DNS, RN, College of Nursing, University of Arizona, Tucson, AZ; Kathleen Insel, PhD, RN, College of Nursing, University of Arizona, Tucson, AZ; and Carrie Merkle, PhD, RN, College of Nursing, University of Arizona, Tucson, AZ

The findings can help health care providers develop comprehensive symptom self-management strategies and enhance the effectiveness of interventions for symptom self-management among men with localized prostate cancer.

The purpose of the study was to investigate the relationships among stress, symptoms, symptom distress, and symptom self-management in men with localized prostate cancer following radical prostatectomy or radiation therapy.

Prostate cancer is the most commonly diagnosed and second leading cause of death in American men. Patients with localized prostate cancer may experience unique and multidimensional distressing symptoms that occur from diagnosis through treatment, and thereafter. These symptoms are in the form of physical and psychological sequelae associated with the disease and treatments. Many studies have focused on health related quality of life, but no one has investigated the associations among stress, symptoms and symptom distress, and symptom self-management in localized prostate cancer.

This study was a prospective, descriptive cross-sectional design.

The sample consisted of 53 men with localized prostate cancer. Eight saliva samples and 3 questionnaires (Perceived Stress Scale, the Symptom Indexes, and the Symptom Self-Management Strategy and Effectiveness) were obtained from each participant between 1 and 3 months following the first treatment for prostate cancer. Three cortisol circadian rhythms were identified: typical negative circadian rhythm, non-typical flat circadian rhythm, and inconsistent circadian rhythm. The majority of the sample had a typical, negative and consistent circadian rhythm. Salivary cortisol AUCG and AUCI were positively associated with perceived stress. The severity of symptom was positively correlated with symptom distress. The prostatectomy group had significantly higher scores for urinary symptoms and sexual functioning; whereas, the radiation therapy group had a significantly higher score in bowel symptoms. There were no significant differences in salivary cortisol and perceived stress between the prostatectomy and radiation therapy groups. The frequency and percentage of the symptom

self-management strategies and the perceived effectiveness of the strategies were reported by three symptoms (urinary, bowel and sexual functioning). Symptom self-management strategies were positively correlated with symptom self-management effectiveness. Salivary cortisol AUCG and symptom distress were statistically significant predictors of the frequency of self-reported use of self-management strategies.

Funding Sources: 2006 Beta Mu Chapter Doctoral Student Research Grant and the Young Investigator Award funds from Yuma Friends of Arizona Health Science Center

Podium 11: Evidence-Based Practice

BM

A DESCRIPTION OF THE PATTERN OF FURTHER DISSEMINATION (AS PUBLISHED MANUSCRIPTS) OF SCIENTIFIC EVIDENCE INITIALLY PRESENTED AT THE NATIONAL CONFERENCE OF CANCER NURSING RESEARCH. Marsha Fonteyn, RN, PhD, OCN®, Dana-Farber Cancer Institute, Boston, MA; Patrizia Lannen, MS, Dana-Farber Cancer Institute, Boston, MA; and Donna Berry, PhD, RN, AOCN®, FAAN, Dana-Farber Cancer Institute, Boston, MA

Presentations provide an excellent venue for the initial dissemination of scientific evidence, but unless this information is subsequently published in professional journals, it has limited utility for guiding clinical practice. This issue has been reported in the biomedical literature but not about nursing research conference presentations.

The purpose of this project was to determine the rate at which presentations at the National Conference on Cancer Nursing Research were published in full to describe the patten of full-text publication, to provide a beginning description of this issue in nursing with implications for evidence-based practice.

and CINAL were searched for articles reporting the research presented at the 2003 and 2005 conferences, using the names of presentation authors and key words from the titles. Two independent raters identified and confirmed the hits of articles found which were categorized in an Excel database by: publication date, journal, focus of the journal, peer-review status, whether interdisciplinary, and impact factor (if available).

Approximately 50% of 2003 conference presentations and 40% of the the 2005 were found to be published in a professional journal by June 2008. The mean time to publication for the 2003 presentations was 23.4 months, and 11.7 months for 2005 presentations although there was considerable variation in the range of time.

Determining the proportion of scientific evidence from cancer nursing research initially presented at conferences that later are published in full is important for the translation of scientific evidence into practice. Our findings provide a beginning description of the nature and extent of this problem in oncology nursing research.

BN

EVIDENCE-BASED ASSESSMENT OF AMBULATORY ONCOLOGY PATIENT INTENSITY AND STAFFING NEEDS. Shannon Phillips, MS, RN, AOCNS®, University of Rochester, James P. Wilmot Cancer Center, Rochester, NY; and Catherine Lyons, RN, MS, NEA-BC, FNAP, University of Rochester, James P. Wilmot Cancer Center, Rochester, NY

Determining patient intensity and staffing levels is essential for safe and effective nursing care and administrative planning.

Purpose/Background/Rationale: Ambulatory oncology patient intensity and staffing in an adult outpatient infusion center were measured and compared to data from the same setting 2 years prior to determine required nurse staffing levels. The Ambulatory Intensity System, which was developed at NIH and validated in research and standard therapy settings, was used.

Interventions: Data were collected for a 3 week period yielding a sample of 1024 patient care interactions. RNs completed a service delivery tool for each patient that included the assignment of an intensity level (1-6) and documentation of additional activities. Data also were collected on nurse staffing levels.

Interpretation: Findings demonstrated that staffing levels were consistently below benchmark recommendations. The total average variance in full time equivalent (FTE) direct care providers was -3.72 per day (range -0.25 to -8.86). During the same period, the unit vacancy was 3.84 FTEs; therefore focus was directed at filling vacancies. Average FTE variance differed by day of week, with Tuesday having the highest average negative variance (-5.43). Statistically significant ($p<0.001$) differences were found in percentage of tools completed by day, with Monday having the highest percent (20.9%) and Tuesday having the lowest (18.75%). A greater number of high intensity encounters (9.6% vs. 3.6%) and fewer low intensity encounters (15.2 vs. 4.3) were evident in comparison to prior data. Additional activities that contributed to nursing time included time spent on teaching, providing supportive care, coordinating with provider/pharmacy, and dealing with poor venous access. A significant ($p=<0.001$) difference was seen between senior staff and new staff in assignment by intensity level.

Discussion: The project demonstrated the need to recruit nursing staff to fill vacant positions to assure patient needs were met and identified areas of improvement for the unit management. Findings suggest that infusion centers can utilize the Ambulatory Intensity System to make evidence based decisions about staffing and patient care assignments.

BO

RELATIONSHIP OF CANCER-RELATED FATIGUE KNOWLEDGE AND USE EVIDENCE WITH SELF-REPORTED BARRIERS TO RESEARCH USE AMONG ONS RNS. Lawrence Wilcox, FNP-BC, DNS(c), NYS Department of Corrections, Brocton, NY; Jean Brown, FAAN, PhD, University at Buffalo, State University of New York, Buffalo, NY; Bill Wu, PhD, University at Buffalo, State University of New York, Buffalo, NY; and Kay Sackett, EdD, Wake Forest University, Winston-Salem, NC

ONS, through several projects such as the FIRE project and Putting Evidence into Practice cards (PEP) disseminated research evidence to oncology nurses. These efforts sought to improve the translation of nursing research into oncology clinical practice and overcome some of the barriers that have been identified.

There is little evidence demonstrating the effectiveness of educational interventions to improve research use. Barriers to the use of research findings in clinical practice continue to be reported in the research literature. This study 1) discusses ONS RN's knowledge and use of specific cancer-related fatigue (CRF) research evidence and 2) determines self-reported barriers to research use.

A nationwide random sample of 4500 ONS RN's was mailed surveys including a CRF Symptom Management Knowledge and Use instrument and the Barriers Scale. Both instruments have established reliability and validity. A response rate of 14% yielded an n=632. Regressing the Knowledge and Use scores onto Barriers instrument subscale scores demonstrates that there is very little correlation between perceptions of barriers and knowledge and use of CRF symptom management interventions within the study population (R-squared =.019). The top three ranked barriers identified by the participants included 1) There is insufficient time on the job to implement new ideas (16.3%), 2) The nurse does not have time to read the research (7.8%), and 3) Administration will not allow implementation (5.3%).

Results of this study demonstrate that there was little correlation of nurses' actual knowledge or use of CRF interventions and their perceptions of barriers to research use. CRF knowledge and use scores were 58% and 75% correct respectively. The barriers were consistent with previous research. Future research should focus determining knowledge levels of nurses and on interventions that are effective in translating research into clinical practice rather than focusing on perceived barriers of using evidence in practice.

Funding Sources: ONS Foundation Small Research Grant through an unrestricted grant from Genentech BioOncology, the Mark Diamond Research Fund, University at Buffalo, and Sigma Theta Tau International, Gamma Kappa Chapter

BP

HOW TO MEASURE INSTITUTIONAL CHANGE: AN ANALYSIS OF GOAL ACHIEVEMENT.

Denice Economou, RN, MN, AOCN®, City of Hope, Duarte, CA; Marcia Grant, DNSc, FAAN, City of Hope, Duarte, CA; Betty Ferrell, PhD, FAAN, City of Hope, Duarte, CA; and Smita Bhatia, MD, MPH, City of Hope, Duarte, CA

To explore an approach for evaluating the effect of an educational program focused on changing practice in participating institutions.

Dissemination of research to change clinical practice presents the issue of measuring changes across a variety of institutions. The evaluation approach implemented involved follow up of 3 institutional-specific goals identified during the course by each participating team. Follow-up involved telephone interviews of goal achievements. Analysis of these data involved a content analysis approach to categorizing the goals and an estimate of % of goal achievement by each team at 6, 12 and 18 months post course. In an effort to categorize goals, the framework of Donabedian on Structure, Process and Outcome was implemented. Validation of classification was done by 2 coders classifying separately and then discussing and resolving any discrepancies. Percentage of goal achievement is individually rated by each team. Self rating of % goal achievement may be inconsistent across institutions.

The Institute of Medicine report, From Cancer Patient to Cancer Survivor: Lost in Transition defined lack of survivorship knowledge as a deficit in survivorship care in the United States. Providing a comprehensive curriculum to educate health care professionals on how to meet cancer survivors' needs and to evaluate the impact the training had on changes in the participating institutions was the goal of the program. Two-person multidiscipline teams were competitively chosen to attend the program. Using goal-directed activities to identify individual institutions' plans for change in survivorship care provided qualitative data used for goal achievement.

Using qualitative data analysis approaches can reveal valuable evaluation data following educational courses.

Qualitative approaches to goal analysis have resulted in valuable descriptions by institutions of their activities. Data can reveal most common and least common areas of institutional change. Data from percent of goal achievement may be less valuable.

Funding Source: NCI R25 CA 107109 Survivorship Education for Quality Cancer Care

Podium Session 12: Exercise

BQ

COMPARING AEROBIC TO RESISTANCE EXERCISE IN RECOVERY FROM CANCER.

Stacey Young-McCaughan, RN, PhD, AOCN®, University of Texas Health Science Center at San Antonio, San Antonio, TX; Sonya M. Arzola, MS, Geneva Foundation, Tacoma, WA; Sandra M. Montes, RN, BS, Geneva Foundation, Tacoma, WA; Sandra E. Terrazzino, RN, MSN, FNP, Brooke Army Medical Center, San Antonio, TX; Christopher B. Jones, MD, CMC-NorthEast Hospital, Concord, NC; Eric A. Shry, MD, Brooke Army Medical Center, San Antonio, TX; and Stacey A. Dramiga, MA, Brooke Army Medical Center, San Antonio, TX

Research investigating exercise rehabilitation in patients with cancer has demonstrated dramatic improvements in physiological and psychological functioning. However, it is not known if the type of exercise makes a difference in the health benefits realized.

The purpose of this study was to compare the health outcomes of a 12-week exercise program focused on aerobic training (using a treadmill) to a 12-week exercise program focused on resistance training (using Thera-Bands) in sedentary patients within 6 months of completing treatment for cancer.

Roy Adaptation Model. Exercise was tested as an intervention to facilitate positive adaptation.

This was an experimental, repeated-measures study. Twenty-three participants were recruited into the study, 10 into the aerobic exercise group and 13 into the resistance exercise group. Subjects met two days each week for 12 weeks and exercised an additional three to five days each week at home. Key exercise variables were change in exercise tolerance (as measured by predicted VO2max & 1-repetition maximum), activity & rest patterns (as measured with Pittsburg Sleep Quality Index & the General Sleep Disturbance Scale), fatigue (as measured with the Piper Fatigue Scale), quality of life (as measured with the Functional Assessment of Cancer Therapy – General), and health status (as measured with the Medial Outcomes Study 36-Item Short Form Health Survey), all valid and reliable measures. Descriptive statistics and repeated-measures analysis of covariance were used to analyze the data.

Participants were predominantly Caucasian, married, and well-educated. Slightly more than half of the participants were female (n = 13, 57%). Ages of participants ranged from 30 to 65 (mean = 54, SD = 9.4). Participants had a wide range of cancer diagnoses; more than half had later stage III or IV disease (n = 13, 57%). Significant improvements over time ($p < .05$) were found in all outcome measures. However, no differences between the exercise groups were found. This research continues to support exercise as an intervention to improve health of patients with cancer. It does not appear that the type of exercise determines the improvements realized.

Funding Source: Department of Defense Uniformed Services University of the Health Sciences TriService Nursing Research Program

BR

EXERCISE ADHERENCE AND CONTAMINATION IN A RANDOMIZED CONTROLLED TRIAL OF HOME-BASED WALKING EXERCISE PROGRAM AMONG PATIENTS UNDERGOING ACTIVE CANCER TREATMENT.

Jingjing Shang, RN, OCN®, Johns Hopkins University School of Nursing, Baltimore, MD; Jennifer Wenzel, RN, PhD, CCM, Johns Hopkins University School of Nursing, Baltimore, MD; Jerilyn Allen, RN, PhD, Johns Hopkins University School of Nursing, Baltimore, MD; and Kathleen Griffith, RN, PhD, Johns Hopkins University School of Nursing, Baltimore, MD

Significance of The Study: Poor exercise adherence in experimental groups and/or high exercise contamination in control groups has been reported to confound randomized controlled trial (RCT) results. Little research has explored adherence/contamination and effect on intervention outcome among patients undergoing active cancer treatment.

The purpose of this secondary analysis of data was 1) to determine adherence and contamination rates in a RCT of home-based walking program among patients on active cancer treatment; 2) to identify predictors of exercise adherence/contamination.

A literature-based, self-developed conceptual model, in which factors related to exercise adherence/contamination are grouped as demographic, medical & physiologic factors, was used to guide the analysis.

Patients scheduled for chemotherapy or radiation therapy were randomized to usual care (UC) or an exercise program (EX) throughout cancer treatment. The intervention was a brisk, incremental 20-30 minute walk, 5-6 times/week. Subjects in both groups completed a daily activity log measuring exercise activity level and time. Exercise adherence (or contamination) was determined when a subject engaged in more than 60 minute of aerobic activities in 3 session/week for more than 67% of the total prescribed week. Descriptive statistics identified exercise

adherence and contamination rates. Hierarchical multiple regression analysis identified predictors of exercise adherence/contamination.

126 patients completed the study, (EX=68, UC=58). Mean (SD) age of patients was 60.2 (10.6) years. Most patients were diagnosed with prostate (55.6%) and breast (32.5%) cancer. Adherence was 69% in the exercise group, and contamination was 50% in the control group. Marital status was positively related to exercise adherence in the exercise group ($p < 0.05$), and educational level was positively associated with exercise contamination in the control group ($p < 0.05$). These results suggest that patients with family support are more likely to adhere to exercise prescription, while well-educated patients in the control group are likely to exercise, which contaminates results. Future CRT might stratify subjects based on their marital status and educational levels.

Funding Sources: National Cancer Institute/National Institute of Nursing Research R01 NRO 4991; Center for Collaborative Intervention Research NINR p30 NRO8995

BS

WOMEN'S EXPERIENCES WITH AND PREFERENCES FOR EXERCISE DURING BREAST CANCER TREATMENT.

Lisa Bernardo, PhD, MPH, RN, HFI, University of Pittsburgh School of Nursing, Pittsburgh, PA; Kristie Abt, PhD, HFI, University of Pittsburgh Department of Health and Physical Activity, Pittsburgh, PA; Catherine Bender, PhD, RN, University of Pittsburgh School of Nursing, Pittsburgh, PA; and Dianxu Ren, PhD, University of Pittsburgh School of Nursing, Pittsburgh, PA

Oncology nurses can use this evidence to help women with breast cancer select types of exercise that are best for them.

Current evidence confirms the physical and emotional benefits of exercise and physical activity during treatment for breast cancer. The purpose of this study was to determine the exercise preferences and experiences of women during their treatment for early stage breast cancer. The research questions were: What are the exercises undertaken by women during breast cancer treatment?; What are women's preferences for exercise during breast cancer treatment?; and Are there relationships among exercise, fatigue and perceived cognitive functioning?

Bandura's Self-Efficacy model provided the theoretical framework.

This quasi-experimental study was implemented via an online survey. The sample consisted of 160 women who completed treatment for early stage breast cancer in the previous year. The researcher-developed survey was sent by a national survey group to their eligible subscribers. This one-time, online survey included forced-choice and open-ended questions about exercise participation; fatigue; and cognitive functioning. Subject participation involved approximately 15 minutes to complete the survey.

Findings: Walking (indoor, outdoor, treadmill) was the most frequently reported (n= 84, 52%) and preferred (n=94, 59%) exercise. Almost all types of exercises were performed 2-3 times a week. The amount of time for each exercise session was less than 60 minutes. Women reported that exercise did not help to reduce fatigue (n=87, 57%) or improve perceived cognitive functioning (n=84, 57%). No relationship was found between the type of exercise and fatigue reduction. Participation in yoga appeared to improve cognitive functioning ($X2=4.86$, $p=0.02$).

Implications: Less than half of a national sample reported not engaging in exercise on a regular basis during treatment for breast cancer and thus, did not meet national guidelines for daily physical activity. The dose of exercise may not be high enough to gain the desired effects of fatigue reduction and improved cognitive functioning. Knowing women's experiences with and preferences for exercise during treatment will permit tailoring of such programming to best meet their needs.

Funding Source: PA State Nurses Association District 6

BT

ATTRITION AND ADHERENCE TO EXERCISE IN STUDIES INVOLVING PEOPLE WITH CANCER.

Eileen Hacker, PhD, APN, AOCN®, University of Illinois at Chicago, Chicago, IL

Exercise intervention studies are labor-, cost-, and time-intensive. Reducing patient attrition and maintaining adherence to exercise interventions are significant issues facing researchers. The purpose of this research issues paper is to examine exercise intervention studies involving people with cancer for patient attrition and adherence to exercise interventions.

Most studies employed an aerobic exercise program. Approximately half of the exercise interventions were supervised and the other half unsupervised. Overall patient retention in the studies was surprisingly high (86.6%). Major reasons for attrition included changes in health status, issues related to the research protocol, personal issues with subjects, death, issues related to the exercise intervention, and loss to follow-up or no reason provided. Supervised exercise programs rarely published exercise adherence information. Unsupervised exercise program relied mainly on self-report to document adherence.

Exercise has been identified as an effective intervention for a variety of physiological, psychological, and social variables. Researchers interested in designing studies involving people with cancer face unique challenges associated with patient attrition and adherence to exercise interventions. To clearly delineate the scope of the problem, an in-depth analysis of prospective exercise intervention studies over a 20 year period was conducted. The evaluation criteria included: (1) The type of exercise intervention; (2) The amount of supervision required to implement the exercise intervention; (3) Patient attrition rates and reasons for attrition; and, (4) Adherence to supervised, unsupervised or combination programs.

As exercise research becomes more sophisticated, researchers need to include information regarding patient attrition as perceived burden may influence desire and/or willingness to participate in exercise studies. Including objective measures of adherence may help supplement self-report data and improve the quality of data.

Patient attrition from exercise studies involving people with cancer is relatively low, although there is wide variation. Little information regarding adherence to supervised exercise interventions is provided. Collecting adherence data in unsupervised exercise studies proves to be more difficult, given the potential problems with self-report data.

Funding Sources: National Institutes of Health, National Institute of Nursing Research

Podium Session 13: Lung Cancer

BU

REASSIGNING THE BLAME AND ERASING THE STIGMA OF LUNG CANCER.

Janine Cataldo, PhD, RN, University of California, San Francisco, San Francisco, CA

The interface of the stigma of both cancer and smoking has impacted lung cancer patients (smokers and non-smokers alike). The stigma attached to lung cancer can have serious consequences and accounts for significant differences in the impact of the illness. Patients with lung cancer perceive that they are stigmatized because others associate their disease with smoking. The denormalization of tobacco has been effective in decreasing smoking prevalence. However, the consequence of denormalization is that, smokers already marginalized, have become pariahs. Myths that are often associated with older smokers contribute to stigma and blame. Stigma and blame have been associated with anxiety, depression, disability, and non-adherence to treatment. There are no previous studies that investigate the source of the myths that are the foundation of lung cancer stigma.

To investigate the role of the tobacco industry in targeting and creating myths about older smokers

Utilized a hermeneutic interpretive approach to develop a case study.

Archival searches of electronic archives of internal tobacco company documents using a snowball sampling approach. Analysis utilizing iterative and comparative review of documents, classification by themes, and a hermeneutic interpretive approach to develop a case study.

Based on extensive marketing research, tobacco companies aggressively targeted older smokers and attempted to prevent them from quitting. The tobacco industry utilized strategies such as sponsorship of supposedly independent scientific research, ghost writing "scientific literature" and widely publicizing obscure "smoker tales", to undermine geriatric science and promulgate myths about the consequences of smoking and cessation for older adults. The myths included: It's their choice – they would have quit if they wanted to; They like low-tar cigarettes because it is a healthier choice and helps them quit; Smoking cessation can do more harm than good; and Smoking is their last joy in life. : Educating older smokers about the tobacco industry's influence on smoking behaviors may impact self-blame, a documented barrier to cessation. Informing providers about industry influence may decrease the tendency to "blame the victim", reduce the stigma of both smoking and lung cancer and increase the rate of tobacco addiction treatment for older adults.

Funding Sources: California Tobacco Related Disease Research Program grant no. 16RT-0149; Center for Tobacco Control Research and Education Fellowship (NCI grant no. CA-113710); and National Cancer Institute grant no. CA-109153

BV

SMOKING HISTORY, DRUG TOXICITY, AND SURVIVAL IN NON-SMALL CELL LUNG CANCER (NSCLC) PATIENTS RECEIVING EPIDERMAL GROWTH FACTOR RECEPTOR TYROSINE KINASE INHIBITOR (EGFR-TKI) DRUGS.

Mary Cooley, PhD, RN, Dana-Farber Cancer Institute, Boston, MA; David Jackman, MD, Dana-Farber Cancer Institute, Boston, MA; Karen Emmons, PhD, Dana-Farber Cancer Institute, Boston, MA; Hailun Li, MS, Dana-Farber Cancer Institute, Boston, MA; David Christiani, MD, Massachusetts General Hospital, Boston, MA; and Bruce Johnson, MD, Dana-Farber Cancer Institute, Boston, MA

An association has been identified between response to EGFR-TKIs and absence of smoking history. Continued smoking may have detrimental effects on the effectiveness of targeted agents through mechanisms such as an interaction between nicotine and the metabolism of targeted agents. Further studies are needed that examine the relationship between smoking history, cancer treatments, and clinical outcomes.

This study aimed to examine the relationship between smoking history at diagnosis, drug toxicity (diarrhea, nausea/vomiting, rash, shortness of breath) and length of survival in patients with NSCLC treated with EGFR-TKIs and identify factors (gender, race, histology, smoking history, and presence of rash) associated with survival among former smokers.

The biobehavioral model of nicotine addiction was used to guide this study

Data from Dana-Farber/Harvard Cancer Center Thoracic Oncology Program's clinical research information system was used. A self-report tobacco questionnaire and chart review was used to collect patient data. Toxicities were graded by the Common Toxicity Criteria, the widely accepted standard for grading drug toxicities during clinical trials. Survival information was obtained from medical records and the social security death index. The primary endpoints were toxicity and survival. Survival was measured from the first day of treatment with an EGFR-TKI. A stratified-log-rank-test, fishers-exact-test, and cox-proportional-hazards-models were used for analyses. One-hundred-eighty-one patients who were treated with EGFR-TKI drugs were eligible for this study.

During the first treatment, never smokers had the highest prevalence of rash followed by former and current smokers, and least shortness of breath. Factors associated with shorter survival among former smokers were number of cigarettes smoked per day and male gender. Presence of rash was associated with longer survival. Median survival was 13.9-months for never, 6-months for former, and 4.9-months for current smokers. In a post-hoc analyses, current smokers achieved a median overall survival of 4.9 as compared to 10.6 for former and 19.8-months for never smokers with a first-line EGFR-TKI. These findings suggest that smoking history influences outcomes associated with cancer treatment. Oncology nurses can play an important role in the assessment and treatment of tobacco dependence especially in patients with smoking-related malignancies undergoing cancer treatment.

Funding Sources: National Cancer Institute 1 K07 CA92696-02 and James B. Gillen Thoracic Oncology Research Fund, Dana-Farber Cancer Institute

BW

DEATH CONCERNS IN INDIVIDUALS NEWLY DIAGNOSED WITH LUNG CANCER.

Rebecca Lehto, PhD, RN, OCN®, Michigan State University, East Lansing, MI

Lung cancer is the leading cause of cancer death and the second most common cancer among men and women in the US. Death concerns among newly diagnosed lung cancer patients are not well documented. Unresolved death concerns may plague individuals following treatment and potentially impact long-term adaptation.

The study's purpose was to explicate salience of death-related concerns in individuals newly diagnosed with lung cancer.

The study used cognitive map theory. Cognitive maps are mental structures that provide frameworks for how new information is perceived, interpreted, and for how behaviors are explained.

A descriptive cross-sectional design was used. The sample consisted of 73 individuals (52 males, 21 females), mean age 65 + 9, newly diagnosed with non-small cell lung cancer. Most had early stage disease(90%) and were preparing for curative resection(71%). Kaplan's Conceptual Cognitive Map(3CM) was used. The 3CM involved having participants reflect on their illness and record important thoughts. Items were coded positive(+) or negative(-) for affect, similar items were grouped, and contents arranged into a map-like display. Participants rated contents for worry (1=not worrisome to 5=extremely worrisome). Descriptives, content, frequency, and t-test analyses were used.

Death contents were identified in 39(53.4%) participants. Individuals with death contents had increased map contents($t = -4.64$, $df = 71$, $p<.005$) and negatively-coded contents($t = -3.81$, $df = 71$, $p<.005$). Seven content domains were identified: death acceptance; behavioral preparation; psychological preparation; time left to live/loss; cancer death experiences; death impact on loved ones; and post-death. Death acceptance contents were reflective, were comparatively coded positive, and were less associated with worry. Similarly, some behavioral preparation contents (e.g.,funeral planning), were coded positive suggesting peace of mind with readiness. Contents in the psychological preparation, time left, death impact, and cancer death experience categories were coded negative. Findings demonstrate that death concerns are varied, generally evoke negative affect, and are of significant importance to individuals facing lung cancer. Individuals may experience difficulties concentrating on treatment information if focused on death-related concepts. Findings emphasize need for providers to become comfortable in assessing and discussing death concerns during early treatment.

Funding Sources: American Nurses Foundation; and NINR, 1 F31 NR07695-01A1; T32 NR0704

BX

DO NURSING TEXTBOOKS PROVIDE ADEQUATE INFORMATION FOR TEACHING TOBACCO CESSATION INTERVENTIONS?

Marjorie Wells, RN, PhD, FNP, School of Nursing, University of California, Los Angeles, Los Angeles, CA; Stella Aguinaga Bialous, RN, MScN, DrPH, FAAN, Tobacco

Policy International, San Francisco, CA; and Linda Sarna, RN, DNSc, FAAN, School of Nursing, University of California, Los Angeles, Los Angeles, CA

Promoting smoking cessation is an important part of oncology nursing practice. Tobacco use causes 30% of cancer deaths and those who continue to smoke after diagnosis have shorter survival and more treatment side effects.

Although nurses can provide effective tobacco cessation interventions, numerous studies have noted that lack of training and skills is a major barrier in clinical practice. Less than half of US nursing schools include tobacco cessation content in their curricula; of those, fewer than 3 hours were devoted to cessation instruction during the entire program. The extent and quality of content related to tobacco cessation in nursing textbooks used for training is unknown. The purpose of this analysis was to assess inclusion of tobacco cessation content, according to current recommendations in the US Public Health Service's Treating Tobacco Use and Dependence: Clinical Practice Guideline (Guideline), in popular nursing textbooks.

The evidence-based model for addressing tobacco dependence (i.e. behavioral counseling and pharmacotherapy) using the 5 A's (Ask, Advise, Assess, Assist, Arrange) was the framework used for the content analysis.

Content analysis was used to analyze tobacco cessation content in 15 textbooks commonly used in U.S. undergraduate nursing programs. We examined textbooks for tobacco and smoking-cessation related references, based on the 5 A's, and for inclusion of references to evidence-based practice, specifically the Guideline.

Three texts provided complete information (i.e. mentioned all 5 A's and referenced the Guideline), 4 texts did not mention cessation. Content ranged from 1 to 19 pages (0.12% to 2.23% total pages in text). Most textbooks emphasized Ask and Arrange, with limited other information. Several texts included myths and misconceptions about smoking cessation. Nursing textbooks do not reflect use of the science-based interventions for tobacco cessation. The quality and quantity of content was inadequate to prepare nurses to provide interventions to patients. Nursing textbooks must provide more specific information on how nurses can address tobacco use and offer cessation interventions in order to help prevent tobacco-related cancer and/or enhance length and quality of life in patients with cancer.

Funding Source: Robert Wood Johnson Grant 041056

Podium Session 14: Parents—Pediatric Oncology

BY

FAMILY CAREGIVER QUALITY OF LIFE: THE IMPACT OF DEMANDS OF CAREGIVING, MEDICATION ADMINISTRATION AND STRESS IN A PEDIATRIC ONCOLOGY SETTING.

Michael Mueller, PhD, University of Florida, College of Pharmacy, Gainesville, FL; Carole Kimberlin, PhD, University of Florida, College of Pharmacy, Gainesville, FL; Richard Segal, PhD, University of Florida, College of Pharmacy, Gainesville, FL; David Brushwood, JD, RPh, University of Florida, College of Pharmacy, Gainesville, FL; and John Graham-Pole, MD, Professor Emeritus, University of Florida, College of Medicine, Gainesville, FL

Research in the field of family caregiver quality of life (QOL) is growing but few studies have addressed family caregivers of children with cancer and few have been guided by a theoretical framework.

This research looked to examine what factors may influence QOL of family caregivers of pediatric oncology patients. Specific focus was placed on how demands of caregiving, hassles of patient medication administration and the appraisal of caregiving stress affect the family caregiver's QOL.

The variables tested in the study were driven by a cognitive appraisal model of stress.

Family caregivers filled out questionnaires that included subscales from: 1)the Caregiver Quality of Life Index – Cancer, 2) the Care of My Child With Cancer (demands), 3) the Family Caregiver Medication Administration Hassles Scale (hassles) and 4) the Appraisal of Caregiving Scale (stress). Demographics were also collected on the caregivers, the patients and the patient's disease state.

A 3-step multistage path analysis determined the path coefficients for the final model.

The response rate was 90.91% (50 out of 55 who were told about the study).

The first regression showed that demands and hassles accounted for 51% of the variance in stress. The second regression showed demands and hassles accounted for 47% of the variance in family caregiver QOL. The final regression showed demands, hassles and stress accounted for 71% of the variance in family caregiver QOL with demands and stress each contributing significantly.

The final model was partially mediated. Hassles effect on QOL was fully mediated through stress. Demands had some mediation through stress along with a direct effect on QOL. Stress had a direct effect on QOL.

Hassles have a negative influence on QOL mediated through the caregiver's stress appraisal. Demands of caregiving and stress were both found to have direct negative impacts on QOL. This questionnaire can be used to help health care professionals identify areas of stress impacting the family caregivers. It will allow for focused education or support that may be needed to help the family caregivers reduce their stress and make them an integral part of the patient's health care team.

BZ

REDEFINING PARENTHOOD: SURVIVING THE DEATH OF A CHILD.

Suzanne Nuss, PhD, RN, Nebraska Medical Center, Omaha, NE; and Margaret Wilson, RN, PhD, University of Nebraska Medical Center, Omaha, NE

This study advances the science by filling gaps in the existing pediatric end-of-life literature, by generating grounded theory, and by laying the foundation for future studies. This study also has significant implications for clinicians to improve clinical practice.

The purpose of this grounded theory study was to identify the basic social psychological problem and process experienced by parents of dying children as they communicated during the dying trajectory.

Grounded Theory and Symbolic Interactionism guided this study.

Parents of children who died within 5 years participated in an interview regarding communication with their dying child. Sixteen interviews were conducted (15 mothers and 3 fathers). Interviews were conducted, transcribed verbatim, and analyzed to allow for theoretical sampling. Beginning with line by line coding, the constant comparative method was used to identify patterns in the data and devise progressively more conceptual codes. Data collection continued until data saturation was obtained. Coding, together with memoing and theoretical sampling, was used to identify and describe the core social psychological problem and process. Data analysis was reviewed by two experienced qualitative nurse researchers for validity and reliability.

From diagnosis, the sense of parental self was threatened, which resulted in Parental Vulnerability. Enduring Parental Vulnerability initiated the process of Redefining Parenthood. Five subprocesses occurred prior to the child's death: Protecting from Fears, Protecting Normalcy, Protecting Faith, Experiencing Protection from their Child, and Bookmarking Memories, and five occurred after the child's death: Telling the Story, Making Meaning, Protecting the Child's Memory, Defining a New 'Normal', and Learning to Live with Regret.

Results of this study provide information about the experiences of parents of dying children as they communicated during the dying trajectory, and begin to fill gaps in pediatric end-of-life research.

This grounded theory contributes to the development of the broader theory of parental grief. The findings from this study have research and practice implications. Health care professionals can use the findings to help prepare dying children and their parents.

Funding Sources: Sigma Theta Tau, Gamma Pi Chapter-at-Large and Kate Field Grant-in-Aid Award

CA

QUALITY OF LIFE, SYMPTOMS AND MANAGEMENT OF CHILDREN WITH ADVANCED CANCER.

Lois Van Cleve, RN, PhD, FAAN, Loma Linda University, Loma Linda, CA; Elizabeth Bossert, DNS, RN, Loma Linda Univsersity, School of Nursing, Loma Linda, CA; Marilyn Savedra, DNS, RN, University of California San Francisco, San Francisco, CA; Kathleen Adlard, MSN, RN, Children's Hospital Orange County, Orange, CA; Cynthia Munoz, PhD, Childrens Hospital Los Angeles, Los Angeles, CA; and Marcia Grant, PhD, RN, City of Hope, Duarte, CA

Childhood cancer remains the major cause of death due to disease, ranking second to accidents. Current management includes aggressive therapies such as chemotherapy, radiation and surgery, and focuses on maximizing comfort, managing symptoms and supporting quality of life (QOL). There is minimal research guiding current practice in this area.

This study examined how the QOL of children living with advanced cancer is affected by age, ethnicity, subjective and objective symptoms, and the management strategies used by the child, parent and health care personnel.

The Revised Symptom Management Conceptual Model from the School of Nursing Symptom Management Faculty Group at the University of California San Francisco provided the foundation for this study.

We examined 61 children ages 6 through 17 years, English or Spanish speaking, with either leukemia non-responsive to treatment or relapsed, or Stage IV solid tumor that had recurred or progressed. A mixed method was used to examine the prospective data from three Children's Hospitals and one Oncology Medical Center in Southern CA. Interviews were conducted in hospital, home, or clinic, every two weeks for 5 months or until end of life. Subjective symptoms were measured by the Memorial Symptom Assessment Scale (MSAS), the Body Outline, the Symptom Management Record (SMR), and the Pediatric Quality of Life Inventory (PQOL). Objective data were measured by the Common Toxicity Criteria (CTC). The analysis includes descriptive and inferential statistics, correlations, clusters of symptoms by graphic displays, and factor analysis. The trajectory of the PQOL, symptoms, and management effectiveness are analyzed by growth curves.

Preliminary findings show 36 males and 25 females with 26 age 6-11 and 35 age 12 – 17. There are 19 Caucasian and 30 Latino with 14 Spanish speaking only. Acute Lymphoblastic Leukemia accounted for 27% of the sample followed by 10% acute Myelogenous Leukemia and 10% Neuroblastoma. There are positive relationships between the CTC and the PQOL. The primary pain sites are the head, abdomen, back, thigh and feet. Results will provide empirical data on comfort, symptoms, and QOL to guide evidence-based care to ill children in this most vulnerable time.

Funding Sources: American Cancer Society and the National Institute of Nursing Research (R01NR008934)

CB

CAREGIVERS OF BRAIN TUMOR SURVIVORS: EXPLORING FAMILY MANAGEMENT OF LATE EFFECTS.

Janet Deatrick, PhD, RN, University of Pennsylvania School of Nursing, Philadelphia, PA; Wendy Hobbie, RN, MSN, CRNP, Children's Hospital of Philadelphia, Philadelphia, PA; Sue Ogle, MSN, CRNP, Children's Hospital of Philadelphia, Philadelphia, PA; Kim Mooney-Doyle, RN, MSN, CRNP, CPON®, University of Pennsylvania School of Nursing, Philadelphia, PA; Maureen Reilly, RN, BSN, Children's Hospital of Philadelphia, Philadelphia, PA; and Erin Mullaney, RN, CPON®, Children's Memorial Hospital, Chicago, IL

A gap exists in our understanding of the applicability of family management to families of adolescent and young adult brain tumor survivors

To explore family management of adolescent and young adult brain tumor survivors from the parent's perspective

Family management describes family processes related to the care of a member with a chronic condition. For this study the focus is parental perceptions of caring for their adolescent or young adult survivor and their late effects in terms of child identity, concerns, difficulty, effort, manageability, and (parental) mutuality.

A cross sectional design was used in this single occasion, descriptive qualitative study. A convenience sample included 22 parents (17 mothers and 5 fathers)

of brain tumor survivors (at least 5 years from diagnosis and at least 2 years from the discontinuation of treatment) who reside at least part-time in the same household as the parent noted above and who are between 14-30 years of age. Open-ended interviews guided by the Family Management Measure (FaMM) were used to query parents about how they managed their children's late effects. Transcribed data were entered into a database. The study team analyzed these data using content analysis guided by the family management framework. Descriptive themes regarding how families manage late effects were then identified.

Descriptive themes supported the family management framework: reacquainting themselves with their child and reacquainting the child with himself, family, and outside world after treatment (child identity); uncertain, potentially problematic future (concerns); trying to maintain normalcy despite the condition (difficulty); implications of the condition "then" during treatment and "now" (effort), and balancing protectiveness with independence (parental mutuality). Two contrasting case studies will be used to illustrate these themes. Issues identified in this pilot are critical to understanding family life of the survivor; process of caregiving; and survivor, the caregiver, and the family outcomes. They are incorporated in a large-scale descriptive study of this population currently being conducted by the project team (NIH/NINR [R01 NR009651]).

Funding Sources: ONS Foundation and the American Brain Tumor Foundation

Podium Session 15: Quality of Life

CC

RELATIONSHIP BETWEEN BODY IMAGE AND QUALITY OF LIFE IN MEN WITH PROSTATE CANCER.

Joanne Harrington, PhD, ANP-C, AOCNP®, Phoenix VA Health Care System, Phoenix, AZ

It is estimated that more than 218,000 men will be diagnosed with prostate cancer in 2007. The majority of men diagnosed and treated for prostate cancer survive for many years, ensuring that men with prostate cancer compose a significant percent of the cancer survivor population. Androgen deprivation therapy, a mainstay of therapy for prostate cancer, leads to significant changes in physical appearance due to the castrate levels of testosterone. Although there is evidence of a relationship between body image changes and QOL among patients receiving therapy for other malignancies, there is little research to support such a relationship in prostate cancer survivors.

The purpose of this study was to describe the relationship between changes in body image and quality of life (QOL) among prostate cancer survivors who were prescribed either androgen deprivation therapy (ADT) or were ADT-naïve.

A biobehavioral conceptual model was used.

The study used a non-experimental, descriptive-correlational design. The convenience sample consisted of one hundred and thirty-two men (> age 60) with prostate cancer, recruited from

the oncology and urology out-patient clinics at an urban Veterans Affairs Medical Center. Participants completed two established questionnaires assessing body image change (Body Image Scale [BIS]) and Quality of Life (Quality of Life Index [QLI]). Data was analyzed using a combination of descriptive and inferential statistics.

There were no significant differences in QOL based upon whether ADT or ADT-naïve ($t(130) = 1.523$, $p = .13$). Participants with greater dissatisfaction in body image had less satisfactory quality of life ($r(126) = -.597$, $p = .01$). This relationship was consistent whether Ever-ADT ($r(83) = -.571$, $p=.01$) or ADT-naïve ($r(41) = .620$, $p = .01$). The findings begin to fill the gap in knowledge regarding body image and quality of life among prostate cancer survivors, provide a foundation for future research endeavors, and support the development of evidence-based interventions designed to improve the quality of life among men with prostate cancer.

CD

THE ENABLE II PALLIATIVE CARE INTERVENTION IMPROVES QUALITY OF LIFE, MOOD, AND SURVIVAL OUTCOMES.

Marie Bakitas, DNSCc, ARNP, AOCN®, FAAN, Norris Cotton Cancer Center, Lebanon, NH; Kathleen Doyle Lyons, ScD, Dartmouth College, Department of Psychiatry, Lebanon, NH; Mark Hegel, PhD, Dartmouth College, Department of Psychiatry, Lebanon, NH; Zhongze Li, MS, Norris Cotton Cancer Center, Lebanon, NH; Jay Hull, PhD, Dartmouth College, Hanover, NH; Tor Tosteson, PhD, Norris Cotton Cancer Center, Lebanon, NH; and Tim Ahles, PhD, Memorial Sloan-Kettering Cancer Center, New York, NY

Palliative care should be evidence-based however there are few prospective RCTs of effective palliative care models.

The purpose of this RCT was to evaluate quality of life, mood, symptom intensity and survival in an advanced practice nurse(APN)-led, early identification, phone-based, psycho-educational intervention.

The intervention was based on the WHO continuum of palliative care model used in our prior ENABLE (Educate, Nurture, Advise, Before Life Ends) demonstration project.

In this prospective, longitudinal, randomized, trial, patients were identified and screened by research assistants at lung, gastrointestinal, genitourinary, and breast tumor boards and clinician schedules from November 2003-May 2007. Following informed consent, participants were randomized to the intervention (INV) or usual care (UC). The intervention included 4 weekly educational sessions focused on problem-solving, communication, symptom management and advance care planning and monthly follow up calls. The Functional Assessment of Chronic Illness Therapy-Palliative (FACIT-Pal), Center for Epidemiological Studies-Depression (CES-D), and Edmonton Symptom Assessment Scale (ESAS) were completed at baseline, 1 month and every 3 months until death. Scores were compared using a repeated measure linear mixed model. Survival was determined using Kaplan-Meier analysis. A Cox proportional hazards model estimated the hazard ratio.

322 participants (48% response rate) were randomized to INV or UC (mean age 65, 58% male, 69% married, 99% white, with newly diagnosed advanced gastrointestinal (41%), lung (36%), genitourinary (12%), and breast (10%) cancer. INV subjects experienced higher QOL (FACIT-Pal 7mo $p<0.01$; 10mo $p=0.03$; pre-death $p=0.002$) and mood (CES-D 7mo $p=0.03$; 10mo $p=0.06$; pre-death $p=<0.001$) than UC; however ESAS differed only at 1 mo ($p=0.03$) after baseline. INV mean survival was longer (10.6 mo vs 8mo; $p=0.36$) and the estimated hazard ratio for INV versus UC was 0.71 ($p=0.026$) up to 1 year after enrollment. These findings suggest that an early identification, psycho-educational care coordination model of palliative care may improve both the quality and quantity of life in advanced cancer patients.

Funding Sources: NCI R01CA101704-2; NIH/NINR T32NR008346 Research Training: Self and Family Management

CE

CHARACTERISTICS OF MALE CAREGIVERS OF PATIENTS WITH ADVANCED CANCER.

Helen Foley, RN, MSN, Case Western Reserve University, Cleveland, OH; Barbara Daly, PhD, RN, FAAN, Case Western Reserve University, Cleveland, OH; Sara Douglas, PhD, RN, Case Western Reserve University, Cleveland, OH; and Amy R. Lipson, PhD, Case Western Reserve University, Cleveland, OH

A great deal of research has been done to investigate the effect the caregiving experience has on family members who are providing care to a loved one with cancer. Caregiving is often associated with role tasks of women in today's society. Little attention has been paid to the experiences of male caregivers and thus it is not known whether interventions need to be tailored to meet unique needs of men who have assumed caregiver responsibilities.

Most research on caregiving burdens and benefits has been conducted with predominantly female subjects. The purpose of this study is to examine the characteristics of male caregivers of patients with advanced cancer and compare these to female caregivers.

The conceptual frameworks underlying this study were drawn from Betty Ferrell's quality of life model and the Given's model of caregiver burden.

Newly diagnosed patients with cancer receiving treatment at a Comprehensive Cancer Center and their caregivers were invited to participate in a psychosocial data registry. A sample of 233 caregivers (89male, 144 female) were enrolled. A variety of instruments measuring several dimensions of quality of life were used, as well as the Caregiver Reaction Assessment to measure benefits and burdens. ANOVA and multiple regression were used to test differences and examine associations.

Some differences in demographic characteristics and caregiver outcomes ($p <.10$) between male and female caregivers were found. Men were more likely to be employed, slightly older and more educated than their female counterparts. Men experienced more financial problems associated with the caregiving role, and experienced more disruption in their schedules. Women reported more positive benefits from the caregiving experience. There was no significant difference in mood state, but men scored towards the more negative end in all subscales of the Profile of Mood States, except for fatigue. These findings prompt several questions, including the need to evaluate whether standard tools are adequate for assessing the caregiving experience of men and the extent to which instruments have been normed with male caregivers. It may be reasonable to consider a qualitative exploration to help determine if design of new instruments, and possibly tailored interventions, are warranted.

Funding Sources: N. Berger P-20, CA-103736; Case Presidents Research Initiative Award

CF

THE EFFECTS OF MOOD ON PAIN AND QUALITY OF LIFE IN ONCOLOGY PATIENTS ON REGULARLY SCHEDULED OPIOID ANALGESICS.

Inger Utne, RN, Cand.San., Dipl. EEd., Oslo University College, Oslo, Norway; Christine Miaskowski, RN, PhD, FAAN, San Francisco, CA; Tone Rusten, Oslo, Norway; Kristin Bjordal, Oslo, Norway; and Steven Paul, San Francisco, CA

Mood disturbances and pain are highly prevalent symptoms in patients with advanced cancer. However, little is known about the effects of the co-occurrence of depression and anxiety on pain as well as on oncology patients' quality of life (QOL).

The purpose of the study was to examine differences in pain severity, pain's interference with typical activities, and QOL in oncology patients who were categorized into one of four mood groups (i.e., neither depression nor anxiety (31.6%), only anxiety (12.0%), only depression (12.4%), both anxiety and depression (44.0%)).

McGuire's Multidimensional Model of the Cancer Pain Experience served as the theoretical framework for the study.

A total of 225 adult patients who were receiving regularly scheduled opioid therapy, had a verified cancer diagnosis, and were able to sign the informed consent were recruited for this study. Patients completed the Brief Pain Inventory (BPI), Symptom Severity Checklist, and the European Organization for Research and Treatment of Cancer-QOL Questionnaire-C30. Patients were categorized into the mood status groups based on their responses to the Symptom Severity Checklist. One-way analyses of variance and Chi Square analyses were used to evaluate for differences in demographic, clinical, and outcome variables among the four mood status groups.

Younger patients and women were more likely to be in the both depression and anxiety group. In addition, while only minimal differences were found among the four mood groups on pain intensity scores, significant differences were found in all of the BPI interference items except walking ability. For four of the other six interference items patients in the both depression and anxiety group and the only depression group reported significantly higher interference scores than the neither depression nor anxiety group (all $p < 0.05$). In addition, patients with both mood disorders reported significantly poorer QOL scores. Given the fact that 44.0% of the patients in this study had both anxiety and depression, oncology nurses need to evaluate patients for the co-occurrence of these two symptoms, evaluate its impact on pain management and QOL, and develop appropriate interventions to manage these symptoms.

Funding Sources: Oslo University College, Fulbright Foundation, Norway

Podium Session 16: Biologic Factors/Outcome Measures

CG

BREAST CANCER GROWTH AND METASTASIS IN THE CONTEXT OF DIABETES IN A RAT MODEL. Carrie Merkle, PhD, RN, FAAN, University of Arizona College of Nursing, Tucson, AZ; and David Montgomery, PhD, Southern Arizona VA Health Care System, Tucson, AZ

Epidemiological studies show that diabetes mellitus is an independent risk factor for death from breast cancer.

The mechanism to explain how diabetes increases mortality from breast cancer is unknown. Preliminary work showed that vascular injection of breast cancer cells into type 1 diabetic rats produced larger lung metastases, compared to injection into normoglycemic control rats. The objectives here were to determine if:

1. Type 1 diabetic rats had larger and more numerous lung metastases compared to normoglycemic controls
2. Type 1 diabetic rats had larger tumors following injection of breast cancer cells into the mammary fat pad compared to controls
3. Type 1 diabetic rats had deficiencies in natural killer (NK) cells, responsible for killing MAD106 cells, compared to controls

A conceptual framework based on diabetes-induced vascular injury was constructed to guide relevant studies on breast cancer in rat diabetic models.

Fischer 344 rats were injected either with streptozotocin to induce type 1 diabetes or saline to serve as normoglycemic controls. To test for differences in size/number of metastases, MADB106 rat breast cancer cells known to metastasize to the lungs were injected into tail veins of diabetic and control rats. Fourteen days later, lung metastases were measured and counted. To evaluate tumor growth independent of metastasis, the MADB106 breast cancer cells were injected into the mammary fat pads of diabetic and control rats, then tumor size was determined 14 days later. To test for differences in NK cells, both the numbers of blood NK cells and NK cell killing activity were determined in diabetic and control rats.

Using the Student's t test, the findings showed increases in metastatic tumor size and number in the diabetic rats. No differences occurred in mammary tumor size, NK cell number and NK cell activity. These findings are consistent with diabetes-associated increases in metastasis by mechanisms that cannot be attributed to either increased tumor growth or decreased NK cell numbers and activity. Future studies will test vascular injury as the mechanism for increased metastasis. This work is important to further understand the consequences of diabetes and diabetes/cancer interactions.

Funding Sources: Emmons Award, University of Arizona College of Nursing; ONS Foundation/Bristol-Myers Small Grant

CH

EFFECTS OF EXERCISE VERSUS BISPHOSPHONATES ON BONE MINERAL DENSITY IN BREAST CANCER PATIENTS RECEIVING CHEMOTHERAPY. Karen Swenson, RN, PhD, AOCN®, Park Nicollet Institute, St. Louis Park, MN; Mary Jo Nissen, PhD, MPH, Park Nicollet Institute, St. Louis Park, MN; Alice Shapiro, RD, PhD, Park Nicollet Institute, St. Louis Park, MN; Elsie Anderson, RN, BSE, OCN®, Park Nicollet Institute, St. Louis Park, MN; Tracy Messing, RN, BSE, OCN®, Baylor Research Institute, Fort Worth, TX; John Schousboe, MD, Park Nicollet Health Service, St. Louis Park, MN; and Joseph Leach, MD, Park Nicollet Institute, St. Louis Park, MN

Loss of bone mineral density (BMD) related to treatment is a significant problem for breast cancer survivors because it increases the risk of bone fracture, pain and disability. Interventions to prevent bone loss may include weight-bearing exercise, medications and nutritional supplements.

Breast cancer chemotherapy causes early onset menopause for most women over age 40 and is associated with accelerated bone loss. The primary objective of this study was to compare the effects of a prescribed physical activity (PA) program versus intravenous (IV) zoledronic acid on changes in spine, total hip, femoral neck and total body BMD over 12 months for women ages 40-55 receiving breast cancer chemotherapy.

Social Cognitive Theory was used to develop the PA program for this study, and includes components of outcome expectation and self-efficacy. Outcome expectation influences decisions to adopt exercise, and self-efficacy affects adherence to exercise interventions.

A randomized controlled trial was conducted with 62 breast cancer patients comparing a physical activity program + oral calcium/vitamin D (PA Group) versus IV zoledronic acid + oral calcium/vitamin D (ZO Group.) PA Group participants were enrolled in a home-based exercise program and received motivational counseling, pedometers, and were prescribed 10,000 steps/day. ZO Group participants received zoledronic acid every 3 months for 5 treatments. BMD measurements from a DEXA scan were completed at baseline and 12 months later. Baseline characteristics of ZO and PA Groups were compared using chi-square tests for categorical variables and Student t tests for continuous variables. The Wilcoxon signed-rank test was used to determine whether groups differed significantly on BMD changes from baseline.

BMD significantly decreased in the PA Group but not in the ZO Group. While spine, total hip, and total body BMD increased in the ZO Group by 1.6%, 0.8%, and 0.8%, BMD decreased in the PA Group by 6.0%, 3.4%, and 3.3% respectively (p values < 0.0001 for all comparisons.) Results show that zoledronic acid protected breast cancer patients against bone loss during the initial 12-month treatment period. A home-based PA intervention was less effective in preventing bone loss. Further research is needed to evaluate adherence to the PA intervention, and define the optimal dose, frequency, and timing of bisphosphonate treatment.

Funding Sources: Novartis Oncology and the Park Nicollet Foundation

CI

GENOME WIDE ASSOCIATION STUDY OF WOMEN WITH AND WITHOUT SECONDARY BREAST CANCER AFTER PEDIATRIC HODGKIN LYMPHOMA. Belinda Mandrell, PhD, RN, PNP-BC, St. Jude Children's Research Hospital, Memphis, TN; Melissa Hudson, MD, St. Jude Children's Research Hospital,

Memphis, TN; Geoff Neale, PhD, St. Jude Children's Research Hospital, Memphis, TN; Stanley Pounds, PhD, St. Jude Children's Research Hospital, Memphis, TN; and Pamela Hinds, PhD, St. Jude Children's Research Hospital, Memphis, TN

Women who have been treated for pediatric HL are at an increased risk of secondary breast cancer.

Identification of genetic risk factors associated with secondary breast cancers could facilitate identification of those at greatest risk and permit modification of therapy and heightened surveillance that may reduce cancer-related morbidity and mortality. The purpose of this study was to assess the differences in global gene expression and genotype of women with and without secondary breast cancer after HL for the development of a genetic risk profile.

This study was guided by the Genotype Prediction Model of Secondary Breast Cancer which was derived from clinical experience, empirical data, and a retrospective chart review of women with breast cancer after HL.

This was a descriptive cross-sectional case control study with blood samples collected on 13 women with and 36 matched controls without breast cancer after pediatric HL. Affymetrix U133 Plus 2.0 arrays were utilized to measure extracted RNA for global gene expression. For each probe set, the two-sided Wilcoxon rank sum tests were used to compare the mean/median expression of the cases to that of the controls, with defined pathways and gene sets identified. Affymetrix GeneChip® Human Mapping 500K Set was used to characterize the genotype of each case and control. The association of genotype with case-control status was explored with a chi-square test. The negative sum of log-p-values from the asymptotic chi-square test was used as a statistic, identifying significance single nucleotide polymorphisms (SNPs) mapped to a specific gene.

The analysis found significant gene expression differences within 12 defined pathways and 43 differentially expressed genes between cases and controls. Significant genotype differences were found over a region of chromosome 10 and included 6.1 kilobases with 11 differentially expressed SNP's between cases and controls, with the most significant SNP being within the BCCIP gene. Functional studies indicate that the BCCIP gene may be an important cofactor for BRCA2 in tumor suppression, and a modulator of CDK2 kinase activity via p21. While validation of findings is ongoing, this genome wide study may provide additional polymorphisms for consideration in the etiology of secondary breast cancer after HL therapy.

Funding Sources: NINR/NIH Ruth L. Kirschstein National Research Service Award (Grant 1 F31 NR01 0057-01), the American Cancer Society predoctoral nursing scholarship (Grant DSCN-06-214-01), and St. Jude Childrens Research Hospital

CJ

TWO-STEP CLUSTER ANALYSIS OF CYTOKINE RATIO SUGGESTS SUB-GROUP WITH HIGHER AUTOLOGOUS TRANSPLANT RELATED MORBIDITY.

Robert Rice, RN, PhD, AOCNP®, Memorial Sloan-Kettering Cancer Center, New York, NY

High-dose therapy and autologous stem cell transplantation has become a standard treatment for a number of diseases. The complication of Engraftment Syndrome occurs at the time of neutrophil engraftment and increases the patient's risk of peri-transplant morbidity and mortality. A number of pro-inflammatory cytokines have been associated with the Engraftment Syndrome. Increased Interleukin-6 and a suppressed Interleukin-12/Interleukin-6 ratio (IL-12/IL-6 ratio) have been associated with the toxicities of engraftment and increased morbidity and mortality.

To evaluate patterns of cytokines associated with the engraftment syndrome in a series of autologous transplant patients. To determine if any naturally forming sub-groups were present based on the cytokine expression ratio of Interleukin 12 and Interleukin 6 (IL12/IL6).

Clinical exploration using cytokine data from a small but homogenous population of autologous transplant patients to determine if sub-groups of patients appeared based on the expression ratio of Interleukin 12 and Interleukin 6 (IL12/IL6).

Cytokine data obtained during the engraftment phase of transplant from 31 patients with hematologic malignancies and who were undergoing high-dose therapy and autologous stem cell transplantation between 2002 and 2004 were reviewed retrospectively. We used Two-Step Cluster Analysis, applying first hierarchical cluster analysis followed by k-Means cluster analysis, to determine if sub-groups presented based on the expression of IL12/IL6 ratio during the engraftment phase and which would then further demonstrate group differences in antecedent and outcome characteristics.

Sub-groups were formed suggesting that patients with decreased IL-12/IL-6 ratio during the engraftment phase of transplant have more significant morbidity related to transplant, including longer hospital length of stay ($p = 0.04$), increased days of antibiotic use ($p = 0.01$), and greater red blood cell transfusion requirements ($p = 0.05$). Documented infections and radiographic findings were overrepresented in the "high morbid" group (although these were not statistically significant). Evaluation of IL12/IL6 ratio during the peri-transplant course may help to determine patients who are at higher risk for peri-transplant complications and worse outcomes. This hypothesis should be tested in a prospective study.

Funding Sources: American Cancer Society DSCN-04-228-01; NCI R25 CA093831 (Kathi Mooney, PI)

Podium Session 17: Clinical Trials and Multisite Research

CK

THE SMART APPROACH: AN INNOVATIVE METHOD TO MULTI-SITE QUALITATIVE DATA COLLECTION AND ANALYSIS.

Kristin Stegenga, RN, PhD, CPON®, Children's Mercy Hospital, Kansas City, MO; Sharron Docherty, RN, PhD, CPNP, Duke University School of Nursing, Durham, NC; Celeste Phillips-Salimi, RN, Indiana University School of Nursing, Indianapolis, IN; Molly Donovan, MPH, Indiana University School of Nursing, Indianapolis, IN; Verna Hendricks-Ferguson, RN, PhD, Goldfarb School of Nursing at Barnes-Jewish College, St. Louis, MO; Yvonne Barnes, RN, MSN, CPNP, St. Louis Children's Hospital, St. Louis, MO; and Joan Haase, RN, PhD, FAAN, Indiana University School of Nursing, Indianapolis, IN

To describe an innovative approach to multi-site qualitative data collection and analysis enabling the participation of team members with varying research experience located at multiple study sites.

The use of qualitative methods has the potential to add depth and increased understanding of the impact of this behavioral intervention on AYAs and their parents. Collecting and analyzing qualitative data across multiple sites and employing study team members with a wide range of qualitative research experience are challenges that can have a critical impact on data quality and understanding of results. Thus the study team has employed an innovative and systematic approach to collecting and analyzing qualitative data across the multiple sites. This approach includes training for all team members, pairing of experienced and less experienced researchers for small group work, and scheduling regular conference calls during which the team is able to discuss concerns, both functional and methodological, as well as emerging themes revealed in the data.

The Stories and Music for Adolescent/Young Adult (AYA) Resilience during Transplant (SMART) study is a randomized controlled trial assessing the efficacy of a therapeutic music video intervention. The intervention targets resilience and quality of life (QoL) for AYA undergoing stem cell transplantation. Quantitative data-collection

methods at three time-points through 100 days post transplant are being used to evaluate the efficacy of the intervention compared to the low dose control on overall resilience and QoL. A secondary aim, to describe the meaning and helpfulness of the study interventions for the AYA and parents, is being examined using qualitative interviews after the last quantitative data-collection time-point.

The method by which qualitative data is collected and analyzed in this study provides an innovative model for future collaboration between and among nurse clinicians and scientists.

Qualitative data collection and analysis is possible across a large multi-site study despite varied qualitative skill levels in team members. The keys to success are a well-planned strategy that targets training in qualitative data collection and analysis methods and a team that brings a variety of experiences and perspectives, both academic and clinical to the endeavor.

Funding Source: NIH 5R01NR008583

CL

GIRC: AN ONCOLOGY NURSE COOPERATIVE RESEARCH GROUP.

Jane Bryce, RN, MSN, AOCNS®, National Cancer Institute, Naples, Italy; Gianluca Catania, MSN, National Cancer Institute, Genova, Italy; Marzia Falanga, CRN, S. Giuseppe Moscati Hospital, Avellino, Italy; Luciano Callegaro, MSN, S. Raffaele Hospital, Milano, Italy; Daniela Grosso, MSN, Veneto Oncologic Institute, Padova, Italy; Anna Maria Colussi, CRN, National Cancer Institute, Aviano, Italy; and Irene Feroce, MSN, European Institute of Oncology, Milano, Italy

The purpose of this presentation is to describe an innovative cooperative oncology nursing research group developed by Italian clinical research nurses (CRNs).

CRNs working in clinical trials across the spectrum of hematology-oncology adult and pediatric settings joined to form a cooperative oncology nursing research network (GIRC), with overall aim of promoting nursing research. The first GIRC objective was identifying a model for promoting, developing, conducting multicentered nursing research. A trans-cooperative group structure was chosen, permitting CRN collaboration and networking within/across CCGs. Advantages include sharing resources/expertise across groups, development of intra/inter-group studies, using existing research infrastructures for multicentered-multidisciplinary studies, creating nursing-led research infrastructures. Starting with Multicentered Italian Trials in Ovarian Cancer (MITO) group, CCG buy-in is being obtained. GIRC studies are led by steering committees(SC), with primary or secondary GIRC identification.

The second objective of identifying GIRC research priorities was accomplished through brainstorming, review of literature and ongoing and proposed CCG protocols. Several themes emerged: evaluating symptom burden of different treatments and impact on global distress/QOL indicators; symptom clusters along the continuum of disease; prediagnostic symptom patterns and patient/clinician responses; quality of information given to patients in clinical trials.

Third objective was to select feasible initial projects for early implementation. The following multicentered studies were planned: GIRC-01: Quality of informed consent (data collection complete); GIRC-02: Pathway to diagnosis of ovarian cancer: an exploratory MITO study (in progress); GIRC-03: Symptom burden and symptom clusters in advanced NSCLC patients receiving first-line biotherapy vs. chemotherapy (approved); GIRC-04: Pathway to diagnosis in lung cancer (SC). GIRC-05: CRNs exemplars of expert practice (ongoing), GIRC-06: Clinical trials and Italian oncology nurses: a learning needs analysis (SC).

Recent literature confirms the emergence of models for conducting nursing research within cancer cooperative groups (CCGs) and clinical research networks. Though Italy has a rich history of CCG research, there are limited resources for the promotion of nursing research nursing within these groups (few CRNs, doctorally prepared nurses).

Interventional research, population based studies, and research grants are further GIRC priorities.

The trans-cooperative group model is a feasible way to share resources, promote a culture of research, and to plan/conduct multicentered nursing research.

CM

STRATEGIES TO PROMOTE DATA MANAGEMENT AND QUALITY CONTROL ACROSS MULTIPLE SITES.

Susan Bauer-Wu, PhD, RN, Emory University, Atlanta, GA; Mary Cooley, PhD, RN, Dana-Farber Cancer Institute, Boston, MA; Rachael Whitworth, MA, Emory University, Atlanta, GA; and Tiffiny-Jen Cohen, BS, Dana-Farber Cancer Institute, Boston, MA

The purpose of this presentation is to describe effective strategies to promote high quality data management and quality control in the conduct of a multi-site behavioral intervention trial.

A longitudinal, randomized behavioral trial in progress has implemented specific strategies to maintain efficiency, data integrity, and communication among study team members from across sites. The study involves two primary recruitment and data collection sites as well as biostatistics and co-investigator at a third site and several interventionists based in different locations. One comprehensive data management Access file (to manage day-to-day study progress and changes, not the data itself) is kept on a password protected web-based data sharing site (www.centraldesktop.com). This allows for the P.I., Co-I, and other team members to follow progress at the other sites in real time. Other important common documents are also housed on-line at this web site. The on-line site is also used for the transfer of large files from one clinical site to the next (i.e. audio files used for quality control of interventions), which saves time and money in burning and mailing CDs. Regular teleconferences are performed using free teleconference services; this is especially helpful for calls of nine or more people. Other lessons learned of what has and has not worked will also be presented.

Multi-site research is complex and the complexity is exponentially greater when adding behavioral and longitudinal components. Efficient and reliable systems and consistent communication are essential to maintaining data integrity. The challenges to effective and efficient systems and communication include cost, time, and institutional and technological limitations (i.e. firewalls, huge files).

The strategies used by this study team have emerged over the last three years. Other investigators beginning multi-site research may benefit from our lessons learned.

Various low cost strategies can be implemented to enhance or maintain data integrity and effective team communication across sites.

Funding Source: NIH/NINR R01 NR009257

Podium Session 18: Family History/Risk Assessment

CN

PREVENTIVE AND SCREENING HEALTH BEHAVIORS IN THE PRESENCE OF A FAMILY HISTORY OF COLON CANCER.

Laura Beamer, DNP(c), CNP, CNS, AOCNP®, AOCNS®, Centegra Health System, McHenry, IL; and Laura Prouty-Sands, PhD, Purdue University, West Lafayette, IN

Colorectal cancer (CRC) is the third most frequently occurring malignancy and causes the second highest cancer-related mortality rate in the US population. Approximately $8.4 billion is spent annually in the US on the treatment of CRC. Because CRC has a long natural history, prevention and early detection can reduce morbidity and mortality.

The purpose of this study was to determine to what extent does having a first degree relative (FDR) with colon cancer influence screening and preventive health behaviors? This study addresses two of the ONS Research Agenda 2005-2009 priorities: 1) Research focused on the impact of having a high risk for cancer, including

having a family history of cancer, on individuals and families and 2) Develop and test cost-effective interventions to increase evidence-based screening based on individual cancer risk assessment.

Since our outcome of interest was health behaviors, we used the health belief model guided our approach to this study.

A cross-sectional study of 5,433 university employees who participated in a wellness program was conducted. Participants completed the HealthPath® Questionnaire and Staywell® Health Management Health Risk Assessment Additional Questions online. Variables examined include level of education, family history of colon cancer, diet, physical activity, body mass index, personal history of diabetes mellitus, fecal occult blood testing (FOBT), and large bowel endoscopy. Frequencies were conducted on all variables and covariates, bivariate associations between participant characteristics and primary relative with colon cancer were tested using X2 tests of independence, and the hypothesis that having an FDR with colon cancer influences health behavior was tested using logistic regression.

Screening behavior: Having fecal occult blood testing (p=.004) and bowel endoscopy (p<.001) was strongly associated with having an FDR with CRC. History of an FDR with CRC (3.76, 95% CI=2.75-5.16) was predictive of having bowel endoscopy. Preventive behavior: Exercise and diet modification were not associated with having an FDR with CRC. Our study was limited by the instrument questions. Additional studies are needed to further explore the role of preventive behavior in CRC risk reduction in at risk populations. An evidence-based guideline must then be created and disseminated to healthcare providers and the public.

CO

IDENTIFYING PATIENTS AT HIGH RISK FOR COLON CANCER THROUGH FOCUSED FAMILY CANCER HISTORY INVESTIGATION.

Duveen Sturgeon, RN, Vanderbilt University Medical Center, Nashville, TN; Tonna McCutcheon, MSN, APRN-BC, Vanderbilt Medical Center, Nashville, TN; Julie Hood, RN, Vanderbilt Medical Center, Nashville, TN; Roberta Muldoon, MD, Vanderbilt Medical Center, Nashville, TN; Alan Herline, MD, Vanderbilt Medical Center, Nashville, TN; and Paul Wise, MD, Vanderbilt Medical Center, Nashville, TN

Hereditary colorectal cancer syndromes account for approximately 10% of all colon cancer. Hereditary Nonpolyposis Colorectal Cancer Syndrome (HNPCC) is an autosomal dominant disease that carries up to a 70% lifetime risk of developing colorectal cancer as well as extra colonic cancers such as endometrial and gastric whereas Familial Adenomatous Polyposis (FAP) confers up to a 100% lifetime risk of colorectal cancer. Often these syndromes go unrecognized due to inadequate history and lack of knowledge by nursing and medical staff.

Patients being followed in our colorectal surgical clinic often had limited or no cancer history documented for their immediate and extended family members. Our aim was to identify patients and family members who were at high risk for colon cancer by virtue of personal or family history and provide education, appropriate testing and counseling

All patients, regardless of age, seen in the colorectal cancer clinic with a diagnosis of colon cancer, or polyposis, had their medical records reviewed by the Hereditary Colorectal Cancer Registry coordinator and then were interviewed by either the coordinator or the nurse practitioner. All colorectal surgical staff received education regarding hereditary colorectal cancer syndromes. Furthermore, all patients seen by the nurse practitioner, regardless of diagnosis, had a multigenerational family cancer history obtained. Patients identified by the NP as being at increased risk due to personal/family history were referred to the Registry coordinator for follow up.

In 2007 220 patients were seen in the colorectal surgical clinic with a diagnosis of colorectal cancer or polyposis. 47(21%) of patients were identified as being at risk for having a hereditary colorectal cancer syndrome and went on for further investigation. Of the 47 high risk patients 14(30%) were found to have a mutation that was associated with HNPCC or a polyposis syndrome

Patients and family members at high risk for a colorectal cancer syndrome may be overlooked because of incomplete history taking and lack of knowledge regarding hereditary colorectal cancer syndromes. Appropriate education of nursing and medical staff about hereditary syndromes and the importance of obtaining a thorough family history are vital to the identification of at risk individuals.

CP

A MIXED-METHODS APPROACH TO MEASURING MELANOMA RISK COMMUNICATIONS.

Lois Loescher, PhD, RN, University of Arizona, Tucson, AZ; Kyung Hee Lim, PhD, RN, University of Arizona College of Nursing, Tucson, AZ; and Heather Hiscox, MPH, University of Arizona College of Nursing, Tucson, AZ

We describe a mixed-methods approach for developing instruments to measure perceived melanoma risk communications from healthcare providers (providers).

We used a QUAL-QUAN method to further elucidate perceived provider melanoma risk communications. The QUAL component was a qualitative descriptive approach, which was time-intensive but netted minimally theorized answers to questions of special relevance to practitioners, and produced a useful summary of events. Interview analyses of 20 melanoma patients/family members with a family history of melanoma revealed that participants perceived few provider discussions of melanoma risk; wanted to trust provider information, but sometimes found it confusing; thought the healthcare system constrained communications; and voiced concerns about "caring" communications. Using Haase's decision-making process we constructed two measures of perceived provider risk communications from the QUAL data: one measuring communications frequencies (24 items); another measuring beliefs about communications (5 items). Wording of all items reflected the phrases underpinning the QUAL themes, enhancing validity of the measures. The QUAN component consisted of administering the self-report instruments to 104 melanoma patients with a family history. After initial analysis to delete items with low item-total correlations and redundancy, we subjected 13 frequency items and five beliefs items to principal components analysis. The two factors on the frequency measure contributed to 75.8% of the variance (alpha = .95); the unidimensional belief scale items contributed to 49.9% of the variance (alpha =.74).

Families with a melanoma history have high risk of melanoma occurrence/recurrence. Melanoma survival is enhanced if high-risk individuals are aware of their risk and ways to modify it. Risk communications from providers likely affect understanding and management of risk, yet research on this phenomenon is sparse. Although "communication" is an implicit factor in many health behavior models, we found no measures of communication from providers to high-risk individuals.

Because the items are rooted in the context of melanoma-high-risk, the measures may lack validity in other cancer high-risk populations. We will develop a generic version to test in these groups.

A mixed-method approach is laborious, but rigorous and appropriate for developing measures of under-studied phenomena. Our psychometrically acceptable instruments enable measurement of perceived provider risk communications.

Funding Source: NIH-NCI 1K07CA106996

CQ

PREDICTORS OF STAGES OF CHANGE AMONG FEMALE RELATIVES AT RISK FOR INHERITED BREAST/OVARIAN CANCER WHEN SEEKING CANCER RISK INFORMATION.

Suzanne Mellon, PhD, RN, University of Detroit Mercy, Detroit, MI; James Janisse, PhD, Wayne State University,

Detroit, MI; Robin Gold, MS, CGC, Oakwood Health Care, Dearborn, MI; Michael A. Tainsky, PhD, Karmanos Cancer Institute, Wayne State University, Detroit, MI; and Michael Simon, MD, MPH, Karmanos Cancer Institute, Wayne State University, Detroit, MI

With 5-10% of breast and ovarian cancer attributed to an inherited mutation gene, such as BRCA1/2, at-risk relatives live with the reality of elevated cancer risk for themselves and uncertainty and worry about appropriate health surveillance. However, little research has been carried out with individuals regarding factors that may influence how they make decisions about inherited cancer risk information and how the cancer survivors influence the at-risk female relatives' readiness to change.

The purpose of this study was to determine the extent that sociodemographic and medical factors, personal and family resources (coping style, self-efficacy, family communication, and social support), appraisal factors (cancer risk perception and cancer worries), and decisional balance contributed to female relatives' readiness to change, and to determine the extent to which select survivor variables (risk perception, cancer worries, communication, and decisional balance) influenced their relatives' readiness to change.

A family stress framework and trans-theoretical model of change guided this research.

A descriptive, cross-sectional design was conducted with 146 unaffected female relatives and 146 breast and/or ovarian cancer survivors (N=292). A population-based sample, stratified by race (Caucasian and African-American) and by diagnosis (breast and ovarian), was randomly selected from the NCI SEER Cancer Registry in southeastern Michigan. Standardized instruments with adequate reliability and validity were used to measure all study variables. Analyses included descriptive statistics and path analysis.

Descriptive analyses show that a majority of at-risk relatives (67%) were either in pre-contemplation or contemplation to learn about their inherited cancer risk, while a smaller percentage either were actively planning or had taken steps to learn about their risk status (20%). Only 19 relatives (13%) had taken steps and changed behavior related to their risk status. Preliminary path analysis revealed several factors that may contribute to stages of change, including cancer worries, self-efficacy, family communication, and decisional balance. Results from this study suggest a profile of factors that influence at-risk female relatives' readiness to change to learn more about their inherited cancer risk, the importance of the influence of the survivors on their decision, and addressing cancer worries in potentially at-risk individuals.

Funding Source: NIH, NINR R21 NR008584-01

Podium Session 19: Fatigue and Sleep

CR

FATIGUE AND SLEEP QUALITY OUTCOMES 1 YEAR AFTER BREAST CANCER ADJUVANT CHEMOTHERAPY: IMPACT OF A BEHAVIORAL SLEEP INTERVENTION. Ann Berger, PhD, RN, AOCN®, FAAN, University of Nebraska Medical Center, Omaha, NE; Brett Kuhn, PhD, BSM, University of Nebraska Medical Center, Omaha, NE; Julie Chamberlain, MS, BSN, University of Nebraska Medical Center, Omaha, NE; Sangeeta Agrawal, MSc, University of Nebraska Medical Center, Omaha, NE; Mary Pat Roh, BSN, University of Nebraska Medical Center, Omaha, NE; and Patricia Fischer, BSN, CCRC, Nebraska Medical Center, Omaha, NE

Fatigue and sleep disturbances are the most frequent symptoms reported during adjuvant chemotherapy (CTX) and among survivors.

This study examined whether a four-component individualized behavioral sleep intervention designed to impact perpetuating factors for insomnia would improve sleep quality and reduce fatigue in survivors one year after the initial CTX and intervention.

Women (X=52.1) post-op Stages I-IIIA breast cancer and receiving CTX were enrolled in this randomized-controlled trial. Prior to initial CTX, nurses coached sleep intervention participants (n=113) to develop an individualized sleep plan that was reinforced and revised at each CTX, and 30, 60, and 90 days after the last CTX. Controls (n=106) received healthy-eating information and equal time/attention. Data were collected 2 days prior to and 7 days after each CTX, and for 7 days at 30, 60, and 90 days after the last CTX, and 1 year after the first CTX. Reliable and valid measures included: Piper Fatigue Scale (PFS) Pittsburgh Sleep Quality Index (PSQI), Symptoms Experience Scale, HADS, and MOS SF-36. RM-Mixed model analysis was used.

Fatigue in both groups increased significantly throughout treatment and returned to pre-treatment mild levels by day 90 (2.5/0-10 scale), and to lower levels at 1 year (2.2); no differences between groups in pattern of change were found at 1 year (p=.314). Factors related to fatigue at baseline that influenced pattern of change over 1 year included total symptoms, anxiety, and physical and mental status (p=0.03 –0.001). Sleep quality was significantly different between the groups over time (p<.001); by group (p=.043) and by time x group interaction (p=.018). Factors related to sleep quality at baseline that influenced pattern of change over 1 year included: group, education, fatigue, and anxiety (p=0.03–0.002). Research, education and practice implications are: women who begin CTX with lower physical and mental status and higher anxiety and symptoms, are at high-risk to report higher fatigue 1 year later; women who begin CTX with higher fatigue and anxiety and higher educational level, and those who do not receive interventions for sleep are more likely to report poorer sleep quality 1 year later.

Funding Source: NIH/NINR R01 00762-05

CS

IDENTIFICATION OF SUBGROUPS OF ONCOLOGY PATIENTS AND FAMILY CAREGIVERS BASED ON THEIR DISTINCT TRAJECTORIES OF DEPRESSIVE SYMPTOMS. Laura Dunn, MD, Department of Psychiatry, San Francisco, CA; Marylin Dodd, RN, PhD, University of California, San Francisco, CA; Bruce Cooper, PhD, University of California, San Francisco, CA; Claudia West, RN, MS, University of California, San Francisco, CA; Bradley Aouizerat, PhD, University of California, San Francisco, CA; Kathryn Lee, RN, PhD, University of California, San Francisco, CA; and Christine Miaskowski, RN, PhD, University of California, San Francisco, CA

Recent evidence suggests that a significant proportion of both oncology patients and their FCs experience depressive symptoms. However, less is known about how depressive symptoms change over time or which individuals may be at greater risk for worse depressive symptom trajectories.

The purposes of this study were to determine if subgroups of patients and FCs who differed with respect to their depressive symptom scores over a period of six months could be identified and whether these subgroups differed on demographic and symptom characteristics, as well as quality of life (QOL) outcomes.

The UCSF Symptom Management Model served as the theoretical framework.

Participants (168 patients, 85 FCs) completed a demographic questionnaire and the Center for Epidemiologic Studies Depression Scale (CES-D; 11 times over the period of six months). In addition, they completed valid and reliable measures of fatigue, anxiety, sleep disturbance and QOL. No differences were found in baseline or mean CES-D scores between patients and FCs, Therefore, their longitudinal data were combined in the growth mixture model (GMM) analysis.

The GMM analyses identified that four classes could be extracted from the data (i.e., Class 1 (48.1%) with low CES-D scores, Class 2 (32.5%) with moderate CES-D scores; Class 3 (11.1%) with

high CES-D scores; Class 4 (8.3%) with very high CES-D scores). No differences were found in the percentage of patients and FCs in each of the four classes. Participants in Classes 3 and 4 were significantly more likely to be female, nonwhite, and not married/partnered. In addition, these participants were significantly more likely to report higher levels of anxiety, fatigue, and sleep disturbance at the time of the patient's simulation visit for RT and poorer QOL outcomes. The use of GMM is an important analytic tool to identify subgroups or patients and FCs with different depressive symptom experiences. This type of analysis may lead to the identification of individuals who require different types of psychological interventions.

Funding Source: National Institute of Nursing Research (NR04835)

CT

PAIN AND ETHNICITY PREDICT THE TRAJECTORIES OF SLEEP DISTURBANCE IN PATIENTS UNDERGOING RADIATION THERAPY (RT) FOR PROSTATE CANCER.

Bradley Aouizerat, PhD, School of Nursing, University of California, San Francisco, CA; Steven Paul, PhD, University of California, San Francisco, CA; Kathryn Lee, RN, PhD, University of California, San Francisco, CA; Marylin Dodd, RN, PhD, University of California, San Francisco, CA; Claudia West, RN, MS, University of California, San Francisco, CA; and Christine Miaskowski, RN, PhD, University of California, San Francisco, CA

Sleep disturbance is a common problem in oncology patients. However, limited information exists on the trajectories of sleep disturbance, as well as on predictors of inter-individual variability in sleep disturbance.

The study purposes, in a sample of patients who underwent RT for prostate cancer were to: examine how total sleep time changed from the time of the simulation visit to 4 months after the completion of RT and to investigate whether patient, disease, and symptom characteristics predicted the initial levels of sleep disturbance and/or characteristics of the trajectories of sleep disturbance.

The University of California's Symptom Management Model served as the theoretical framework.

At the time of the simulation visit, patients (n=82) completed a demographic questionnaire, the Karnofsky Performance Status (KPS) Scale, Brief Pain Inventory, and State Anxiety Scale. In addition, for 16 assessments over six months, they wore a wrist actigraph for two consecutive days and nights. Actigraphy data were analyzed using Action II software. Hierarchical Linear Modeling (HLM), based on full maximum likelihood estimation, was done to evaluate the trajectory of sleep disturbance and the predictors of the various trajectories.

A large amount of inter-individual variability was demonstrated in the trajectory of sleep disturbance. The goodness-of-fit test of deviance indicated that a quadratic model fit the data significantly better than a linear model ($p<.0001$). At the time of the simulation visit, the model indicated that patients slept about 329.8 (SD=14.4) minutes per night. Predictors of the intercept included ethnicity, KPS score, total dose of RT, and pain status. Predictors of the quadratic trend included: total dose of RT, level of anxiety, presence of pain, and total sleep time at baseline. Findings from this study suggest that men with prostate cancer have a significant amount of sleep disturbance over the course of RT. Nonwhite men and those with significant pain, as well as those with a lower functional status, higher levels of anxiety, and who received a higher total dose of RT were at increased risk for higher levels of sleep disturbance.

Funding Source: National Cancer Institute (CA64734)

CU

THE EXPERIENCE OF FATIGUE FOR WOMEN RECEIVING RADIATION OR CHEMOTHERAPY FOR NEWLY-DIAGNOSED BREAST CANCER.

Loretta Williams, PhD, RN, AOCN®, OCN®, University of Texas M.D. Anderson Cancer Center, Houston, TX; V. Shannon Burkett, PhD, Heritage Behavioral Health Consultants, Houston, TX; Ibrahima Gning, PhD, University of Texas M.D. Anderson Cancer Center, Houston, TX; and Charles Cleeland, PhD, University of Texas M.D. Anderson Cancer Center, Houston, TX

Fatigue is the most common, distressful symptom related to cancer, affecting 30-82% of patients with breast cancer. Understanding patients' experiences of symptoms is critical to assessing and managing symptoms. The assessment and management of symptoms is a primary role of oncology nurses. Using qualitative research in understanding symptoms allows identification of aspects of symptoms that are most important to persons experiencing the symptoms.

The purpose of this study is to understand patients' experience of fatigue during chemotherapy or radiation therapy for newly-diagnosed breast cancer. This study addresses the content area of Research in Cancer Symptoms and Side Effects of the 2005-2009 ONS Research Agenda.

The philosophical framework for this study is Story Theory. Using Story Theory, the researcher allows the participant to share the experience of a complicating health challenge in a clear and understandable way.

This qualitative, cross-sectional study is a secondary analysis of a larger study to define fatigue based on the experience of patients with cancer. A purposive sample of 15 participants with newly-diagnosed breast cancer receiving chemotherapy or radiation at a comprehensive cancer center in the southern United States described their experiences of fatigue in single audiotaped, story-based dialogues. Using an exploratory descriptive method, the researcher analyzed verbatim transcripts of the dialogues and developed themes of the fatigue experience, which were reviewed and confirmed by 2 other researchers to ensure accuracy. The themes were used to construct a description of the fatigue experience.

Patients with newly-diagnosed breast cancer describe fatigue as tiredness and lack of energy, identifying the need to rest as the major effect of fatigue. Fatigue with chemotherapy more often includes sleepiness than it does with radiation therapy. Fatigue with radiation therapy was more often associated with physical discomfort, while with chemotherapy it was more often associated with psychological discomfort. The type of therapy may influence the experience of fatigue. Further research is needed to delineate the commonalities and differences in cancer-related fatigue depending on diagnosis, treatment, and other patient-specific factors. Different interventions may be more effective in managing fatigue and its interference with daily activities depending on disease, treatment, and patient characteristics.

Funding Source: Cephalon, Inc.

Podium Session 20: Pediatric Oncology

CV

FATIGUE, PHYSICAL PERFORMANCE, AND CARNITINE LEVELS IN CHILDREN AND ADOLESCENTS RECEIVING CHEMOTHERAPY.

Mary C. Hooke, RN, CPON®, Children's Hospitals and Clinics of Minnesota, Minneapolis, MN; Ann Garwick, PhD, RN, LP, LMFT, FAAN, University of Minnesota School of Nursing, Minneapolis, MN; and Cynthia Gross, PhD, University of Minnesota School of Nursing, Minneapolis, MN

Fatigue in childhood cancer is a pervasive and distressing symptom that has a physical component described as a "lack of energy". Fatigue, physical performance, and a micronutrient, carnitine, all relate to physical energy and may be influenced by chemotherapy.

The purpose of this pilot study is to examine the relationship between the physical performance and carnitine plasma levels and fatigue in child (6-12) and adolescent (13-17) cohorts receiving chemotherapy.

A developmental framework guided this work.

The study included 30 patients, ages 6 to 17, who were newly diagnosed with cancer and receiving chemotherapy. There were

20 males and 10 females; 16 were ages 6-12 and 14 were ages 13-17. Standardized instruments were administered in the 1st and 3rd cycle of chemotherapy between day 15 and 29. Instruments included physical performance tests (Timed Up and Down Stairs [TUDS] and 6-Minute Walk test [6MWT]), carnitine plasma levels, and self-reported Childhood Fatigue Scale or Fatigue Scale for Adolescents.

In 6 to 12 year olds, paired t-tests showed that from cycle 1 to 3, total carnitine plasma levels decreased ($p = 0.011$) and physical performance measures appeared to improve (TUDS, $p = 0.083$ and 6MWT, $p = 0.056$). Fatigue scores also tended to improve ($p = 0.057$). In 13 to 17 year olds, there is a suggestion that fatigue decreased ($p = 0.105$) but other variables evidenced little change. Pearson correlation coefficients were used to examine relationships between the change in variables from cycle 1 to 3. In 6 to 12 year olds, when time on the TUDS decreased, fatigue tended to decrease ($p = 0.073$), and when 6MWT distance increased, fatigue decreased ($p=0.006$). In 13 to 17 year olds, all correlations between changes in the variables were slight and not significant.

Fatigue may decrease early in treatment as disease symptoms resolve. Fatigue in the 6-12 age group was related to physical performance, which is consistent with previous studies that define fatigue in children as primarily a physical sensation. Adolescent fatigue was not related to physical performance which supports the concept that, in adolescents, fatigue is more complex and includes mental and emotional components.

Funding Sources: American Cancer Society Doctoral Nursing Scholarship, Pine Tree Apple Tennis Classic, White Family Oncology Fellowship

CW

PATTERNS OF FATIGUE IN ADOLESCENTS RECEIVING CHEMOTHERAPY.

Jeanne Erickson, RN, AOCN®, University of Virginia School of Nursing, Charlottesville, VA

Adolescents with cancer report that fatigue severity and distress are highest during the treatment period. Fatigue affects their mood and quality of life and limits their ability to participate in usual activities.

Little is known about how cancer-related fatigue varies in adolescents during the initial chemotherapy treatment period. The purpose of this study was to describe patterns of fatigue in adolescents during the course of one initial month of chemotherapy using daily and weekly self-reports.

A developmental science approach guided this study to consider how unique aspects of adolescence influence the cancer symptom experience of these young patients.

This descriptive study used mixed methods of self-report to collect data from a convenience sample of 20 adolescents (mean age = 16.12y) with a variety of cancer diagnoses. During an initial month of outpatient chemotherapy, the adolescents described their daily fatigue using rating scales and qualitative diaries. Multidimensional fatigue was measured weekly with the PedsQL TM Multidimensional Fatigue Scale, a valid and reliable instrument with teenagers. Quantitative data analysis was conducted using visual graphic analysis techniques. Qualitative data were analyzed using a pre-structured case approach and explored for descriptions of fatigue that enhanced the numerical ratings.

Adolescents commonly reported an increase in fatigue severity in the days immediately following chemotherapy administration. When chemotherapy was administered every three to four weeks, daily trajectories showed a declining 'roller-coaster' trend that continued until the next treatment. Adolescents who received chemotherapy every week showed more fluctuations in fatigue severity that did not diminish across the month. The weekly measures of fatigue could not detect the daily swings in fatigue severity and showed more variability in fatigue trajectories across the month. Adolescents associated fatigue with other symptoms, especially sleep-wake disturbances, pain, and nausea. Cancer-related fatigue interfered with adolescents' abilities to maintain their usual lifestyles, but many still participated in the typical activities of adolescence. Frequent assessment may be necessary for optimal measurement and management of fatigue. Oncology clinicians and researchers need to tailor interventions to focus on factors that contribute to fatigue, especially during the acute treatment period.

Funding Sources: NCI R25 CAA093831, NINR F31NR9341-02, ACS DSCN-04-227-01

CX

FACTORS INFLUENCING PLACE OF DEATH AND END-OF-LIFE DISCUSSIONS IN ADOLESCENTS WITH CANCER.

Cynthia Bell, MSN, Indiana University School of Nursing, Walther-BCOG, Indianapolis, IN; Jodi Skiles, MD, Indiana University School of Medicine, Indianapolis, IN; Victoria Champion, DNS, RN, FAAN, Indiana University School of Nursing, Indianapolis, IN; and Kamnesh Pradhan, MD, Indiana University School of Medicine, Indianapolis, IN

SIGNIFICANCE: Although pediatric oncology survival rates have increased over the past 25 years, a number of patients will die regardless of therapy. Additionally, adolescents' survival rate is significantly lower when compared to other pediatric age groups. Although few end-of-life (EOL) studies have been conducted on adolescents with cancer, clinical encounters reported in the literature suggest preparation for EOL is less than optimal.

PROBLEM AND PURPOSE: The purpose of this study is to describe factors that are related to age at time of death, diagnosis, place of death, and EOL discussions in patients treated at a large pediatric tertiary care center in the United States.

THEORETICAL/SCIENTIFIC FRAMEWORK: A developmental approach was used to define early adolescence (10-13 years old), middle adolescence (14-17 years old) and late adolescence (18-21 years old) described in this study.

METHODS & ANALYSIS: A retrospective chart review was conducted of 217 pediatric oncology patients who died between 2000 and 2005. Adolescents at time of death (N = 112) were compared to patients under the age of 10 (N = 105). Analyses include descriptive statistics, Independent Sample t- tests, One-way ANOVA and Chi-Square.

FINDINGS AND IMPLICATIONS: Type of diagnosis was related to age at diagnosis and when EOL discussions occurred. Individuals diagnosed with cancer as an adolescent as compared to those diagnosed at a younger age were less likely to have a CNS tumor and more likely to have leukemia/lymphoma ($p = 0.029$). Diagnosis also influenced timing of EOL discussions. Patients diagnosed with leukemia or lymphoma had EOL discussions significantly closer to death (M:35 days) than patients with a solid tumor (M:157 days) or CNS tumor (M:148 days).

End of life discussions varied by age group and by place of death. Adolescent EOL discussions were less likely to be conducted by the Primary Attending Oncologist as compared to other physicians ($p = 0.015$). When considering only adolescents, those who died at home rather than in a hospital, had EOL discussions conducted more frequently by the primary oncologist ($p = 0.035$). Relationship with primary physician may influence place of death and warrants further study.

Funding Sources: Walther Cancer Institute, American Cancer Society DSCNR-06-206-03, Oncology Nursing Society Doctoral Scholarship

CY

ASSESSMENT OF PEDIATRIC ONCOLOGY PATIENTS' SYMPTOMS WITH SYMPTOM SURVEYS COMPARED TO MEDICAL RECORD REVIEW.

Christina Baggott, RN, PNP-BC, CPON®, UCSF School of Nursing, San Francisco, CA

Accurate symptom assessment is critical in patient care and research.

Many oncology patients' symptoms go unreported. This study's purpose was to compare the number of symptoms detected by

symptom questionnaires to the number of symptoms reported in patients' medical records.

The UCSF Symptom Management Theory provided a framework for this research, focusing on the connection between the symptom experience and symptom management.

Pediatric oncology patients receiving chemotherapy were eligible. After the consent process, the participants were randomized to the control or intervention groups. The participants in the control group proceeded with clinic visits as scheduled. Clinicians documented the interval histories with dictations. Participants or their caregivers (as applicable) in the intervention group completed the Memorial Symptom Assessment Scale 10-18 (MSAS 10-18) in addition to the clinic visits. The MSAS 10-18 is a valid and reliable tool used to assess pediatric oncology patients' symptoms. Mann-Whitney Tests were used to analyze differences in the median number of symptoms detected by self-report compared to clinician report between groups. Participants' self-reports of symptoms were compared to clinicians' reports within the intervention group. The characteristics of the participants' symptoms reported on the MSAS 10-18 were analyzed.

A total of 74 participants were enrolled. The mean number of symptoms detected by self-report was 9.34 (95% CI: 7.75-10.93), compared to 1.81(95% CI: 1.47-2.15) reported by clinicians in the medical record. The number of symptoms detected by self-report was significantly higher than those reported by clinicians ($p < 0.005$). Within the intervention group, clinician assessments for nausea, vomiting, and diarrhea often contradicted patient (or caregiver) self-reports of these symptoms for the same time period. Among the participants in the intervention group, the most commonly occurring symptoms were anorexia, irritability, and fatigue. The symptoms rated most severe were mucositis, extremity numbness, and anorexia. The most distressing symptoms were mucositis, difficulty swallowing, and anorexia. Further evaluation of discrepancies between clinician and self-report of symptoms is warranted. The use of symptom checklists for patient report may provide more thorough and accurate data by which to evaluate disease and treatment-related toxicities than medical record review.

Funding Sources: Lucile Packard Childrens Hospital at Stanford Innovations in Patient Care Grants

Podium Session 21: Complementary and Alternative Medicine

CZ

FACTORS INFLUENCING TIME PERCEPTION IN PATIENTS USING VIRTUAL REALITY DURING CHEMOTHERAPY. Susan Schneider, RN, PhD, AOCN®, Duke University School of Nursing, Durham, NC

Chemotherapy treatments are intense and difficult to endure. Previous studies have demonstrated that using virtual reality (VR) during chemotherapy resulted in a significant elapsed time compression effect, validating the attention diversion capabilities of VR. This presentation explores factors which influence the effectiveness of VR as a distraction intervention to help patients tolerate chemotherapy treatments.

The purpose of this study was to explore the influence of age, gender, state anxiety, fatigue, and diagnosis in predicting the difference between the actual time elapsed for patients receiving intravenous chemotherapy versus the time the patients perceived elapsed while receiving chemotherapy treatment when immersed in a VR environment.

The Information Processing model guided this study. This model identifies environmental and developmental factors which influence time perception.

This is a secondary analysis of data from three previous studies, conducted at two comprehensive cancer centers. The sample of 153 adults had a mean age of 52.9, 81.7% were female; 86.9% were Caucasian, and 9.2% were African American. Subjects received chemotherapy for breast (62.8%), colon (12.4%), or lung cancer (24.8%). Participants used a head-mounted device to display encompassing images and block competing stimuli during chemotherapy. Demographic data (age, gender, diagnosis), the Piper Fatigue Scale, and State Anxiety Inventory were used as measures of the independent variables. Both instruments have demonstrated reliability and validity. Regression models were used to analyze the data. In a forward regression model, three predictor variables; diagnosis, gender and anxiety, explained a significant portion of the variability for altered time perception ($F = 5.06$, $p = .008$), with diagnosis being the strongest predictor. Breast and colon cancer patients scored 15.3 minutes and 13.1 minutes higher, respectively on the dependent variable (time difference) than lung cancer patients (when gender and anxiety are in the model at the same time).

VR is an innovative and non-invasive intervention that can make chemotherapy treatments more tolerable. Women with breast cancer are more likely to experience changes in time perception during VR. However, lung cancer patients experience more severe symptoms which may interfere with their ability to effectively use distraction. Understanding factors that predict which patients are likely to benefit an intervention can help nurses tailor coping strategies to meet patient needs.

Funding Sources: The data from these analyses were from studies funded by the American Cancer Society, the ONS Foundation through an unrestricted grant from Ortho Biotech Products, L.P. and Duke University Medical Center NINR (1 P20 NR07795-01)

DA

COMPLEMENTARY AND ALTERNATIVE THERAPY USE DURING TREATMENT OF BREAST CANCER. Camille Lambe, PhD, AOCN®, NP, Duke University School of Nursing, Durham, NC

CAM is used often by women during treatment for breast cancer and has been studied extensively in Caucasian, educated, affluent women but is poorly understood in poor, uneducated, rural and African American women. This study describes the use of CAM in this group and the process by which they make decisions about CAM.

This study aimed to characterize CAM use during breast cancer; to examine precipitating and influential factors in women's choices; to describe the process and timing of decisions; and to clarify CAM use for breast cancer related toxicities and CAM use of for improving health.

This was a descriptive study guided by decision making theory but, as the topic had not been studied extensively the model evolved as the study progressed.

This exploratory descriptive study used a cross sectional design and multiple methods including a card sort, individual interviews and quantitative measures. A convenience sample of 19 African American and Caucasian women participated, all of whom were CAM users and receiving or recovering from breast cancer treatment.

The results of this study indicate the importance of participant definitions of CAM as the definitions used varied from definitions in the literature. African American women reported higher use of CAM. The types of CAM treatments used by African American and Caucasian women also varied. Having breast cancer motivated all the women to engage in a life review. These women decided about CAM use by consulting experts, searching information sources, relying on their health beliefs and personal experiences. Their decisions involved weighing the pros and cons and trying out CAM therapies.

The importance of faith and spirituality, for African American breast cancer patients, was supported. Prayer was the CAM therapy chosen most often by all women in the sample. The study raises questions about reports that women do not discuss CAM with their health care providers as these findings indicate the importance of providers as resources for patients considering CAM.

Funding Sources: Grant P20-NR008369 from the National Institute of Nursing Research to the Center on Innovation in Health Disparities Research

DB

GENDER, SYMPTOM EXPERIENCE AND CAM PRACTICES AMONG CANCER SURVIVORS. Judith Fouladbakhsh, PhD, APRN, BC, AHN-BC, Wayne State University, Detroit, MI; and Manfred Stommel, PhD, Michigan State University, East Lansing, MI

More than 39% of U.S. cancer survivors use CAM (5.6 million) with women more likely than men to use CAM practices. Pain is a strong predictor of use, however it is unclear if this differs by gender. Usage patterns and predictors of specific types of CAM practices require further study. Nurses should understand factors influencing CAM use and implications for nursing care.

This study aimed to determine patterns, predictors and purpose of use of specific CAM practices in the U.S. cancer population in relationship to gender and symptom experience.

The CAM Healthcare Model, an extension of the Behavioral Model for Health Services Use, guided the study. Predisposing, Enabling and Need-for-care factors were examined for ability to predict CAM use.

A secondary analysis of the National Health Interview Survey (NHIS, 2002) using STATA 9.2 software for population estimation was conducted. Responses from 31,044 persons, (18 years of age or older), 2262 of whom reported a cancer diagnosis, were analyzed. Specific CAM practice use was determined by responses to items asking about special diets, yoga, tai chi, qigong, meditation, guided imagery, progressive relaxation, and deep-breathing exercises. Dependent variables included: (a) overall use/non-use of at least one CAM practice, (b) use/non-use of specific individual CAM practices and (c) purpose of use (treatment/health promotion). Independent variables included predisposing factors (gender, age, race, education), enabling factors (provider-contact), and need factors (cancer site, symptoms, length of survivorship). Binary Logistic Regression, the primary statistical model employed in the analysis, focused on between-subject differences in CAM practice use. A stepwise procedure was followed; potential predictor variables were excluded from the model if their p-value exceeded 0.10

CAM practice use was more prevalent among females, middle-aged, white, and well-educated persons. Pain, depression and insomnia were strong predictors of practice use, with differences noted by gender and specific type of practice. This study informs nurses and other healthcare providers on CAM practice use for symptom management, relationship of CAM practice use and gender, and resultant outcomes. Findings will guide future CAM practice intervention studies among patients with cancer.

Funding Source: Oncology Nursing Society Research Grant

Podium Session 22: Ethnic Minority Research

DC

SOCIAL DISCONNECTION IN AFRICAN AMERICAN WOMEN WITH BREAST CANCER. Sue Heiney, PhD, RN, CS, FAAN, Palmetto Health South Carolina Cancer Center, Columbia, SC; Sandra Underwood, RN, PhD, University of Wisconsin-Milwaukee, Milwaukee, WI; Linda Wells, RN, MA, Palmetto Health South Carolina Cancer Center, Columbia, SC; Rudolph Parrish, PhD, Vista Research, LLC, Columbia, SC; Linda Hazlett, PhD, Vista Research, LLC, Columbia, SC; and Lisa Bryant, MD, University of South Carolina School of Medicine, Columbia, SC

Our purpose is to describe the concept, Social Disconnection (SD) and better understand sociocultural influences that may impact it using data from 88 African American women with breast cancer (AAWBC) enrolled in a larger IRB-approved study.

Using baseline data, stress was measured with the Urban Stress Scale, stigma with the Negative Interactions Scale, fatalistic cancer beliefs with the Powe Fatalism Scale, spirituality with the Stayhorn Religiousness Scale, fear with the Visual Analogue Scale Worry, cancer knowledge with the Braden Cancer Knowledge Scale, and isolation with the UCLA Loneliness Scale. We characterized these variables using descriptive statistics, correlations and stepwise regression. In the sample, 56.25% had incomes less than $30K, 70.45% were head of household, 44.33% had 3 or more co-morbid conditions and their mean age was 54.75 years (sd =10.54). In univariate analysis, connection was found to be significantly negatively correlated with isolation (r= -0.5077, p<0.001), and positively correlated with community connection (r=0.4728, p<0.001). Community connection was negatively correlated with stress (-0.4125, <0.001). Stress, isolation and fear were all moderately correlated with each other (range of r: 0.41 to 0.56), and knowledge was negatively correlated with isolation (r=-0.40888, < 0.001). In multivariable stepwise regression, isolation was found to be the most significant predictor of both personal connection and community connection (p<0.001). Other significant variables that predicted connection (SSQ) were fatalism (0.028) and stigma (0.023); for community connection these were spirituality (0.090) and fatalism (0.029).

SD, the sense of being cut off from significant relationships, is theorized to occur after a breast cancer diagnosis. We operationally defined these relationships as personal (significant other, family members and non-kin) and community and measured them using the Social Support Questionnaire and Relational Health Indices. Cultural influences may coalesce to create SD in AAWBC or may counteract the stress of diagnosis and treatment.

The results suggest that SD is an important concept that can be quantified using available instruments. An implication is that clinicians and researchers may be able to reduce SD by developing and implementing interventions that decrease isolation.

Our exploratory analysis suggests that isolation was the strongest predictor of SD.

Funding Source: National Cancer Institute, R01 CA 107305

DD

BARRIERS TO CANCER CLINICAL TRIAL RECRUITMENT AND PARTICIPATION AMONG AFRICAN AMERICANS. Suzanne Devandry, MSN, RN, Merck & Co., Inc., North Wales, PA; Marvella Ford, PhD, Medical University of South Carolina Hollings Cancer Center, Charleston, SC; and Gail Barbosa Gilden, RN, ScD, Medical University of South Carolina College of Nursing, Charleston, SC

This paper presents the results of a critical review of academic literature to examine barriers to cancer clinical trial recruitment among African Americans using a conceptual model.

METHODS: Twenty-one articles focused on recruitment of African Americans to cancer clinical trials were reviewed. The trials were categorized into 4 types: screening (n=3), prevention (n=7), treatment (n=2), and recruitment trials (n=9). Barriers to recruitment were examined by type of trial and category of recruitment barrier. RESULTS: Results of this review indicated that recruitment barriers and strategies may be specific to the type of trial (i.e. screening, prevention, treatment, or recruitment). Sociocultural barriers, specifically mistrust and poor access, are the most frequently cited factors associated with nonparticipation of African Americans, regardless of trial type (19 [90.5%] of the 21 trials). Economic factors are the second most cited factor (13 trials [61.9%]), and were primarily associated with access to care. Eleven (52.4%) trials in this analysis identified individual barriers, including limited understanding of study procedures and personal benefit, and lack of trust in the medical community. Barriers inherent in study design were seen in less than half of the selected trials (47.6%). These barriers included excessively restrictive inclusion/exclusion criteria, complex forms and procedures, and location or setting of the trial.

BACKGROUND: Cancer mortality rates in the U.S. are almost 2.5 times higher for African Americans than for whites. Yet African Americans, in comparison to whites, are significantly underrepresented in cancer clinical trials, with non participation being

related to recruitment barriers. Our critical review of the literature assessed articles for their relevance to 4 types of recruitment barriers, based on the Swanson & Ward framework: sociocultural, economic, individual, and barriers inherent in study design.

The Swanson and Ward Model is a useful tool for conceptualizing and categorizing the types of barriers in recruiting minority populations. More research is needed to identify strategies that effectively address barriers to recruitment of African Americans.

CONCLUSIONS: Barriers to recruitment, as identified in this review, relate to disparities in health care access. In order for barriers to recruitment of minority populations to be addressed, disparities in healthcare access must be limited or eliminated.

Funding Sources: Centers for Disease Control and Prevention/National Cancer Institute, Department of Defense, National Institutes of Health

DE

THE PROCESS OF BREAST CANCER ADAPTATION AMONG KOREAN WOMEN: THE INFLUENCES OF CULTURE.

Eunyoung Suh, PhD, FNP, RN, Seoul National University, Seoul, Korea

The importance of psychosocial aspects of breast cancer has gained public attention recently in South Korea since more than 7,000 women is diagnosed with breast cancer each year and many of them live long as cancer survivors. Despite of the limited medical resources in Korea, as a developing country, not only physical treatment but psychosocial adaptation is considered imperative for successful coping with breast cancer.

No research to date has investigated how Korean women adapt themselves to a new life with breast cancer. This study thus was aimed to explore and describe the process of breast cancer adaptation among Korea women using a grounded theory methodology.

The Roy's adaptation theory and the symbolic interactionism were the theoretical underpinning of the study.

Twenty Korean women aged between 26 and 63 with breast cancer who underwent cancer treatment in a national cancer center participated in an individual face-to-face interview. Qualitative data were collected via interviews, participant observation, memos, and field notes. All interviews were conducted in Korean, tape-recorded, transcribed, and analyzed according to the grounded methodology. Open coding, axial coding, and theoretical sampling of the categories were proceeded in data analysis.

The overriding theme was accepting and enduring the transient (suffering or agony) with a lowered mind. The cancer experience was a kind of great suffering or agony in one's life, considered something being accepted and endured. In accepting reality, lowering life-expectation and clearing one's mind were stated important. Two subthemes were clear one's mind of distraction and live unboundedly as water flows down, and make up one's mind to accepting reality." The findings illustrate that the participants' processes of breast cancer adaptation are mediated by Korean cultural concepts such as lowering one's mind and enduring life-suffering. These adaptation processes, lowering and enduring are contrasted to the cancer coping process in western American culture, which is often expressed as overcoming or battling. The findings highlight that a patients successful adaptation to the life with breast cancer mandates the care providers culturally congruent awareness and understanding.

DF

INTERGENERATIONAL MISTRUST AND THE CANCER EXPERIENCE OF CONNECTICUT NATIVE AMERICANS.

Mary Canales, PhD, RN, University of Wisconsin Eau Claire, Eau Claire, WI; Diane Weiner, PhD, MPTN, Mashantucket, CT; Markos Samos, MS, Foxwoods Resort and Casino, Mashantucket, CT; and Nina Wampler, DSc, MPTN, Mashantucket, CT

Although cancer is the second leading cause of death among Native Americans, with some of the poorest cancer survival rates of any race/ethnicity nationwide, minimal in-depth nursing research has addressed the cancer experiences of Native Americans. Data that do exist are based primarily on investigations with Native Americans in the southwest and plains regions; cancer research with Native Americans in the northeast has been limited.

Northeast Native Americans experience substantial health, economic, and social disparities. Relative disadvantage in access to economic, technological, interpersonal, and community resources contributes to disproportionately poor cancer outcomes. Although more than 270,000 Natives live in the Northeast, nurse researchers have minimally explored their cancer experiences. This study begins to address this gap in the nursing science by presenting cancer perspectives of Native Americans residing in Connecticut.

A community-based participatory (CBP) framework guided the research. The CBP framework is especially appropriate for research with Native communities. The framework is compatible with cultural values and strives to involve communities throughout all phases of the research process. Strategies identified in the literature as critical factors when designing and implementing research with Native American populations were employed including community networking; inclusion of Native researchers as project team members; and the development and use of culturally-specific recruitment and advertisement materials.

Considering the undue cancer burden experienced by Native Americans and the lack of research exploring Northeastern tribal communities' cancer experiences, a qualitative investigation of Native Americans' cancer coping strategies and health education needs was undertaken. Employing CBP research techniques, data were collected through focus groups and individual interviews with over 70 Connecticut Native Americans. Thematic analysis was conducted, using N*Vivo software to manage and organize the data.

Relationships between intergenerational mistrust, individual mistrust, and utilization of conventional health care systems for CT Native Americans will be presented. Although trust is central to the nurse-patient relationship and the foundation for developing and maintaining connections to Native American communities, the concept of intergenerational mistrust related to health and health care delivery has not been explicated. Approaches for reducing mistrust and building relationships between nurses and Native communities will be highlighted.

Funding Sources: Lance Armstrong Foundation and National Cancer Institute

Podium Session 23: Nurse-Patient Relationship

DG

THE IMPACT OF EXCLUSION WHEN A PATIENT RECEIVES A CANCER DIAGNOSIS: A PHENOMENOLOGICAL EXPLORATION OF NURSES' EXPERIENCES.

Gerard Tobin, PhD, RN, MSc, BSC, RNT, University of New Hampshire, Durham, NH

Giving bad news to patients or caring for someone who has been given bad news is part of the fabric of healthcare professionals' everyday practice. Giving a cancer diagnosis is recognized as one of the most difficult responsibilities in healthcare and one which is often performed poorly. For the purpose of this research giving and receiving bad news related to giving and receiving a cancer diagnosis.

The purpose of the study was to explore the lived experience of giving and receiving a cancer diagnosis. The focus of this presentation is how exclusion from the communication of a cancer diagnosis impacts the nurse and the nurse-patient relationship.

The study was guided by Hermeneutic phenomenology. Hermeneutics aims to reveal meanings, and through reflective inquiry, provide an interpretation and understanding.

A written invitation was given to nurses randomly selected from a database held by the university and a sample of 20 nurses were chosen from those who expressed an interest in participating.

Data was collected using in-depth unstructured interviews, recorded digitally and analysed using analytic frameworks of Colazzi & Koch.

Rigor was seen as offering legitimacy to the study. Credibility was ensured through prolonged engagement in the field and persistent observation both of the data and findings. Peer debriefing with a group of independent researcher's ensured accuracy and provided a means of ensuring dependability and audibility throughout the process.

Two main themes emerged: 'Connectedness: Journeying as Professional' and 'Connectedness: Exclusion as Professional'. The themes separated out for the purpose of analysis and discussion, were intrinsically linked through a conceptual thread of connectedness and nurse-patient, nurse physician relationship. Findings reveal complex circumstances of medical and nursing roles that form the social and cultural expectations of 'hospital life'. Exclusion results in a form of prohibition, where the nurse cannot fully be there for the patient and provoked a sense of disempowerment.

The study highlights a need for role clarification within a multidisciplinary team and challenges the current separation of professional education and highlights the lack of understanding of each other's roles and contributions within the bad news scenario.

DH

CHALLENGES AND STRATEGIES FOR RECRUITMENT AND RETENTION OF VULNERABLE RESEARCH PARTICIPANTS: PROMOTING THE BENEFITS OF PARTICIPATION.

Robin Gemmill, RN, MSN, City of Hope, Duarte, CA; Anna Cathy Williams, RN, BS, City of Hope, Duarte, CA; Liz Cooke, RN, MN, APN, AOCN®, City of Hope, Duarte, CA; and Marcia Grant, RN, DNSc, FAAN, City of Hope, Duarte, CA

SNIP (Standardized Nursing Intervention Protocol) is an NCI-funded R01 grant in progress that provides an advanced practice nurse (APN) psycho-educational intervention at hospital discharge for hematopoetic stem cell transplant (HSCT) patients. Recruitment and 12 month retention (R&R) of this vulnerable population can present a multitude of challenges. The purpose of this abstract is to describe the process of R&R undertaken for this study.

Patients undergoing HSCT face significant physical, psychological, social, and spiritual stressors. While these challenges may impact their desire to participate in a study it can also be a source of growth. Utilizing Swanson's Theory of Caring Model as a framework for establishing a therapeutic relationship with the study participant, nurses involved in recruitment facilitate the patient's visualization of how enrolling in the study could present an opportunity to share their experience and further clinical insights. Retention of study participants by intervention nurses is enhanced by proficient use of key concepts of the model; maintaining belief, knowing, being with, doing for and enabling. Also patients are given an opportunity to appreciate how being on study could help them cope with the challenges and produce meaning of their experience.

Issues surrounding R&R of HSCT patients to this study include balancing the potential for psychological distress experienced by the future participant with achieving study goals, and maintaining study integrity through complete data collection during the study. Skillful communication and building immediate rapport with the transplant patient serve as building blocks for navigating the R&R process.

Employing the basic concepts of caring in study R&R is what nurse researchers do. Empowering vulnerable HSCT patients to tell their story, be validated and respected for their courage to share their experience through participation in a clinical research study provides meaning and a sense of well-being for the HSCT patient, and a sense of satisfaction for the nurses.

The key to successful study R&R of vulnerable study participants is establishing a healing relationship. Skillful and conscientious use of the Theory of Caring Model enhances the chance of effective study accrual and retention.

DI

NURSES RESPONDING TO EMOTIONAL CUES OF CANCER PATIENTS.

Ruud Uitterhoeve, PhD, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; Jozien Bensing, Netherlands Institute for Health Services Research, Utrecht, Netherlands; and Theo van Achterberg, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

It is broadly recognized that physician/nurse-patient communication needs improvement. Literature shows that Communication Training Programs (CTP) improve nurses' communication skills, but hardly affect patient outcomes. One reason why CTP do not result in positive changes in patient outcomes, involves the lack of theoretically grounded links between, training aims, training content, behavioral and patient outcomes. This study focuses on the theoretical link between behavioural and patient outcomes. The purpose of this study is to find evidence for the clinical significance of cue responding.

Paul Ricoeur's (1913-2005) phenomenological hermeneutics forms the philosophical base of conceive patient-nurse communication as a-meaning-finding activity. We used the conceptual framework for patient-provider communication by Feldman-Stewart et al to conceptualize communication as a process, in which messages are conveyed and interpreted, i.e. cue responding.

We conducted an explorative study, recruiting nurses (N=34) and patients (N=100) from seven oncology inpatient clinics. The data were collected between February 2006 and February 2007. One hundred patient-nurse conversations were video-taped. Patients' expression of emotional cues and nurses' cue responses were coded using the Medical Interview Aural Rating Scale (MIARS). Data were analysed with a mixed model analysis to examine whether the nurses' cue-responding behaviour was related with patient satisfaction with the conversation.

Results showed that cue responding independently relates to patient satisfaction with communication. Patients' age was not of influence, while palliative treatment independently contributed to patient satisfaction with communication. It appeared that curatively treated patients have other, less attention demanding, types of worries and concerns. Unexpectedly, results showed that cue responding and patient satisfaction were moderately correlated. A possible explanation is that the coding of cues was limited to emotional cues.

This study provides evidence that patients appreciate cue responding. Future studies might focus on the effect of improved cue responding on more distal patient outcomes. We recommend to extend the MIARS with behavioural categories to code cues that signal a need to conceal emotion or a need for information / to actively participate in decision making or, conversely, to refrain from that right.

DJ

THE CONNECTEDNESS-VIGILANCE ADVANTAGE: UNTAPPED RESOURCES FOR CANCER CARE.

Celeste Phillips-Salimi, RN, CPON®, Indiana University School of Nursing, Indianapolis, IN; Wendy Carter Kooken, RN, Indiana University School of Nursing, Indianapolis, IN; and Joan E. Haase, PhD, RN, FAAN, Indiana University School of Nursing, Indianapolis, IN

Two concepts, connectedness and vigilance, are frequently identified in the literature as key to providing timely and accurate diagnoses, facilitating meaningful humanistic care, and preventing negative health outcomes.

Despite the documented importance of these concepts, little research has been done on the ways in which cancer patients and/or oncology nurses become connected or practice vigilance. The

purpose of this paper is to describe experiences of connectedness and vigilance, and their interrelatedness, from the perspectives of oncology patients and nurses.

Empirical phenomenology methods were used in two qualitative studies.

The inter-relatedness of these concepts became apparent during analysis of each and was further examined for relatedness across three purposive samples in the studies: young adult cancer survivors who were diagnosed during adolescence (N = 10) to examine connectedness with healthcare providers, and adult cancer patients (N = 7) and oncology nurses (N = 7) to examine vigilance. All interviews were done using open-ended data generating questions and were analyzed using Colaizzi's method.

Findings indicate that patients perceive nurses who know them well as individuals are more vigilant; and, when nurses are vigilant, patients are able to conserve emotional energy and feel protected, respected, and connected. Nurses' data confirm and explain patient perceptions. Nurses who purposely connect with patients gain the knowledge necessary to more readily identify 'different than normal', thus, allowing the nurse to respond quickly to things that could threaten patient health or well-being and decrease error potential. Reciprocally, patients perceive that vigilance fosters a sense of connectedness when providers: acknowledge non-verbal cues of symptom distress; offer assistance with health/personal needs; and make even small efforts to enhance their quality of life while in the hospital. Benefits of connectedness include a sense of trust, comfort, gratitude, appreciation, and security with providers that make patients more likely to engage in care partnerships and effective self-management during treatments and into survivorship. When there is no connectedness or a disconnection with providers, a door shuts: there are feelings of helplessness and vulnerability, anger and resentment, and reluctance to connect with providers for cancer prevention vigilance.

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Podium Session 24: Screening

DK

ARE THERE DIFFERENCES IN CERVICAL CANCER SCREENING BELIEFS BETWEEN OLDER AND YOUNGER KOREAN AMERICAN WOMEN?

Eunice Lee, PhD, RN, University of Illinois at Chicago College of Nursing, Chicago, IL; and Young Eun, PhD, Gyeongsang National University, Jinju, Korea

Cervical cancer screening rates among Korean American (KA) women are low, especially among older KA women, while cervical cancer incidence and mortality are higher for them than for white women in the U.S.

The purpose of this paper is to compare beliefs about Pap testing between older and younger KA women in order to understand the different screening rates between the two age groups.

This study is guided by the Health Belief Model (HBM).

This is a cross-sectional, descriptive study using telephone survey method. Participants were189 KA women 40 years of age or older: 72 women were 65 years of age or older (mean age = 75, ranging 65–90 years) and 117 women were less than 65 years of age (mean age = 51, ranging 40–64 years). Descriptive and chi-square statistics were used to compare the two age groups on dependent and independent variables. Stepwise logistic regression analysis with Wald statistics were used to determine which variables significantly predict the outcome of up-to-date Pap tests (tested in the preceding 3 years) in each group of the women.

Older KA women were significantly less likely to have had a Pap test (67%) and had an updated one (44%) than younger KA women. Among older women, screening and perceived benefits and barriers of having a Pap test were found to be associated with the up-to-date Pap tests. For younger women, education, a regular place for health care, screening, and perceived barriers to having the test were related to the outcome variable. Older women who had higher level of barriers were almost 11 times more likely to have updated Pap tests than women had a lower level of barriers. In both age groups, KA women who had a screening in both age groups were 6–7 times more likely to have updated Pap tests. While assisting KA women to receive routine screening would increase Pap testing for both age groups, intervention for older women should focus on changing perceived benefits and barriers to receiving Pap tests.

Funding Source: National Institute of Nursing Research Mentored Research Scientist Development Award (K01 NR 08096)

DL

FACTORS INFLUENCING THE PROSTATE CANCER SCREENING BEHAVIOR IN AFRICAN AMERICAN MEN.

Lixin Song, RN, University of Michigan School of Nursing, Ann Arbor, MI; Rebecca Letho, PhD, University of Michigan School of Nursing, Ann Arbor, MI; and Karen Stein, PhD, RN, FAAN, University of Michigan School of Nursing, Ann Arbor, MI

African-American men have the highest prostate cancer incidence and mortality. Prostate cancer screening has resulted in early detection and opportunity for cure. African-American men have lower comparative screening rates to other ethnic groups which contribute to more advanced disease presentation and subsequent lower treatment success. There is a need to identify factors that affect African-American men's screening behaviors for the design of culturally-appropriate interventions.

This research aimed to determine whether certain demographic factors (age, education, presence of health insurance, marital status), socio-ecological constructs (trust in physician, stress-coping with environment), and individuals' health behaviors and values affect African-American men's Prostate cancer screening behavior.

The Social-Ecological Model of Health Education and Promotion was used to guide the research.

A descriptive cross-sectional design was used. Sixty African-American adults were recruited from Midwest suburban areas. A set of questionnaires including the John Henryism Scale for Active Coping, the Trust in Physician Scale, and the Health Behaviors and Values Questionnaire were used to measure the variables of interest. Descriptive statistics and Logistic Regression analyses using backward stepwise method were conducted to achieve the aim of the research.

The odds of men 50 years and older having obtained prostate cancer screening were about 32 times higher than those younger than 50 years of age. The odds also increased by about 32% for men who had one unit increase in their health behavior and values measure.

Future intervention programs among African-American males that promote screening must target younger adults and strategies that address general health behaviors and values.

Funding Sources: The MESA Center for Health Care Disparities, National Institute for Nursing Research, administered by the University of Michigan School of Nursing

DM

LATENT CLASS ANALYSIS TO IDENTIFY BEHAVIORAL RISK FOR NONADHERENCE TO COLON CANCER SCREENING AMONG AFRICAN AMERICAN MEN.

Usha Menon, PhD, RN, University of Illinois at Chicago, Chicago, IL; Rhonda Belue, PhD, Pennsylvania State University, State College, PA; Laura Szalacha, EdD, PhD, University of Illinois at Chicago, Chicago, IL; Stephanie Wahab, PhD, Portland State University, Portland, OR; and Anita Kinney, PhD, APRN, University of Utah, Salt Lake City, UT

African American (AA) men are at the highest risk for mortality from colorectal cancer (CRC), and yet, AA men also have very low screening rates.

Purpose: In this study, using latent class analysis, we identified groups of AA men at high and low behavioral risk for screening nonadherence.

Measures: Validated measures on CRC screening related self-efficacy (SE), benefits and barriers, knowledge, perceived risk, trust in provider, and screening history were used based on the Health Belief Model.

Methods: Data were from baseline interviews of a 5-year, RCT designed to increase CRC screening.

Analysis: We fit LCA models to summarize behavioral risk and protective factors (high knowledge, SE, benefits, risk and trust, and low barriers) related to past use of screening tests, and LCA regression models to assess the significance of behavioral risk group and screening history.

Sample: A subset of 260 AA men, with a mean age of 56.2; 45% reported some college education, 33% were single, and 82% were not employed.

Results: Risk groups were: high, moderate high, moderate low, or low risk for nonadherence with screening. Four LCA models provided the best fit across the three screening tests. AA men at highest risk for not being screened by colonoscopy (34%) had low knowledge, SE, benefits, risk, and trust, and high barriers. For stool blood tests, 42% of men fell into high risk for not having the test. In contrast, only 10% of men were at high risk for sigmoidoscopy nonadherence; the majority were at moderate risk (55%). Latent class structure (controlling for age) was related only to endoscopy screening. Men nonadherent with colonoscopy screening were 8 times more likely to be in a high risk group compared to moderate or low risk groups ($p<.05$). Similarly, for sigmoidoscopy, men who have never been screened were 2.8 times less likely to be in the high risk group ($p<.05$).

Conclusions: There is potential for clustering individuals into behavioral risk groups and targeting interventions relevant to their risk for not getting screened. AA men at higher risk for not getting screened may need interventions focused on addressing the relevant beliefs that would move them into lower risk groups.

Funding Source: National Institutes of Health: R01 NR008425

DN

FACTORS CONTRIBUTING TO CANCER SCREENING IN AFRICAN AMERICANS.

Carol Ferrans, PhD, RN, FAAN, UIC College of Nursing, Chicago, IL; Catherine Ryan, PhD, RN, University of Illinois at Chicago, Chicago, IL; Laura Archer, MS, Duke University Medical Center, Durham, NC; Sally Freels, PhD, University of Illinois at Chicago, Chicago, IL; Lan Lan, PhD, Duke University Medical Center, Durham, NC; Electra Paskett, PhD, Ohio State University, Columbus, OH; and Alice Kornblith, PhD, Dana-Farber Cancer Institute, Boston, MA

To address racial disparities in cancer mortality, the factors affecting regular participation in screening need to be identified.

The purpose of this study was to identify variables that influence participation in regular cancer screening in African Americans, both in cancer survivors and the general population (non-cancer controls).

This study was guided by the adaptation model developed for cancer survivors by Kornblith.

For this descriptive, case-control study of African Americans (500 cancer survivors, 512 non-cancer controls), the survivor group included breast (n=214), prostate (n=197), and colon cancer (n=89) survivors from 16 CALGB institutions throughout the country, who were essentially cancer free and had completed primary treatment at least 3 years earlier. Non-cancer controls were selected via random digit dialing and were matched as a group to the survivors, so the two groups were similar in ethnicity, gender, education, and city of residence. Multiple regression modeling was used to evaluate the contribution of 14 variables to cancer screening participation. All variables were measured with well-established, reliable and valid instruments.

An unadjusted comparison showed that the cancer survivors participated more frequently in cancer screening tests than the non-cancer controls ($p = .0005$). Participation in screening was explained by six variables: female gender, greater trust in their physician, having health insurance, college education, city of residence, and lower urban life stress. All contributed to more frequent screening. The strongest predictors were gender and trust in physicians ($p< .0001$), which together explained 11% of the variance. After controlling for these six variables, the participation of cancer survivors in cancer screening was still significantly higher than the controls ($p = .04$). Conclusions: Trust in the patient's own physician was one of the strongest variables associated with screening for both African American cancer survivors and those who never had cancer. Since trust can be directly influenced in clinical practice, these findings suggest future work to facilitate the development of trust, particularly for African American men.

Funding Source: NIH National Cancer Institute R01 CA89418

Podium Session 25: Symptoms/Symptom Management

DO

PREDICTORS OF ARM MORBIDITY (PAIN, FUNCTIONAL DISABILITY, RANGE OF MOTION, LYMPHEDEMA) FOLLOWING BREAST CANCER SURGERY.

Tom Hack, PhD, Faculty of Nursing/Cancer Nursing Research, Winnipeg, Canada; Roanne Thomas-MacLean, University of Saskatchewan, Saskatoon, Canada; Winkle Kwan, BC Cancer Agency, Surrey, Canada; Anna Towers, McGill University, Montreal, Canada; Bo Miedema, Dalhousie University, Fredericton, Canada; Andrea Tilley, Atlantic Health, Fredericton, Canada; and Dan Chateau, University of Manitoba, Winnipeg, Canada

Nurses in breast oncology frequently advise and counsel women with respect to arm problems following breast cancer surgery. The findings of this study will better prepare these nurses for advising women about the risk factors for specific arm problems associated with the surgery.

The purpose of this national study was to examine demographic, disease, and treatment-related predictors of arm morbidity following surgery for breast cancer.

By identifying the multiple risk factors for arm morbidity using a large, representative sample of women, health practitioners will be better equipped to prevent and treat these arm problems.

Three hundred and sixteen women with a non-metastatic primary diagnosis of cancer participated. Women were accrued from cancer centres in four Canadian cities - Vancouver, Winnipeg, Montreal, and Fredericton - and were assessed between 6 and 12 months post-surgery. The predictor variables included: Surgery Type, Node Dissection Type (Sentinel Node Biopsy (SNB) w/o Axillary Node Dissection; Sentinel Node Biopsy with Axillary Node Dissection; Axillary Node Dissection w/o Sentinel Node Biopsy), Stage of Disease, Presence of Post-operative Infections, Radiation to the Axilla, Body Mass Index (BMI), Assessment Time Post-surgery, Education, and Partner status. The dependent variables included: Pain (McGill Pain Questionnaire-MPQ), Functional Disability (Disability of Arm/Shoulder/Hand-DASH), Range of Motion (External rotation of shoulder; Shoulder abduction), and Lymphedema (Excess arm volume). A MANOVA and univariate and logistic regression analyses were performed on the data.

The results of the MANOVA showed that pain was significantly worse for those who received both sentinel node biopsy and axillary dissection, those with stage III disease, those without a partner, and those with a high BMI. Functional Disability was significantly predicted by disease stage, post-op infections, and BMI. Those having mastectomy and those with post-op infections had significantly less range of motion. Lymphedema was significantly predicted by stage of disease, with surgery, dissection type, and BMI marginally significant. These findings highlight the need to improve the accuracy of the SNB procedure with the hope of eliminating the practice of dual (both SNB and axillary node dissection) surgeries so that patients

receive only SNB and realize the associated reductions in pain and lymphedema.

Funding Source: Canadian Institutes of Health Research

DP

SYMPTOM PROFILE AS A PROGNOSTIC FACTOR IN PATIENTS WITH LUNG CANCER RECEIVING CHEMOTHERAPY.

Mei-Ling Chen, RN, PhD, Chang Gung University, Tau-Yuan, Taiwan; and Chien-Hui Yang, RN, MS, Chang Gung University, Tao-Yuan, Taiwan

Different patients subgroups based on their symptom profiles have been successfully identified in literature. However, whether patients with different symptom profiles have different survival outcome is unknown.

The purpose of this study was to identify subgroups of lung cancer patients based on their symptom presentation on four symptom clusters and to examine the differences of survival time among identified patient subgroups.

This study based on the Theory of Unpleasant Symptoms in which existence of multiple symptoms and its relationship to outcomes was indicated.

Eight-five newly diagnosed patients with stage III or IV lung cancer were recruited in this study. Four symptom clusters based on previous research were selected: sickness symptom cluster, gastrointestinal symptom cluster, emotional symptom cluster, and respiratory symptom cluster. After patients finished their first cycle of chemotherapy, distress levels of the above four symptom clusters were assessed using the Memorial Symptom Assessment Scale-Short Form (MSAS-SF). Patients were followed up for one year. Hierarchical cluster analysis was applied to identify patients with similar profiles on the four symptom clusters. Cox proportional hazard model was applied to test the differences of survival time among the identified patient subgroups.

Four patient subgroups were identified. Group I patients (n = 50) were characterized by having low distress levels on all four symptom clusters. The Group II patients (n = 10) had high distress levels on respiratory cluster and moderate distress levels on sickness cluster. The Group III patients (n = 9) were those with high distress levels on gastrointestinal cluster but low on the other three clusters. Patients in Group IV (n = 16) reported high distress levels on sickness, emotional, and respiratory clusters. Patients in different groups differed in age, gender ratio, use of medications, number of experienced symptoms, and functional performance status. After controlling for disease stage, gender and age, patients in Group IV had significantly less one-year survival time than patients in other groups.

The findings suggested that assessment of symptoms at early phase of chemotherapy may help to predict survival time in patients with lung cancer. For patients with high risk of early death, proper intervention should be developed.

Funding Source: National Science Council, Taiwan (Grant Number: NSC-96-2314-B-182-006)

DQ

LEARNING TO KNOW HOW TO BE: SELF MONITORING, DECISION MAKING AND COMMUNICATING NEUTROPENIA-RELATED SYMPTOMS IN OLDER ADULTS WITH CANCER.

Margaret Crighton, PhD, RN, University of Pittsburgh School of Nursing, Pittsburgh, PA; Catherine Bender, PhD, RN, University of Pittsburgh School of Nursing, Pittsburgh, PA; Mary Beth Happ, PhD, RN, University of Pittsburgh School of Nursing, Pittsburgh, PA; Annette DeVito Dabbs, PhD, RN, University of Pittsburgh School of Nursing, Pittsburgh, PA; and Cheryl Tomplins, MSN, RN, University of Pittsburgh School of Nursing, Pittsburgh, PA

Early identification of signs and symptoms of infection and prompt medical evaluation are crucial to prevent prolonged hospitalization and death in neutropenic cancer patients.

Signs and symptoms of infection in older patients are often subtle and atypical, making this population particularly vulnerable to delayed medical evaluation. Neutropenia - related self monitoring, decision making and communication are essential for effective management of infections in older adults yet how these patients carry out these behaviors is not known. The purpose of this grounded theory study is to describe and explain neutropenia-related self monitoring, decision-making and communication with clinicians.

Data collected weekly from interviews with older hospitalized cancer patients, family members and clinicians, chart review, and participant observation underwent constant comparative analysis. Within the grounded theory paradigm, quantitative data from the medical record (absolute neutrophil counts) and symptom measures (Profile of Mood State; Memorial Symptom Assessment Scale) administered weekly were analyzed using descriptive statistics and graphic representation to describe symptoms and their relationship to narrative data.

Participants'neutropenia - related symptom monitoring, decision making and communication were characterized by a process of "learning to know how to be". "Feeling the fever [or not] and doing something about it" was influenced by neutropenia instructions participants received, their past experience with fever, neutropenia values, and routine self monitoring of comorbid disease. Patients made decisions about communicating based on a "personal index of susceptibility". Despite temperatures more than 1.8°F over baseline patients did not notify clinicians, partly because temperatures did not reach 100.5°F, the "fever" they were instructed to report. Family members played supplementary and compensatory roles in symptom monitoring, decision making and communication with clinicians. Each cycle of chemotherapy augmented participants' knowledge of "how to be" during neutropenia, but nonetheless consequences included delayed communication with clinicians and unplanned hospitalization. Preliminary findings shed light on behaviors that precede clinical evaluation of neutropenia related symptoms. Recommendations for research and practice are aimed at improving self monitoring, decision making and communication about neutropenia related symptoms to ensure that those patients who warrant evaluation receive it expeditiously.

Funding Source: ONS Foundation

DR

TREATMENT RESPONSE AND TOXICITY MANAGEMENT OF DOSE DENSE XELODA IN REFRACTORY PATIENTS WITH METASTATIC ADENOCARCINOMA.

Mary Daehler, RN, CRNI, OCN®, MS, Midwestern Regional Medical Center, Zion, IL; Robert Levin, MD, Midwestern Regional Medical Center, Zion, IL; James Grutsch, PhD, Midwestern Regional Medical Center, Zion, IL; Candi Pfeiffer, BSN, RN, Midwestern Regional Medical Center, Zion, IL; and Jessica Kapustin, BSN, RN, Midwestern Regional Medical Center, Zion, IL

There is a balance between toxicity and tumor response.

Innovative strategies to decrease side effects while maintaining dose intensity has potential patient benefit.

The theory of dose dense therapy is based on dose intensity which is achieved by decreasing the cycle interval while maintaining scheduled dose. This hypothesis predicts decrease tumor regrowth. Aggressive suppurative strategies improve patient compliance and tolerance. Allopurinol mouthwash is a known prevent stomatitis. Xeloda is hypothezed to induced palmar planter erythrodysesthesia (PPE). The drug concentration in the sweat glands of the palms and soles becomes the basis of prophylactic use of antiperspirant.

Thirty-three standard treatment refractory patients with performance status of less then two participated in a trial of dose dense Xeloda. Xeloda was administered for five days q 14 days in divided doses of 5000mg/m2. Instructions were to swish, swirl and spit 15 ml of Allopurinol mouthwash 30 minutes after each Xeloda

dose and repeat hourly times three. Patients were instructed to apply an antiperspirant to the palms and soles followed by the application of Bag Balm twice a day. Toxicities were accessed each clinic visit and tumor response was revealed by standard laboratory testing and radiology scans. Qualitative data was obtained by a standard question format.

Univariate survival analysis revealed that patients had a statistically significant better survival than other patients (Log Rank p = 0.03). The six month cumulative survival was 82% and a 25% failure rate occurred at 32 weeks. All but one patient had at least three cycles of therapy and ten patients had five or more cycles. Grade three stomatitis occurred in cycles two and three in patients not taking Allopurinol mouthwash. Following the introduction of Allopurinol mouthwash the highest grade stomatitis was one. One patient experienced a grade 4 PPE in cycle 7 while another had a grade 3 PPE in cycle 3. Patients compliant with use of antiperspirant and Bag Balm had no greater then a grade 2 PPE. Acceptable toxicities were seen with supportive interventions. Tumor response was measured by tumor markers, and followup scans and self reported reduction of symptoms.

POSTER SESSIONS

Cancer Survivorship

1

REDUCED FEAR OF CANCER RECURRENCE: A MECHANISM OF MBSR IN BREAST CANCER SURVIVORS IN TRANSITION OFF TREATMENT. Cecile Lengacher, RN, PhD, University of South Florida, College of Nursing, Tampa, FL; Versie Johnson-Mallard, ARNP, PhD, University of South Florida College of Nursing, Tampa, FL; Shirley Fitzgerald, PhD, University of South Florida College of Nursing, Tampa, FL; Melissa Shelton RN, MS, University of South Florida College of Nursing, Tampa FL; Michelle Barta, BS, MPH, University of South Florida College of Nursing, Tampa, FL; and Kevin Kip, PhD, University of South Florida College of Nursing, Tampa, FL

Breast cancer survivors frequently experience residual symptoms, including fatigue, depression, pain, and sleep dysfunction. Few studies have tested interventions during the post-treatment survivorship period.

Mindfulness Based Stress Reduction (MBSR), a standardized form of meditation and yoga, may be effective in reducing symptoms in cancer survivors. However, little is known on mechanisms by which MBSR may be effective in cancer survivors.

The Biobehavioral Logic Model, a heuristic device for research, was used. We postulated that MBSR improves psychological and physical symptoms and quality of life by intervening (mediating) effects, including reduced fear of cancer recurrence.

A randomized controlled trial of MBSR was conducted among 84 female breast cancer patients (stages 0-III) who completed lumpectomy, radiation, and/or chemotherapy. Women were randomly assigned to a 6-week MBSR program or a wait-listed control group, and completed self-report measures of psychological and physical symptoms and general health status before and after completion of the program (6 week period). General linear models examined how changes in fear of cancer recurrence and perceived stress mediated positive clinical outcomes associated with MBSR.

Eighty-two of 84 patients (98%) completed the trial. Mean age was 57 (SD=9); 70% were treated for Stage 0/I breast cancer, and 39% had undergone radiation and chemotherapy. Overall, the MBSR program resulted in significantly lower ($p<0.05$) adjusted mean levels of depression, anxiety and fatigue at 6 weeks, along with better physical functioning compared to the usual care regimen. In mediation analyses, MBSR was associated with greater reductions in fear of recurrence ($p=0.008$); which were associated with lower levels of depression ($p=0.03$) and anxiety ($p=0.0004$) at 6 weeks. In contrast, lower levels of perceived stress did not appear to mediate the effectiveness of MBSR.

MBSR appears to lead to improved psychological status and quality of life among breast cancer survivors by lowering perceived fear of recurrence of cancer. This approach should be emphasized among breast cancer survivors, while evaluated in other cancer populations. Other potential mediators of MBSR, such as increased awareness and mindfulness, should be evaluated.

Funding Source: National Cancer Institute R21-Ca109168-01A2

2

PSYCHOSOCIAL ADJUSTMENT DURING THE POST-RADIATION TREATMENT TRANSITION. Susan Mazanec, MSN, RN, AOCN®, Case Western Reserve University, Frances Payne Bolton School of Nursing, Cleveland, OH; and Barbara Daly, PhD, RN, FAAN, Case Western Reserve University, Frances Payne Bolton School of Nursing, Cleveland, OH

Patients undergoing radiation therapy are especially vulnerable during the immediate post-treatment transition, the period from the last week of active treatment to one to three months after treatment. The literature indicates that patients deal with persistent and unpredictable treatment side effects, fatigue, nutritional problems, anxiety, uncertainty and emotional distress. And yet, during this transition, there is reduced access to the healthcare team and lack of resources for psychosocial support. Despite the potentially turbulent course of the post-radiation treatment transition, it is rarely described in the literature and there are few empirical reports describing characteristics of patients at high risk for a difficult transition.

To examine predictors of psychosocial adjustment during the post-radiation treatment transition in patients with breast, colorectal, lung and prostate cancer. Evidence suggests that cognitive appraisal predicts adjustment, yet this has not been studied in this population.

The underlying model for this study is the stress, appraisal and coping model by Folkman and Lazarus.

A predictive correlational design will test the relationship between stress appraisal and the outcome variable, psychosocial adjustment. The sample will consist of 120 patients. Subjects will complete the following surveys two weeks prior to the completion of treatment: the Cognitive Appraisal of Health Scale, Memorial Symptom Assessment Scale Short Form, Mishel Uncertainty in Illness Scale – Community Form, Charlson Comorbidity Index, Cancer Behavior Inventory Long Form, and Medical Outcomes Social Support Survey. Subjects will complete the Psychosocial Adjustment to Illness Scale – Self-Report version approximately one-month after radiation treatment is complete. The analysis will consist of descriptive statistics and a series of hierarchical multiple regressions.

This research will contribute to: (1) the description of the patient's experience post-radiation, (2) our understanding of cognitive appraisal and its importance in psychosocial adjustment after cancer treatment, and (3) the evaluation of the influence of self-efficacy and social support on adjustment. This study will provide information for the development of assessment and intervention tools for the healthcare team.

Funding Sources: Sigma Theta Tau International Small Research Grant; American Cancer Society Doctoral Degree Scholarship in Cancer Nursing

3

"YOU TRY TO HAVE A LOT OF HOPE" BREAST CANCER/LYMPHEDEMA SURVIVORSHIP AND MEANING-MAKING OF ILLNESS. Jennifer Dine, Lymphedema Research Project, Columbia, MO; and Jane Armer, University of Missouri-Columbia, Columbia, MO

As breast cancer survivorship rates improve, treatment sequelae will become increasingly prevalent within survivor populations. Secondary lymphedema of the breast cancer-affected side is one of the most prevalent, chronic, and devastating of these sequelae, impacting an estimated forty to eighty percent of breast cancer survivors both physiologically and psychologically, thereby holding increasing significance for oncology nursing. The physiological consequences of this comorbidity may be further compounded by the survivor's ongoing process of coming to terms with and accepting lifelong risk of lymphedema, in addition to the initial breast cancer diagnosis.

The purpose of this ethnographic study was to identify themes elicited from the narratives of South African breast cancer survivors with or without lymphedema and to compare those themes to those elicited from the narratives of American breast cancer survivors from a previously conducted ethnographic study in order to explore cultural differences in meaning-making of illness.

Armer's biobehavioral model of breast cancer lymphedema was employed to conceptualize the objective and subjective dimensions of lymphedema.

The semi-structured, open-ended Self-Management and Chronic Illness Interview Guide for Breast Cancer Survivors with Lymphedema was utilized to interview South African breast cancer survivors with lymphedema (n=2) and modified to interview those without lymphedema (n=2)on site in Bloemfontein, Free State, Republic of South Africa. Conventional content analysis was then implemented in the elicitation of themes and larger domains. Characteristics were then developed to describe each theme. Results were then compared to the content analysis of American women (n=64) in order to qualitatively evaluate cultural differences and similarities in meaning-making of illness.

Identified domains of South African women with or without lymphedema included social interactions; processing and evaluation of experiences in illness; finding purpose; and spirituality and metaphor. Themes were identified within the context of each larger domain. Themes elicited from survivors narratives were then compared to the results of a content analysis invovling participants from the United States. Results of the comparison suggest thematic similarity across groups, emphasizing spirituality and metaphor and social interactions.

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4

QUALITY OF LIFE OF AFRICAN AMERICAN CANCER SURVIVORS.

Carol Ferrans, PhD, RN, FAAN, UIC College of Nursing, Chicago, IL; Catherine Ryan, PhD, University of Illinois at Chicago, Chicago, IL; Laura Archer, MS, Duke University Medical Center, Durham, NC; Sally Freels, PhD, University of Illinois at Chicago, Chicago, IL; Lan Lan, PhD, Duke University Medical Center, Durham, NC; Electra Paskett, PhD, Ohio State University, Columbus, OH; and Alice Kornblith, PhD, Dana-Farber Cancer Institute, Boston, MA

Studies have provided limited information about health disparities in cancer survivors, due to small proportions of African American participants.

The purpose of this study was to identify differences in quality of life between African American cancer survivors and African Americans who have not had cancer, to determine the prevalence of cancer-related problems and their effects on quality of life.

The adaptation model developed for cancer survivors by Kornblith guided this study.

For this descriptive, case-control study of African Americans (500 cancer survivors, 512 non-cancer controls), the survivor group included breast (n=214), prostate (n=197), and colon cancer (n=89) survivors from 16 CALGB institutions throughout the country, who were essentially cancer free and had completed primary treatment at least 3 years earlier. Non-cancer controls were selected via random digit dialing and were matched as a group to the survivors, so the two groups were similar in terms of ethnicity, gender, education, and city of residence. Multiple regression modeling was used to evaluate the contribution of 14 variables to quality of life. All variables were measured with well-established, reliable and valid instruments.

Ten variables explained 66% of the variance in quality of life. The cancer survivors had significantly more comorbidities ($p<.0001$), sexual problems ($p<.0001$), and worse physical functioning ($p=.002$) than non-cancer controls. Survivors experienced persistent problems attributed to cancer and its treatment, as well as higher incidence of diseases commonly associated with aging, such as arthritis, hypertension, heart disease, and osteoporosis. Nevertheless, the survivor group reported greater satisfaction with their lives in general ($p=.02$). They also reported less urban life stress ($p<.0001$), better social support ($p=.04$), and felt less hostility toward others ($p=.002$). The non-cancer group participated less frequently in cancer screening ($p=.0004$), were more distrustful of physicians ($p<.0001$), and believed more cancer myths ($p<.0001$). Conclusions: Although the cancer survivors experienced a greater physical burden in terms of comorbidities and physical functioning, they were more satisfied with their lives overall and reported more positive social relationships. For the non-cancer group the combination of cancer myths, distrust of physicians, and lower participation in screening suggests areas for future interventions to improve cancer detection in African Americans.

Funding Source: NIH National Cancer Institute R01 CA89418

5

RESEARCH FOCUSED MULTIDISCIPLINE TEAM EDUCATION HELPS SHAPE SURVIVORSHIP PROGRAMS.

Marcia Grant, RN, DNSC, FAAN, City of Hope, Duarte, CA; Denice Economou, RN, MN, AOCN®, City of Hope, Duarte, CA; Betty Ferrell, PhD, FAAN, City of Hope, Duarte; CA; and Smita Bhatia, MD, MPH, City of Hope, Duarte, CA

Providing survivorship care for over 11 million cancer survivors in this country is accepted as the new standard of care. Like palliative care additional education and support is needed to develop this knowledge and incorporate it into the continuum of care.

The Institute of Medicine 2006 report recommended education as needed to improve survivorship care. This NCI funded study provides 4 yearly courses addressing professional education and goal directed follow up to provide outcomes data evaluation for program impact.

Using adult learning principles and the City of Hope quality of life model focusing on the four domains of care, survivorship education is provided by expert faculty with continued consultation as needed. The IOM report recommendations and the National Action Plan for Cancer Survivorship supported by CDC and Lance Armstrong Foundation provide the research framework for course content.

Two person multidisciplinary teams are competitively chosen to attend. Three goals per team are developed during the course. Evaluation data includes team composition, type of institution, changes in institutional barriers, goal success at 6, 12 & 18 months, and institutions survivorship philosophy. Institutional assessments help to define available resources and identify program strengths or deficits to focus program growth specific to their institution.

Data from first & second year participants, baseline and 6 months will be compared. One hundred and two teams attended, representing multiple disciplines and 35 States. Primary barriers identified for baseline and 6 months for 2006 and 2007 were lack of survivorship knowledge (76.9% versus 88%), and at 6 months, financial constraints was primary (66% versus 35%). Goals were classified as structure, process or outcome focused. Goal percent of achievement was scored by participants. Goals focused on Process which included education of staff, physicians, patients and families. Developing care plans or care summaries was more

prevalent in the 2007 teams (13% versus 8%). This may be due to the increasing priority of survivorship care. This innovative educational program with models of excellence and expert faculty interactions helps individual teams identify their focus and develop appropriate goals to be evaluated formally and has helped participating institutions progress in survivorship care.

Funding Source: NCI R25 CA 107109 Survivorship Education for Quality Cancer Care

6

FEAR OF BREAST CANCER RECURRENCE IN AFRICAN-AMERICAN AND CAUCASIAN BREAST CANCER SURVIVORS.

Kim Ziner, RN, PhD, Indiana University, Indianapolis, IN; Kathleen Russell, RN, DNS, Indiana University, Indianapolis, IN; Victoria Champion, RN, DNS, Indiana University, Indianapolis, IN; and Kathy D. Miller, MD, Indiana University, Indianapolis, IN

Fear of breast cancer recurrence (FR) affects 55-90% of breast cancer survivors. Oncology nurses care for survivors as they experience and express these fears.

Although FR has been recognized as a prevalent psychosocial consequence of surviving cancer, the majority of what is known about FR has been studied in Caucasian breast cancer survivors. Furthermore, little is known about what survivors worry about when they think of a recurrence. The purpose of this study was to compare FR and worries related to thoughts of recurrence between African-American (AA-BCS) and Caucasian breast cancer survivors (C-BCS).

Emotion theorist, such as Lazarus suggest that fear is an emotional response to an identifiable event that is perceived as harmful.

This study was a secondary analysis of a quality of life of AA-BCS and C-BSC using a cross-sectional survey design. All 135 participants (63 AA-BCS and 72 C-BCS) were 18 years old or older, diagnosed 2 to 10 years ago and stage I, II or III at diagnosis. Measures. Concerns about recurrence scale. The CARS has a fear of recurrence index (FRI) and four subscales about worry when thinking about recurrence (health, womanhood, role, death). Analysis. ANCOVA controlling co-variates and testing for differences in mean scores between AA-BCS and C-BCS. The CARS had an acceptable to good reliability for AA-BCS (.92-.87) and C-BCS (.75-.93).

There was no significant difference in FRI between AA-BCS (mean 9.8) and C-BCS (mean 11.5). Health worries ($p = .018$, AA-BCS (Mean 1.1), C-BCS (Mean 1.6), Role worries ($p = .05$, AA-BCS (Mean .8), C-BCS (Mean 1.2) and Death worries ($p = .011$, AA-BCS (Mean 1.3), C-BCS (Mean 2.1) were significantly different. No significant differences were found between AA-BCS and C-BCS on womanhood worries.AA-BCS and C-BCS were equally afraid of a recurrence but except for womanhood worries, AA-BCS had lower mean worries than C-BCS. Understanding the underlying worries related to overall fear of recurrence can lead to more focused and perhaps effective nursing intervention for AA-BCS and C-BCS.

Funding Source: 1R03 CA97737African American Breast Cancer Survivors Quality of Life

7

HEALTH DISPARITIES IN CANCER SURVIVORSHIP: A RESEARCH OPPORTUNITY.

Julie McNulty, RN, MSN, Alaska Native Medical Center, Anchorage, AK; and Lillian Nail, PhD, RN, FAAN, Oregon Health & Science University, Portland, OR

Research on the impact of health disparities in cancer survivors is in an early stage. Issues relevant to health disparities research in cancer survivors include being a member of a racial/ethnic minority group, place of residence (rural/urban), socioeconomic status, and availability of cancer care. Challenges for minorities and rural dwelling adults, methodologic issues encountered in examining health disparities, and specific considerations for the design and conduct of health disparities research with cancer survivors will be presented.

When rural dwellers are included in studies, they are often not analyzed separately or compared with other groups. Rural survivors may experience lack of symptom management, isolation, decreased coping, and decreased access to specialty services. Many are displaced from their communities during treatment, and they face many challenges when they return.

Sources of health disparities in cancer have not been completely explained. Minorities, those of lower socioeconomic status, and the medically underserved are less likely to be represented among cancer survivors, as well as included in survivorship research. The economically challenged are less likely to be insured, have less access to healthcare, may be uninformed about their health status, may present at later stages of disease progression and have poorer outcomes.

More diverse samples are needed, as well as research questions that address strategies to ameliorate specific cancer survivor health disparities. Some strategies include; over sampling of minority and rural populations, utilizing community based participatory research designs, and ensuring that instruments and frameworks are tested and adapted in these populations. There is an opportunity to increase awareness, expand access to resources, and influence the development of survivorship programs to address health disparities among cancer survivors.

The under representation of these populations in survivorship research raises the concern that all voices of survivors are not being heard. This creates a gap in knowledge and impedes progress on addressing the needs of populations of survivors who experience health disparities.

8

THE CONTENT AND STRUCTURE OF ONCOLOGY OFFICE VISITS DURING BREAST CANCER SURVIVORSHIP.

Margaret Clayton, PhD, APRN, College of Nursing, University of Utah, Salt Lake City, UT; and William Dudley, PhD, University of North Carolina, Greensboro, NC

Significance: Most breast cancer survivors have episodic thoughts about cancer recurrence and uncertainty about the future, triggered by events such as routine medical office visits.

Problem and Purpose: Follow-up visits are important to breast cancer survivors, but little is known about the temporal visit structure and content of communication interactions during these visits. This study qualitatively evaluated the content of survivor-provider communication, assessed allocation of time, and investigated when discussions took place relative to the visit sequence.

Theoretical Framework: Uncertainty theory suggests that communication with providers reduces uncertainty by providing information about experienced symptoms. Patient-centered communication theories suggest this approach improves patient outcomes.

Methods and Analysis: Design: A descriptive secondary analysis using previously recorded interactions between 55 breast cancer survivors and six providers during routine follow-up oncology visits. A thematic content analysis was conducted by the two primary researchers to discover discussed topics, guided by the dimensions of patient-centered communication (illness, contextual, planning). Existing digital time stamps were used to evaluate time. Measures: Survivors: demographics, uncertainty, length of survival, specificity of expectations. Providers: demographics, specialty (MD, NP, PA). Outcomes: time spent in patient-centered communication dimensions, survivor perceptions of patient-centeredness. Analysis: Correlations and regression analyses. (Internal consistency in the original study was acceptable for all measures.)

Findings and Implications: Most visit time (55%) was spent waiting. Of the remaining 45%, silence occupied the most time spent with a provider, followed by symptom related conversations. More specific survivor plans for discussion predicted more time discussing symptoms and seeking reassurance about cancer recurrence. More specificity of visit purpose predicted a survivor perception of less patient-centeredness, yet more time in person-focused contextual

conversations predicted a greater perception of patient-centeredness. Provider factors were not significant in predicting survivor perceptions. All dimensions of patient-centered communication occurred during each visit section (before, during, and after the physical exam). When visit expectations are not met, survivor perception of patient-centeredness is decreased. However, time spent understanding a survivor within the context of her life enhances survivor perceptions of patient-centeredness. Providers must be sensitive to individualized concerns that are presented throughout a visit.

Funding Source: College of Nursing, University of Utah

Challenges for Caregivers and Families

9

CHARACTERISTICS OF MALE CAREGIVERS OF PATIENTS WITH ADVANCED CANCER. Helen Foley, RN, MSN, Case Western Reserve University, Cleveland, OH; Barbara Daly, PhD, RN, FAAN, Case Western Reserve University, Cleveland, OH; Sara Douglas, PhD, RN, Case Western Reserve University, Cleveland, OH; and Amy R. Lipson, PhD, Case Western Reserve University, Cleveland, OH

A great deal of research has been done to investigate the effect the caregiving experience has on family members who are providing care to a loved one with cancer. Caregiving is often associated with role tasks of women in today's society. Little attention has been paid to the experiences of male caregivers and thus it is not known whether interventions need to be tailored to meet unique needs of men who have assumed caregiver responsibilities.

Most research on caregiving burdens and benefits has been conducted with predominantly female subjects. The purpose of this study is to examine the characteristics of male caregivers of patients with advanced cancer and compare these to female caregivers.

The conceptual frameworks underlying this study were drawn from Betty Ferrell's quality of life model and the Given's model of caregiver burden.

Newly diagnosed patients with cancer receiving treatment at a Comprehensive Cancer Center and their caregivers were invited to participate in a psychosocial data registry. A sample of 233 caregivers (89male, 144 female) were enrolled. A variety of instruments measuring several dimensions of quality of life were used, as well as the Caregiver Reaction Assessment to measure benefits and burdens. ANOVA and multiple regression were used to test differences and examine associations.

Some differences in demographic characteristics and caregiver outcomes ($p < .10$) between male and female caregivers were found. Men were more likely to be employed, slightly older and more educated than their female counterparts. Men experienced more financial problems associated with the caregiving role, and experienced more disruption in their schedules. Women reported more positive benefits from the caregiving experience. There was no significant difference in mood state, but men scored towards the more negative end in all subscales of the Profile of Mood States, except for fatigue. These findings prompt several questions, including the need to evaluate whether standard tools are adequate for assessing the caregiving experience of men and the extent to which instruments have been normed with male caregivers. It may be reasonable to consider a qualitative exploration to help determine if design of new instruments, and possibly tailored interventions, are warranted.

Funding Sources: N. Berger P-20, CA-103736; Case Presidents Research Initiative Award

10

PSYCHOLOGICAL DISTRESS AND IMMUNE FUNCTION IN NEURO-ONCOLOGY CAREGIVERS. Paula Sherwood, RN, PhD, CNRN, University of Pittsburgh, Pittsburgh, PA; Heidi S. Donovan, RN, PhD, University of Pittsburgh, Pittsburgh, PA; Allison Hricik, MS, University of Pittsburgh, Pittsburgh, PA; Alyssa G. Newberry, University of Pittsburgh, Pittsburgh, PA; Allison Walker, BS, University of Pittsburgh, Pittsburgh, PA; Sheldon Cohen, PhD, Carnegie Mellon University, Pittsburgh, PA; and Barbara A. Given, RN, PhD, FAAN, Michigan State University, East Lansing, MI

Understanding how psychological distress affects caregivers' immune system is vital for maintaining caregiver health.

Several studies with family caregivers of persons with Alzheimer's disease demonstrate a link between the stress of providing care and caregivers' decreased overall physical health. Less attention is paid to potential mechanisms behind this relationship (e.g., the impact of psychological distress on immune function); no studies have linked providing care with biologic processes in oncology. The purpose of this analysis is to examine the relationship between psychological distress and immune function in caregivers of persons with a primary malignant brain tumor (PMBT).

Relationships among variables were drawn from the Adapted Pittsburgh Mind Body Center Model.

Family caregivers of persons with a PMBT are being enrolled in a longitudinal, descriptive study (NCI-R01CA118711) within a month of diagnosis; data collection at baseline and 4-months. Immune markers (interleukins 1 and 6) are obtained via venipuncture and analyzed using ELISA technique. Psychological distress is evaluated via 1.5 hour telephone interview with measures of caregiver burden, depressive symptoms, and anxiety. For the final presentation, data from the first 50 dyads who complete baseline and 4-month data collection will be analyzed using paired t-tests (to determine change in immune function over time) and multiple linear regression (to examine the relationship between psychological distress and immune function).

The total sample (N=50) has undergone baseline data collection. Thirty-five caregivers have undergone 4-month data collection; the remainder will complete 4-month data collection by 09/08. Preliminary analysis of baseline data revealed significant correlations between IL-1 and anxiety ($r=-.77$; $p<.05$) and between IL-6 and caregiver burden ($r=.82$; $p<.05$). Due to the nature of batch analysis, the remainder of the samples will be analyzed after the last person completes 4-month data collection. Final analyses will consist of identifying predictors of change in immune function from baseline to 4-months.

Correlation coefficients from the sample subset to date provide preliminary support for a relationship between psychological distress and altered immune function. These data are vital for beginning to understand how distress from providing care can ultimately affect caregivers' physical health.

Funding Sources: ONS/ABTA; NCI

11

RETAINING FAMILY CAREGIVERS IN LONGITUDINAL RESEARCH. Paula Sherwood, RN, PhD, CNRN, University of Pittsburgh, Pittsburgh, PA; Alyssa G. Newberry, University of Pittsburgh, Pittsburgh, PA; Jean Kuo, BS, University of Pittsburgh, Pittsburgh, PA; Allison Hricik, MS, University of Pittsburgh, Pittsburgh, PA; Allison Walker, BS, University of Pittsburgh, Pittsburgh, PA; Heidi S. Donovan, RN, PhD, University of Pittsburgh, Pittsburgh, PA; and Barbara A. Given, RN, PhD, FAAN, Michigan State University, East Lansing, MI

The lack of longitudinal data from family caregivers precludes the ability to identify the time in which interventions to improve caregivers' emotional health are most effective. Data will help identify those at risk for attrition over the course of the care situation so that strategies for retention can be most effectively developed.

A consistent criticism of family caregiver research is the lack of available data regarding how caregiver reactions change during the care situation, information which is vital to improving the effectiveness and efficiency of interventions to improve caregiver

health. For this reason, the retention of patient-caregiver dyads in longitudinal studies is essential. The purpose of this work in progress is to identify factors (caregivers' gender, age, race, relationship to the care recipient, and care recipients' tumor type, neuropsychological function, and symptom severity) that influence retention in a descriptive, longitudinal study.

Relationships among variables were drawn from the Adapted Pittsburgh Mind Body Center Model.

Persons with a primary malignant brain tumor and their family caregivers are currently being enrolled in a longitudinal, descriptive study (NCI-R01CA118711) within a month of diagnosis with data collection (phlebotomy, physiologic monitoring for 72 hours, and a 1.5 hour telephone interview) at baseline, 4 and 8 months. Data in this abstract (N=36) were analyzed using chi square tests for equivalency. For the final presentation, chi square and linear regression will be used to evaluate factors influencing attrition over all three timepoints.

The total sample (N=40) has been recruited and preliminary analyses have been completed comparing the subset that have completed both baseline and 4 month interviews to date (N=36; N=3 attrited between baseline and 4 months). Chi square analyses revealed two trends. Caregivers who attrited tended (p=.06) to be older (m=65.0 years; sd=10.15) than those who completed both data collection timepoints (m=50.45 years; sd=12.63) and cared for patients with higher levels of neuropsychological dysfunction (p=.05). No significant differences were found between those who attrited and were retained based on caregiver gender, race, relationship to the care recipient, or care recipients' symptom severity. Data analysis will be completed across the three timepoints by the Fall of 2008.

Funding Sources: ONS/ABTA; NCI

12

RECRUITMENT OF PATIENT-CAREGIVER DYADS FOR AN INTERVENTIONAL STUDY EVALUATING A PSYCHOEDUCATIONAL INTERVENTION FOR CAREGIVERS OF PEOPLE WITH CANCER.

Cindy Tofthagen, MSN, ARNP, AOCNP®, University of South Florida College of Nursing, Tampa, FL; Mary Ann Morgan, MSN, ARNP-C, University of South Florida College of Nursing, Tampa, FL; and Susan McMillan, ARNP, PhD, University of South Florida College of Nursing, Tampa, FL

The American Pain Society guidelines have recommended education for cancer patients with pain and their families. Few psycho-educational trials have provided information regarding screening, eligibility and subject recruitment.

The purpose of this study is to describe the challenges encountered with recruitment of dyads for a randomized controlled study evaluating a psycho-educational intervention for caregivers of cancer patients with pain.

The Stress Process Model guided the study. Caregivers must balance competing demands and take action based upon assessment of priorities. While the study aimed to reduce caregiver stress, when considering participation, additional research responsibilities may be perceived as contributing to, rather than alleviating stress.

Potential participants with a scheduled appointment were identified for eligibility through review of the medical record. Participants who were determined to be eligible were invited to participate then consented and randomized. The study required all participants to complete lengthy questionnaires at three time intervals. The intervention consisted of three hour-long sessions and two brief follow up calls. Caregivers receiving the interventions were asked to keep a daily pain and symptom diary for at least five weeks at the beginning of the study. Descriptive statistics were used to analyze accrual data. Frequencies and percentages were calculated using Microsoft Excel.

Targeted enrollment was 345 for this four year, NIH funded study (5RO1 008270) which recruited patients from February 2004 through March 2008. A total of 8743 patients were screened for eligibility. The majority (n=7035) were ineligible at initial screening. Those who met eligibility requirements (n=1708) were approached. Upon further discussion with the patient and/or caregiver, 63% (n=1081) of those who were approached were ineligible. From 748 eligible dyads, 438 (59%) declined participation because of lack of interest, lack of time, or feeling overwhelmed. 310 dyads agreed to participate and 233 (31%) dyads actually completed the initial sign up, including the first questionnaire packet and consent forms. Recruitment of caregiver/patient dyads for psycho-educational interventional studies is time intensive and costly. Better screening methods for large psycho-educational interventional studies should be explored. Patients and caregivers may be unwilling to enroll in psycho-educational studies because of perceived study burden.

Funding Source: National Institute of Nursing Research (5RO1 008270, S. McMillan, PI)

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DISTANT CAREGIVING A PARENT WITH ADVANCED CANCER.

Polly Mazanec, ACNP-BC, AOCN®, Case Western Reserve University, Cleveland, OH; and Barbara Daly, PhD, RN, FAAN, Case Western Reserve University, Cleveland, OH

More than seven million Americans are distant caregivers and the number is expected to grow as baby boomers and their parents age. Although much is known about the experience of providing direct care for a family member with cancer, there has been almost no examination of the experience of being a family caregiver who lives a long distance from the patient.

Distant caregiving, which is the experience of providing instrumental and/or emotional support to an ill loved one who lives a long distance from the caregiver, is an increasingly common phenomenon. The inability to be present with the patient, to have direct communication with professional staff, and to participate on a regular basis in treatment and management may add additional stressors to the caregivng experience. Distant caregivers thus may be at great risk for experiencing caregiver burden, leading to distress, depression, and anxiety. The purpose of this study is to investigate the effect of distance on the caregivers' reaction and to explore predictors of caregiver psychological well-being (depression, anxiety, and distress).

The conceptual model for this study uses the Pearlin stress process model.

A predictive comparison design will be used to measure the relationships of patient and caregiver factors to caregiver psychological outcomes. A convenience sample of 80 advanced stage cancer patients from a comprehensive cancer and their adult children (40 local & 40 distant caregivers) will be enrolled. Data will be collected through a telephone interview. A series of regression analyses will be run to examine the relationships between variables, caregiver reaction, and social support. Three open-ended questions will explore the overall caregiving experience. Information from the qualitative component will be examined through content analysis.

The results of this study will help to evaluate similarities and differences between local and distant caregiving experiences, as well as identify unknown distant caregiver concerns. This information can be useful in planning care models for patients who rely on distant caregivers and interventions to support these family members.

Funding Source: National Research Service Award from the National Institute of Nursing Research;1F31NR010315-01A1

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THE BEREAVED PALLIATIVE CAREGIVERS' EXPERIENCE OF HOPE: INSIGHTS FROM THEIR HOPE DIARIES.

Lorraine Holtslander, RN, PhD, CHPCN(c), University of Saskatchewan, Saskatoon, Canada; and Wendy Duggleby, PhD, RN, AOCN®, University of Saskatchewan, Saskatoon, Canada

Bereaved family caregivers are at risk for increased mortality and morbidity. Oncology nurses can promote caregiver health during bereavement. Increased knowledge of hope will enhance the quality of care provided to this vulnerable population.

The purpose of the initial grounded theory study was to explore hope for a unique population. This presentation reports the findings of a secondary content analysis of their hope diaries. The specific aims were to: a) explore the overall experience of hope as described in the diaries and b) describe the specific hindrances to hope and c) identify the ways participants were able to foster their own hope.

Patton's content analysis of the diaries was completed in order to identify core consistencies and meanings.

The sample consisted of bereaved spousal caregivers of a palliative cancer patient. Twelve participants completed a hope diary. They described what hope meant to them that day, and what actions, activities, or specific supports hindered or helped their hope. The diaries were transcribed verbatim and a content analysis was completed to reveal the study findings.

Hope gave bereaved palliative caregivers self-confidence to face each day and deal with the loss of their spouse. The hindrances to hope were their many losses, loneliness, and physical health concerns. Positive thoughts, connections, and taking care of physical needs fostered hope. The experience of writing about hope each day had a positive affect on their experience of hope.

The oncology nurse can explore the importance of hope for the bereaved family caregiver, the circumstances that may be hindering hope, and ways to facilitate hope. Ongoing research is needed with a variety of populations and settings to develop theory from which to build and pilot test a hope intervention for bereaved caregivers.

Funding Source: Saskatoon Association of Loss, Grief, Education, and Support

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POSITIVE ASPECTS OF CARE: CHANGES OVER TIME IN CAREGIVERS OF PATIENTS WITH A PRIMARY MALIGNANT BRAIN TUMOR.

Allison Hricik, MS, University of Pittsburgh, Pittsburgh, PA; Alyssa Newberry, University of Pittsburgh, Pittsburgh, PA; Jean Kuo, BS, University of Pittsburgh, Pittsburgh, PA; Allison Walker, BS, University of Pittsburgh, Pittsburgh, PA; Heidi Donovan, PhD, RN, University of Pittsburgh, Pittsburgh, PA; Barbara Given, RN, PhD, FAAN, Michigan State University, East Lansing, MI; and Paula Sherwood, RN, PhD, CNRN, University of Pittsburgh, Pittsburgh, PA

Knowing what predicts the increase and decrease of positive aspects of caregiving will play in influential role in the development of future interventions.

The purposes of this analysis were to 1) explore changes in PAC during the first four months following a diagnosis of cancer and 2) to examine the way in which caregiver and care recipient variables predict PAC at baseline, 4 months, and changes in PAC from baseline to 4 months.

Although the majority of caregiver research to date has centered on negative responses from providing care to a family member with cancer, recent studies have begun to suggest that positive responses may concomitantly occur. Little is known, however, regarding what factors influence positive aspects of care (PAC).

Thirty-two caregivers of persons with a primary malignant brain tumor were recruited within a month of diagnosis; data collection occurred at baseline and 4 months. Caregiver data (sex, age, years of education, relation to care recipient, tumor type, years at current marital status, positive aspects of care [Barrera PAC]) were collected via telephone interview and care recipient data (symptom severity [MDASI-BT] and physical function [SF-36] were collected during face to face interviews. Paired t-tests were used to examine change in PAC over time; multiple linear regression models (backward stepwise regression) were used to identify variables that significantly affected PAC at baseline, 4 months, and changes in PAC from baseline to 4 months.

Analyses revealed a significant (p=.02) decrease in PAC from the time of diagnosis (M=44.74; SD=7.66) to four months after diagnosis (M=41.61; SD=7.07). None of the potential predictor variables had any affect on PAC at baseline (p=.09). PAC at 4 months, however, was significantly related to relationship to the care recipient (p=.01) and years at current marital status (p=.01). Spousal caregivers and caregivers who reported fewer years at their current marital status reported higher levels of PAC. Study results suggest that PAC is dynamic over the course of the care situation. Results also suggest that sociodemographic characteristics may play a role in whether or not the caregiver perceives positive rewards from providing care.

Funding Source: NCI-RO1-CA118711-01

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CAN WE IDENTIFY ADROIT VERSUS MALADROIT CAREGIVERS IN THE ADULT POPULATION OF CANCER PATIENTS?

Toni Dobson, BSN, University of South Florida College of Nursing, Tampa, FL; Anthony Fulginiti, MSW, Moffitt Cancer Center & Research Institute, Tampa, FL; Susan McMillan, PhD, RN, University of South Florida College of Nursing, Tampa, FL; and Brent Small, PhD, University of South Florida College of Aging Studies, Tampa, FL

Caregiving is pertinent to oncology nursing; the trajectory of illness most often requires informal caregiving and the health care delivery system relies on this help in caring for patients with cancer.

The aim of our study was to identify characteristics of adroit versus maladroit caregivers in the adult cancer patient/caregiver population. It is hypothesized that the higher the level of perceived self efficacy of the caregiver (GIS) will be correlated with a higher level of support and higher level of knowledge (MCBS) between the patient and the caregiver compared to average pain scores, CES-D scores, and demographics

We utilized Bandura's Theory of Self Efficacy & Lenz, et. al's Middle Range Nursing Theory of Unpleasant Symptoms.

Methods/Methodological Approach:

The demographics, GIS, MCBS, CES-D, and pain on average scores were compared using SPSS 16 software package for the social sciences.

Variables:

1. The MCBS assesses the functional state of the dyadic relationship between the patient and the caregiver.
2. The GIS is a two item Likert like scale rating from -10 (extremely poorly) to +10 (extremely well) that assesses whether caregivers perceive themselves as more knowledgeable and competent in managing the two target symptoms.
3. The CES-D is a 20 item scale that measures depression in the general population.
4. Pain on average ratings were obtained by self report using the 0-10 visual analog scale.
5. Demographic variables.

We ran frequencies and medians on the GIS and MCBS; recoded these into different variables; from there, new variables were created for the adroit GIS and adroit MCBS scores of caregivers. These were then compared to CES-D and pain on average scores and demographics using ANOVA and post hoc tests.

The aim of our study was to identify characteristics of adroit versus maladroit caregivers in the adult cancer patient/caregiver population.

Assessment of MCBS, GIS, CES-D, and pain on average scores gives objective, evidence based measures to begin identifying early in the disease trajectory the caregivers of cancer patients with pain in the adult population that are at risk for knowledge and efficacy deficits.

Funding Source: NIH

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COMMON MEANINGS OF SOCIAL SUPPORT AS EXPERIENCED BY JORDANIAN WOMEN WITH BREAST CANCER.

Nesreen Alqaissi, RN, MSN, CNS, University at Buffalo, the State University at New York, Buffalo, NY; and Suzanne Dickerson, DNS, RN, School of Nursing, University at Buffalo, Buffalo, NY

The results of this study may help researchers and health care providers develop a better understanding regarding the meaning of and needs for social support among Jordanian women diagnosed with breast cancer. The results of this study may also help nurses and health care providers develop culturally sensitive interventions that can be implemented to improve and meet the social support needs of Jordanian women diagnosed with breast cancer.

Research Problem: Research addressing social support among women diagnosed with breast cancer has been predominantly explored among western cultures. Studies conducted exploring social support in breast cancer among women from diverse cultural and ethnic backgrounds have shown that these women view the meaning of and needs for social support differently than women from western cultures. Currently, there is a lack of research in nursing and health related literature regarding the meanings and needs of social support among Jordanian women diagnosed with breast cancer.

Purpose. The purpose of this study is to explore common meanings of social support as experienced by Jordanian women with breast cancer through their diagnosis and treatment trajectories. The specific aims are to; 1) describe the meaning of social support for Jordanian women with breast cancer (stage 0, 1, II, and III) after diagnosis and throughout the treatment trajectory, 2)describe helpful and non-helpful social support for Jordanian women with breast cancer, 3) describe common meaning and differences of social support for Jordanian women who are married, unmarried, and from different tribes.

Framework. The researcher is using interpretive phenomenology utilizing Heideggerian Hermeneutic approach as the approach for this study.

A qualitative phenomenological research design has been used for this study. A purposive sample of 20 women diagnosed with breast cancer was recruited from two hospitals located in Jordan. Data were collected utilizing individual semi-structured interviews. Heideggeran Hermeneutics has guided the development of interview questions. Participants were asked to share stories of their experiences with breast cancer focusing on the meanings of social support and helpful and non-helpful social support. Interviews will be analyzed using Diekelmann, Allen, and Tanner's Heideggerian Hermeneutical methodology.

data were not analyzed yet

Funding Source: Sigma Theta Tau International, Gamma Kappa Chapter

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TALKING CIRCLE FOR COMANCHE WOMEN'S BREAST HEALTH.

Emily Haozous, RN MSN, ANP, Yale University School of Nursing, New Haven, CT; Valerie Eschiti, PhD, RN, University of Oklahoma Health Sciences Center, Oklahoma City, OK; and Jana Lauderdale, PhD, RN, Vanderbilt University School of Nursing, Nashville, TN

American Indian (AI) women are diagnosed with breast cancer at later stages and have higher mortality rates than women of other races. As breast cancer screening is critical to early detection and treatment, health care providers need effective educational materials targeted to their patient populations. At this time there are no targeted materials for Comanche AI women.

Culturally targeted educational materials exist for AIs, but are not tribe-specific and their efficacy with Comanche women is unknown. In addition, scarce information exists regarding the impact of culture on breast health among Comanche women. The aims of this study were to explicate Comanche Community Health Representative (CHR) perspectives on: 1) Specific changes to be made to the COL program educational materials in order to enhance breast cancer screening in Comanche women, and 2) Cultural sensitivity of two tools measuring breast cancer and screening susceptibility, benefits, and barriers, and cultural beliefs about mammography screening environment, health temporal orientation, and control.

Little is known about Comanche women's health beliefs related to breast cancer, suggesting the need for research upon which future intervention studies can be based. This study was a descriptive qualitative study guided by the principles of community-based participatory research (CBPR), a collaborative approach to the research process in which partners equitably contribute and share decision-making and ownership.

Seven CHRs serving Comanche women participated in a "Talking Circle", an indigenous method of making decisions and conducting group process. An interview guide was developed to explore the cultural appropriateness of educational materials and the impact of culture on Comanche women's breast health.

Transcripts were analyzed first for broad codes, which were then clustered and categorized. Categories were then abstracted to themes. The themes were validated by outside qualitative researchers and the participants in order to establish trustworthiness and authenticity.

This study provided preliminary information regarding enhancements needed to the ACS Circle of Life program educational materials, as well as changes needed to make breast health instrumentation culturally appropriate. Emerging themes were Barriers to Information, Barriers to Screening, Economic Barriers, Barriers to Follow-up, and Protecting our Women.

Funding Source: University of Oklahoma College of Nursing, Deans Research Seed Grant

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CULTURALLY SENSITIVE, STAGED-BASED MAMMOGRAPHY-PROMOTION EDUCATION FOR KOREAN AMERICAN WOMEN.

Jin Hee Kim, PhD, RN, University of Illinois at Chicago, College of Nursing, Chicago, IL; and Usha Menon, PhD, RN, University of Illinois at Chicago, College of Nursing, Chicago, IL

Breast cancer is the most frequently diagnosed cancer among Korean-American (KA) women, and KA women present with larger tumor sizes and more advanced-stage cancers than Caucasian women, implying that KA women adhere less to breast cancer screening. Because early detection through routine screening contributes to a decrease in breast cancer mortality, the particularly low rates of adherence to breast cancer screening guidelines among KA women is disconcerting.

A pre- and post-test experimental, two-group design study was conducted to assessed the effectiveness of the culturally competent, stage-based, interactive church-based intervention (GO EARLY Save Your Life), specifically designed to promote the stages of readiness for mammography adoption among non-adherent, KA women aged 40 years or older

The KA Breast Cancer Screening Model (KABCSM) formulated by integrating the transtheoretical model of change (TTM) and the health belief model (HBM) guided the study under the assumption that women in different stage of readiness to have mammogram have significantly different perceptions on breast cancer and early screening

Each woman was automatically assigned to either the control (N=90) or intervention group (N=90) based on her church affiliation. The educational program was a 30-minute, stage-based, interactive session on breast cancer and early screening knowledge

and beliefs for KA women grouped according to stages of readiness for mammography adoption (pre-contemplation, contemplation, or relapse). For Intervention group, each woman completed a baseline survey (demographics, acculturation, knowledge, breast cancer-related beliefs, and Korean traditional beliefs), attended a designated education session based on her mammography adoption stage, and completed a follow-up post-intervention survey (16 weeks and 24 weeks). For control group, each woman completed Times 1, 2, and 3 questionnaires with no education at the same intervals as the intervention group.

The preliminary findings in this presentation will be focused on the following research hypotheses: 1) Mammography adoption stages will be significantly associated with demographics, knowledge, and beliefs; 2) There will be a significant upward shift in the stages of readiness to have mammography pre- and post-intervention among KA women who receive GO EARLY compared to those who do not receive the intervention.

Funding Source: NINR

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GAINING UNDERSTANDING OF SOUTH AFRICAN TRADITIONAL HEALERS' MANAGEMENT OF POST BREAST CANCER LYMPHEDEMA: BUILDING A FOUNDATION FOR A SYNERGISTIC MODEL OF BEST PRACTICES.

Cheryl Nikoden DCurr, CRM, University of Western Cape, Cape Town, South Africa; and Jane M. Armer, PhD, RN, University of Missouri, Columbia, MO

The goals of an international collaboration with the University of Missouri in the USA and University of the Western Cape in South Africa are to: (1) increase understanding of survivors' and traditional healers' ways of managing lymphedema; (2) design intervention(s) with improved treatment options for dealing with lymphedema in South Africa, combining best practices in Western and traditional approaches; (3) educate the public and health professionals on the causes and management of lymphedema; and (4) establish cancer and lymphedema data registries through partnerships with governmental, academic, and voluntary agencies for foundational data on incidence and prevalence.

The specific purpose of this research in progress is to increase understanding of traditional healers' ways of identifying and managing lymphedema following cancer treatment in South Africa. The secondary purpose is to propose an integrated approach which synergistically combines the best practices of Western and traditional medicine for survivors living with and at risk of developing lymphedema.

We are working with key people who will share from their expert understanding of South African customs and traditions in assessing and managing lymphedema. Working collaboratively, as equal partners, with the traditional healers, the practicing nurses and therapists, students, and patients, will facilitate the development of a program of clinical education and research that will holistically incorporate the best attributes of traditional, indigenous, homeopathic, and allopathic healing approaches.

Qualitative research methods are being used for data collection. Face-to-face interviews with traditional healers in South Africa are being conducted with a semi-structured interview guide adapted from earlier work by the second author in the U.S. Three interviews have been completed and additional interviews will be conducted in July 2008. Data are being audio-taped, transcribed, and reviewed for recurring themes by the research team. Themes will be extracted by the first author using editing style analysis; reviewed and edited by the second author; and reviewed by the entire team for validation, representativeness, and sufficiency.

This new understanding will be used to design evidence-based intervention(s) which synergistically combine the best practices of Western and traditional medicine for survivors living with and at risk of developing lymphedema.

Funding Source: UMSAEP

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UNDERSERVED AND UNDERTREATED: TRACKING ADVANCED LUNG CANCER SYMPTOMS IN PATIENTS TREATED AT INNER CITY PUBLIC HOSPITALS.

Guadalupe Palos, RN, LMSW, DRPH, University of Texas M.D. Anderson Cancer Center, Houston, TX; Tito Mendoza, PhD, M.D. Anderson Cancer Center, Houston, TX; Xin Wang, MD, MPH, M.D. Anderson Cancer Center, Houston, TX; Charles Cleeland, PhD, U. T. M. D. Anderson Cancer Center, Houston, TX; Vincente Valero, MD, M.D. Anderson Cancer Center, Houston, TX; Araceli Garcia-Gonzalez, MD, PhD, M.D. Anderson Cancer Center, Houston, TX; and Gary Mobley, MS, M.D. Anderson Cancer Center, Houston, TX

Low socioeconomic status and lack of access to care are often regarded as reasons for racial and ethnic patients to present with poorly managed symptoms related to advanced cancer. In this study, we assessed the severity and interference of multiple symptoms in newly- diagnosed patients with advanced lung cancer undergoing chemotherapy treatment at public vs. tertiary care centers.

The theorectical model used for this study is based on Cleeland's symptom burden framework.

Bilingual research staff administered the M. D. Anderson Symptom Inventory-Lung Cancer Module, SF-12, and Beck Depression Inventory II. Disease and demographic data were also obtained from medical records.

1. Sample: The study was conducted with 159 patients diagnosed with Stage III or IV Non-Small Cell Lung Cancer (NSCLC), 102 were treated at a major cancer care center (Texas) and 57 at three inner city public hospitals (2 in Texas and 1 in Florida).
2. Data Collection: Data were collected at 4 timepoints over an 18-week period (6 cycles of chemotherapy) from newly-diagnosed patients.
3. Statistical methods: We compared changes in ratings of symptom severity and their interference in patients over the course of their chemotherapy regimen. Descriptive statistics were computed for both the severity and interference items. Mixed modeling analysis was used to examine the differences in symptom severity between African-American/Black, Latino, and white, non-Latino patients.

Conclusions: Our results indicate that a larger proportion of patients treated at public hospitals experience greater severity in physical symptoms and depression, even with less-advanced lung cancer.

Symptom burden in this patient population did not seem to improve during the 18-week chemotherapy treatment regimen.

Longitudinal symptom studies focusing on poor and vulnerable cancer populations are few in number. Descriptive studies tracking symptoms across time and culturally-appropriate interventions are needed to better understand the disparities in symptom management.

Funding Source: National Institute of Health, National Cancer Institute (R01 CA26582)

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JORDANIAN WOMEN WITH BREAST CANCER KNOWLEDGE ABOUT LYMPHEDEMA PREVENTION AND MANAGEMENT.

Rana Obeidat, State University of New York at Buffalo, Buffalo, NY; and Mohammad Al.Jauissy, Jordan University of Science and Technology, Irbid, Jordan

No previous studies explored Jordanian women with breast cancer knowledge about lymphedema prevention and management.

Breast cancer is the most common malignancy affecting Jordanian women. According to the Jordan National Cancer Registry, over 650 women were diagnosed with breast cancer in 2005. The

most common type of breast surgery used for Jordanian patients is modified radical mastectomy which puts patients under increased risk of secondary lymphedema. Providing patients with appropriate education about lymphedema prevention strategies and its early indicators is very important. Early indicators allow for early intervention with acute lymphedema that can be reversible, reducing the risk of chronic lymphedema development. The purpose of this study was to systematically explore Jordanian women with breast cancer knowledge about lymphedema prevention and management.

descriptive-correlational design used to answer the study questions. Ninety three women who are/were treated for breast cancer participated in the study. Lymphedema Knowledge Scale (LKS) was used to collect data. Data were analyzed using descriptive statistics, Chi-square, Eta test and Pearson Product Correlation Coefficient.

Results indicated that the majority of participants recalled knowing almost nothing about lymphedema prevention and management. Very few participants reported using lymphedema prevention and management strategies. Women who had experienced lymphedema were more likely to have had total mastectomy, underwent chemotherapy treatment, and reported problems with infection and wound healing following treatment. There was strong association between mean scores on LKS and age, monthly income, education and occupation of participants. Most of Jordanian women with breast cancer are uninformed about their risk of lymphedema, unaware of lymphedema prevention and management strategies and their knowledge and use of these strategies are poor. Little emphasis is placed on awareness, recognition or treatment of lymphedema among Jordanian health care professionals. Jordanian women with breast cancer have insufficient access to good Arabic educational materials about lymphedema. Jordanian women with breast cancer should be taught to understand lymphedema well enough to report immediately any signs of infection, tightness, and swelling in the affected arm. Nurses working with these patients have an obligation to inform themselves and their patients about what is known about lymphedema and to update their knowledge about it. Arabic educational materials and programs about lymphedema should be developed and made accessible to Jordanian women with breast cancer women.

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PERCEPTION OF PATIENT NAVIGATION IN LATINO WOMEN.

Gloria Velez-Barone, ARNP, MSN, AOCN®, Parish Medical Center, Titusville, FL

Common barriers to care in Latino women include lack of access to health care providers, lack of information, and cultural beliefs and biases related to cancer care. Patient Navigation is a new role for health care providers designed to address these patient care issues. Although research findings are promising on how patient navigation can improve outcomes in cancer care, research findings from the patients' perception is lacking.

The purpose of this study is to explore the perception of patient navigation in Latino women with abnormal results from breast or colorectal screening.

There is no prior theoretical framework; the approach is inductive using grounded theory.

Recruitment for this study will occur from a major cancer center participating in the Patient Navigation Research Program. Participants will be approached for inclusion in this present study if they have completed the larger navigation study, self-identify as Latina, and speak English. Participants will be interviewed about the navigation program, assistance received from the navigator, thoughts on role of the navigator, and what other services could have been provided via the navigation program. Recruitment will continue until theoretical saturation is achieved. Digitally recorded interviews will be transcribed verbatim. The data will be analyzed using Strauss and Corbin's procedures for grounded theory, which includes open, axial, and selective coding.

This study is in progress. Findings from this study have the potential to assist in developing and refining the role of a patient navigator for this population by incorporating the patients' perspective.

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RELIGIOUS BELIEFS AND DELAY IN BREAST CANCER DIAGNOSIS OF SELF-DETECTED BREAST SYMPTOMS AMONG AFRICAN AMERICAN WOMEN.

Mary Gullatte, PhD, RN, APRN, BC, AOCN®, Emory Crawford Long Hospital, Atlanta, GA; Otis Brawley, MD, American Cancer Society, Atlanta, GA; Anita Kinney, PhD, RN, University of Utah, Huntsman Cancer Center, Salt Lake City, UT; Barbara Powe, PhD, RN, American Cancer Society, Atlanta, GA; and Kathi Mooney, PhD, RN, University of Utah, College of Nursing, Salt Lake City, UT

First nursing study in past 10 years to quantify only talking to God and delay in seeking medical care for self-detected breast symptom(s).

AAW are more likely than any other racial or ethnic group to present with later stage of breast cancer at diagnosis. Delay is a critical factor in later stage diagnosis. Aim examined the influence of religious belief of talking only to God as a significant factor in delay in seeking medical care for self-detected breast symptoms. Aim 2 was to determine the association between time to seek medical care and breast cancer stage.

AAW had a 36% higher death rate from breast cancer than did Caucasian women in ACS 2007. 40% 0f survival difference explained by stage of breast cancer in AAW. Religiosity and time to seek medical care for self-detected breast symptoms in AAW has been understudied in research and underrepresented in the nursing literature and is an important predictor of late diagnosis in AAW. Few studies to date have analyzed the relationship between religious beliefs and breast cancer screening delay. Anecdotal findings are most often reported in the literature related to choosing religious intervention in lieu of medical care for self-detected breast symptoms.

Descriptive Correlation design. Convenience sample of 129 AAW. Researcher developed self-administered questionnaire was used. Participants age range 30-84 years of women who self-reported detecting a breast symptom later diagnosed as breast cancer.

1. A Mann Whitney U test was conducted to evaluate whether women who talked only to God were more likely to delay seeking medical care than women who told someone about their breast symptom. The results were significant at p=0.02.
2. A significant association was found between time to seek medical care and breast cancer stage at diagnosis using a Chi square analysis(p=0.01). Study participants who talked only to God were more delayed longer in seeking medical care.

Funding Sources: NCI Training grant R25 CA093831, Kathi Mooney, PI; ONS Foundation Doctoral Scholarship; Emory Healthcare of Emory University

Exercise

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FEASIBILITY OF AN ENDURANCE EXERCISE INTERVENTION IN WOMEN UNDERGOING CHEMOTHERAPY FOR EARLY STAGE OF BREAST CANCER.

Sadeeka Al-Majid, PhD, MS, RN, Virginia Commonwealth University, Richmond, VA; D. Patricia Gray, RN, PhD, Virginia Commonwealth University, Richmond, VA; Peter Pidcoe, PT, PhD, Virginia Commonwealth University, Richmond, VA; and Christine Schubert, PhD, Virginia Commonweath University, Richmond, VA

Cancer-related fatigue (CRF) is caused by a multitude of biological and psychobehavioral mechanisms. Despite its prevalence and significance, CRF remains an important under-managed symptom in cancer patients. Although evidence suggests that exercise attenuates CRF, very little is known regarding the biological and psychobehavioral mechanisms underlying the favorable effect of exercise. Understanding these mechanisms will provide empirical support for the role of exercise and will help in designing specific exercise protocols to most efficiently attenuate CRF.

The purpose of this pilot study was to evaluate the feasibility of an exercise program among women undergoing chemotherapy for early stage breast cancer and to evaluate fatigue-related biological and behavioral outcomes of the intervention

A theoretical model incorporating biological and psychobehavioral concepts related to CRF was developed. The model identified relationships among study variables and guided the selection of outcome measures.

The sample included 8 women with an average age of 47 years. Participants were randomly assigned to one of three groups: supervised exercise (n=3), home-based exercise (n=2) or control (n=3). The intervention consisted of treadmill ambulation for the supervised exercise group and self-paced walking for the home-based exercise group, performed 30 minutes/day, 3 days/week for duration of chemotherapy. Usual care served as the control condition. Outcome data were collected at baseline and at end of study. Behavioral measures included self-reported fatigue, depressive symptoms, and quality of life. Biological measures included functional ability, and VO2max. Feasibility data included participant accrual and adherence to study protocol, and procedures for testing and measuring variables of interest. Descriptive statistics were computed for all variables. Plots were generated to observe variable patterns over time. Changes were examined using pre-post intervention differences and comparisons of these changes over time between the control and exercise groups

All outcome variables improved in the exercise groups but did not approach statistical significance. No adverse events were reported. Data on all outcome variables were efficiently obtained. Patterns of participation and adherence in both the exercise intervention and data collection procedures support the feasibility of the study protocol. Recruitment of a larger sample is required for further evaluation of the effectiveness of the intervention.

Funding Source: Oncology Nursing Society

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THE EFFECT OF HOME-BASED AEROBIC EXERCISE PROGRAM ON FATIGUE AND CARDIORESPIRATORY FITNESS IN CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA DURING MAINTENANCE OF CHEMOTHERAPY.

Yi-Chien Chiang, RN, PhD, Chang Gung Institute of Technology, Taoyuan, Taiwan; and Chao-Hsing Yeh, RN, PhD, Chang Gung University, Taoyuan, Taiwan

Cancer-related fatigue is one of the most distressing and prevalent symptoms reported by pediatric oncology patients during their cancer treatment. Effective management for cancer-related fatigue in clinical practice is essential for improving children's quality of life.

The aim of this study was to examine the effect of the home-based aerobic exercise intervention on fatigue and cardiorespiratory fitness in children with Acute Lymphoblastic Leukemia during the maintenance stage of chemotherapy.

Psychobiological-Entropy Model suggested by Nail and Winningham was used to guide this study.

A quasi-experimental study was conducted with fourteen pediatric oncology patients in the experimental group and 10 in control group who were matched by age and sex. A six-week home-based aerobic exercise intervention was implemented for children who were in the experimental group while patients in the control group only received the usual care. Self-reported fatigue data, assessed by PedsQL Multidimensional Fatigue (including three subscales: general, sleep/rest, and cognitive) were collected for 8 time points, including pre-intervention (baseline), every week during the intervention (6 weeks), post-intervention (after the completion of intervention), and follow-up (one month after completion of intervention). The objective cardiorespiratory fitness data, examined by using exercise testing (VO2peak) and six minute walk test (6MWT) were collected only on pre-intervention and post-intervention. Univariate and multivariate analyses were performed in order to assess the specific hypothesis for this study by using the intent-to-treat analysis as well as the per-protocol analysis.

For intent-to-treat analysis, the findings indicated that there are no intervention effects and time differences by any items on the subscale of fatigue. For per-protocol analysis, general fatigue was the only subscale that was significantly lower for children who received the exercise intervention than those in control group at follow-up assessment. The VO2peak are significantly improving in experimental group at baseline- and post-intervention assessment. The VO2peak was significantly higher in children who were in experimental group than those control subjects at post-intervention assessment for the per-protocol analysis. We hope this study will provide useful knowledge about the management of fatigue for childhood cancer in clinical practice, furthermore, to improve quality of life and nursing care for children with cancer.

Funding Sources: Grant to Chao-Hsing Yeh from the National Science Council, Taiwan (grant number: NSC 95-2314-B-182-048-MY; NSC 95-2314-B-182-048-MY); and National Health Research Institutes, Taiwan (grant number: NHRI-EX95-9302PI)

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THE FEASIBILITY OF A SIX-WEEK WALKING PROGRAM ON TAIWANESE WOMEN NEWLY DIAGNOSED WITH BREAST CANCER—PILOT STUDY.

Ya-Jung Wang, University at Buffalo, State University of New York, Buffalo, NY

In Western culture, evidence has shown that exercise decreases fatigue and improves quality of life (QOL). However, very little about exercise has been examined in the Asian cancer population. Only one predictive study related to exercise was found involving Taiwanese breast cancer survivors. Additionally, exercise is not part of routine cancer care in Taiwan although evidence is strong in Western culture. Therefore, it is important to introduce an exercise program to Taiwanese women with breast cancer.

Based on ONS research priorities which focus on individual psychosocial and behavioral research, the purpose of this pilot study is to examine the feasibility and effectiveness of a newly developed 6-week walking program on Taiwanese women with breast cancer.

This pilot study will be a foundation for future large research based on Bandura's self-efficacy theory that guides the developing of interventions to boost the exercise self-efficacy and to evaluate the research outcomes.

This pilot study is a longitudinal design with five-time repeated measures. Ten Taiwanese women newly diagnosed with stage II breast cancer will be recruited from Hope Society for Cancer Care and 2 medical centers in northern Taiwan between June and August 2008. The research intervention includes a 6-week home-based walking program and strategies adopted from Bandura's theory to boost women's exercise self-efficacy. The outcome variables include exercise behavior measured by Godin Leisure Time Exercise Questionnaire, exercise self-efficacy measured by Exercise Self-Efficacy Scale, fatigue measured by Functional Assessment for Chronic Illness Treatment-Fatigue, sleep disturbances measured by Pittsburgh Sleep Quality Index, and QOL measured by Functional Assessment for Cancer Treatment-Breast. SPSS 15.0 with descriptive statistic, t-test, one-way ANOVA, repeated measures ANOVA, and HLM will be used for data analysis.

Results will help guide to make improvements of the newly developed intervention for future large study in Taiwan. Findings will be implicated to increase exercise behavior, to reduce fatigue,

to improve sleep disturbances, and to enhance QOL in Taiwanese women with breast cancer.

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THE STANDARD BRUCE PROTOCOL: TOLERABILITY IN INDIVIDUALS WITH A CANCER DIAGNOSIS AND KNOWN CARDIOVASCULAR, PULMONARY, OR METABOLIC DISEASE.

Sonya M. Arzola, MS, Geneva Foundation, Lakewood, WA; and Stacey Young-McCaughan, RN, PhD, AOCN®, Brooke Army Medical Center, San Antonio, TX

The purpose of this analysis was to describe the tolerability of the standard Bruce protocol in a subsample of individuals diagnosed with cancer and known cardiovascular, pulmonary, or metabolic disease.

The standard Bruce protocol is a six stage treadmill protocol. Each stage is three minutes in duration with a progressive workload increase as dictated by the protocol for speed and grade (stage I = 1.7 mph at a 10% grade, stage II = 2.5 mph at a 12% grade, stage III = 3.4 mph at 14% grade, stage IV = 4.2 mph at 16%, stage V = 5 mph at 18%, stage VI = 5.5 mph at 20%). Tolerability was defined as the completion of at least stage I and a minimum age predicted maximum heart rate (APMHR) of 85% or a rate of perceived exertion (RPE) of 15 on the Borg scale.

Aerobic exercise testing for clinical reasons involves selecting the most appropriate test for a particular individual. In contrast, aerobic exercise testing for research purposes usually involves selecting one test to administer to all participants. For research, the tolerability of a protocol in a particular population is important to know prior to selecting to ensure all participants are able to complete the test.

This analysis indicates that this subsample of individuals who have completed treatment for cancer with known cardiovascular, pulmonary, or metabolic disease could tolerate the standard Bruce protocol. Researchers are advised to consider the use of this protocol in measuring maximal oxygen consumption.

For this study exercise testing data from 13 participants of a larger exercise study were analyzed. All individuals were six months or more post-cancer treatment for seven different cancer diagnoses at all stages of disease. In addition, all individuals had known cardiovascular, pulmonary, or metabolic disease. Eighty-five percent (n=11) were able to complete at least stage I and 92% (n=12) were able to achieve a minimum APMHR of 85% or an RPE of 15.

Funding Source: Department of Defense Uniformed Services University of the Health Sciences TriService Nursing Research Program

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PILOT STUDY OF A SEATED EXERCISE INTERVENTION FOR LUNG CANCER PATIENTS: CLINICAL SIGNIFICANCE.

Lauri John, PhD, RN, CNS, University of Texas at Arlington, Arlington, TX

Fatigue has been implicated as a distressing effect of lung cancer and its treatment that negatively affects quality of life (QOL). Studies have shown that walking programs reduce fatigue and improve general well-being in women with breast cancer; however, there are no studies of the effects of modified exercise programs on QOL in lung cancer patients, whose participation in a walking program might be limited due to climate, safety, and/or scheduling concerns.

The purpose of this pilot study was to determine the feasibility of a major research study to determine the effects of a seated exercise program on QOL and fatigue in lung cancer patients.

The conceptual model for the study was Roy's Adaptation Model.

The design used for the study was a randomized clinical trial with repeated measures. Ten lung cancer patients beginning outpatient chemotherapy with or without radiation therapy were recruited for the study from oncology clinics in central Texas. All participants received standard instructions about fatigue management; maintained a daily activity diary; and completed the Functional Assessment of Cancer Therapy-Lung [FACT-L], which measures QOL in lung cancer patients, and the Fatigue Subscale of the FACT, which measures fatigue, every two weeks for three months. Participants randomized to the intervention group were given a videotape of a low to moderate intensity seated exercise program and individualized instructions about how to modify exercise intensity and were encouraged to perform the exercises at least three times per week. Qualitative data regarding all participants' perceptions of QOL and fatigue as well as strategies used by lung cancer patients to maintain or promote QOL were assessed at the end of the three-month study period.

Although the sample size of this pilot study was too small to find statistically significant differences between the control and intervention groups, the qualitative data suggest clinically significant findings. Inclusion of a tailored exercise program in chemotherapy teaching for patients with lung cancer may improve quality of life, reduce fatigue, and improve treatment tolerance.

Funding Source: ONS Foundation/Ortho Biotech Research Grant

Oncology Nursing Care Issues

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NURSING PRACTICE IN ONCOLOGY AMBULATORY CARE; VIEW OF THE STAFF NURSE. REPORT OF A PILOT PHENOMENOLOGICAL STUDY.

Shirley Morrison, RN-BC, MS, OCN®, University of Texas M.D. Anderson Cancer Center, Houston, TX

Delivery of cancer care is a prime example of the trend from acute care to ambulatory care in the United States. Over the past twenty five years the employment of nurses in ambulatory settings has increased over 2 and ½ times compared with an increase of 62% for nurses employed in hospitals, and yet the study of nursing practice in ambulatory settings lags behind acute care.

The purpose of this qualitative phenomenological study is to describe the characteristics of expert nursing practice in an ambulatory oncology setting. Specific research questions: 1. What are the characteristics of expert nursing practice in oncology ambulatory care? 2. How do nurses described as 'experts' in their field view nursing expertise in ambulatory practice settings?

Interpretative phenomenology developed by the early 20th century philosopher, Martin Heidegger serves as the conceptual framework. A greater understanding of the practice of expert nurses in ambulatory settings will contribute to the understanding of the value of nurses in this practice setting, positively impact patient outcomes, and provide direction for nurse educators to prepare nurses for ambulatory practice.

A purposive sample of six nurses was selected from nurses with at least 5 years experience in ambulatory clinics in a large comprehensive cancer center in the southwest United States. Three additional focus groups of 6 participants each are planned to complete the larger study. The nurses will participate in a 90 minute focus group and share significant narratives of patient/family situations. Data will be analyzed using the hermeneutic circle metaphor. Data accuracy will be addressed using participant member review as a member check.

Findings from the first focus group were grouped into four clusters: establishing a relationship; serving as a patient advocate; using intuition; and describing expert nursing practice. Preliminary findings indicate that experienced oncology ambulatory care nurses are able to articulate unique patient experiences that illustrate the value and expertise of nurses in the ambulatory care setting.

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A TEAM APPROACH TO IMPROVING HAND HYGIENE AND REDUCING VRE RATES WITHIN A HEMATOLOGY-ONCOLOGY BONE MARROW TRANSPLANT UNIT.

Colleen Zidik, RN, BSN, MBA, Brigham and Women's Hospital, Boston, MA; Marsha Milone, RN, MSN, Brigham and Women's Hospital, Boston, MA; Candace Hsieh, RN, BSN, CIC, Dana-Farber Cancer Institute, Boston, MA; Jeanne Barton, AS, Brigham and Women's Hospital, Boston, MA; Susan O'Rourke, RN, BSN, CIC, Dana-Farber Cancer Institute, Boston, MA; and Tamara Devlin, BA, Brigham and Women's Hospital, Boston, MA

Neutropenic patients have a higher risk of contracting Vancomycin Resistant Enterococci (VRE) and other health care associated infections (HCAI). Hand hygiene is one of the most important elements in prevention of transmission of HCAI.

One of our hematology-oncology bone marrow transplant units had a significant increase in VRE rates in the year 2007. In addition, Hand Hygiene monitoring revealed lower than 90% compliance. This, combined with incidental observations of poor hand hygiene practices, resulted in the development of a multidisciplinary action team. Utilizing Roger Resar's concepts of High Reliability and Rapid Cycle Improvement, the action team focused on identifying barriers to hand hygiene and ways to prevent transmission of VRE between patients.

Components of the pilot project were aimed at removing barriers to hand hygiene and systems to reduce risk of transmission. These included: educating staff on the impact of HCAI on patients, ensuring Purell dispensers were highly visible, installing glove box holders and laundry bins in patient rooms, trialing new precaution gowns, and having individual patient vital sign equipment. During the trial, "huddles" were conducted to identify what went wrong, what went right, and what should change. Different members of the action team lead the unit huddles. These huddles helped us identify problems and work on solutions in real time with active staff participation on all levels.

Measures of our success include improved hand hygiene compliance, reduced VRE rates, and overall staff satisfaction. Our first month of data, thus far, has shown positive results.

The success of our pilot is based on the team approach. Involving the varied departments in our work helped to identify the best solutions and alternative ways to approach a problem. For example, when our group identified the need to use a better precaution gown, our initial solution was not environmentally friendly or comfortable. By involving materials management in the action team, a better alternative was found. We also discovered the use of "trash" barrels for laundry placed an extreme workload on our unit assistants. Without the partnership with other departments, the ability to trial the process would have resulted in early failure.

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THE USE OF CURRENT BEST EVIDENCE TO CHANGE PRACTICE AND ENHANCE PATIENT SAFETY.

Virginia Dalton, APRN-BC, Dana-Farber Cancer Institute, Boston, MA; Lillian Vitale Pedulla, MSN, RN, Dana-Farber Cancer Institute, Boston, MA; Linda Pellerin, MSN, RN, OCN®, Dana-Farber Cancer Institute, Boston, MA; and Marsha Fonteyn, PhD, RN, OCN®, Dana-Farber Cancer Institute, Boston, MA

The topic is significant to oncology nursing practice as it enhances patient safety.

The purpose of this evidence-based project was to use current best evidence and cost/benefit analysis to determine whether the practice of piggybacking chemotherapy through polyvinyl chloride (PVC) tubing raised sufficient concerns to require a change in practice.

Many intravenous (IV) tubing sets, extensions, and infusion bags are made from PVC that can cause fluids and drugs to accumulate on the surface, thus reducing the amount of drug delivered to the patient. Moreover, diethylhexylphthalate (DEHP), a lipid soluble plasticizer used in PVC to improve flexibility and pliability, can leach into the IV fluid. DEHP is a known carcinogen and teratogen. Nurses at our NCI-designated ambulatory care center resolved to address this concern by using current best evidence to determine the need for a change in practice.

Nurses from the Evidence-Based Practice Committee obtained and reviewed current literature on IV products containing PVC and DEHP. The review of current best evidence supported the recommendation for a change in practice. Colleagues in the Purchasing and Pharmacy departments performed a cost/benefit analysis that lent further support for eliminating the use of products containing PVC and DEHP at our institution. This change is being systematically implemented into our practice.

This practice change is not anticipated to cause any disruption to patient care delivery. The change to non-DEHP (primary gravity and pump sets, secondary set, extension set, and bags) may have some impact on the purchasing cost of supplies. Periodic monitoring is planned to assess the ongoing effects of this practice change on cost and care.

Many oncology nurses may not be aware of the potential risks involved in using PVC tubing containing DEHP. The information provided in this presentation will raise their awareness while providing sufficient details for nurses who want to consider implementing this positive practice change.

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NURSES' TIME INVESTMENT AND CARE MANAGEMENT IN AMBULATORY ONCOLOGY TELEPHONE CALLS.

Marie Flannery, RN, PhD, AOCN®, University of Rochester School of Nursing and James P. Wilmot Cancer Center, Rochester, NY; and Shannon Phillips, MS, AOCN®, James P. Wilmot Cancer Center, Rochester, NY

Telephone calls are ambulatory cancer patients' primary method of communicating changes in status between visits. Oncology nurses primarily manage these phone calls. This study provides basic descriptive information both to expand knowledge on the scope of oncology nursing practice and to aid in workload planning.

Little is known about the scope or content of telephone calls or the amount of time involved in their management. The primary aims were to 1) describe the nursing role in phone calls and 2) examine phone call content.

This study was framed using a model in which time and nursing role components were elements of a categorizing framework.

After pilot testing and expert content review, an investigator-developed instrument with 24 variables was used to extract data from written logs of 5,328 telephone calls placed to an ambulatory cancer center practice over four months. Extensive training and detailed coding specifications resulted in 93% inter-rater reliability for data entry. Descriptive and correlational analyses were performed.

Nurses answered 52% of the calls independently and consulted or informed the provider in the remaining 48%. Nursing assessment was documented in 88% of calls in which symptoms were reported. Nursing interventions occurred in 74% of these calls. The most common interventions were teaching (63%) and symptom management (12%). The time spent on each call ranged from 1 to 80 minutes (M = 11, Mode = 5 minutes). The time spent was correlated with the number of symptoms reported (F 1.7, p=.003) and with diagnosis (F 49.74, P< .01) but was not related to age or gender of the caller or to the total number of phone calls made by an individual.

This extensive evidence of autonomous nursing assessment and intervention by phone demonstrates the importance of this activity within professional oncology nursing practice. Although the amount of nursing time required is highly variable, workload planning and patient care scheduling must take into consideration the importance of this component of the nurse's role and allow sufficient time for phone-based assessment and intervention.

Funding Source: Faculty Research Support Grant, University of Rochester

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DYSREGULATED CIRCADIAN RHYTHMS IN PATIENTS WITH CANCER. Judith K. Payne, PhD, RN, AOCN®, Duke University School of Nursing, Durham, NC

The purpose of this presentation is to examine the role of dysregulated circadian rhythms in symptoms experienced by patients with cancer, specifically women with breast cancer and survivors, and describe a conceptual framework depicting components of the neuroendocrine system, stress response pathways, dysregulated circadian rhythms, patient profile, and opportunities for targeted restoration interventions.

Although the empirical evidence available on the role of dysregulated circadian rhythms and cancer-related symptoms is limited, there is substantial agreement as to the nature and significance of this topic in relation to symptom management in patients with cancer. Findings from ongoing research may be useful in the development and testing of interventions targeted at preventing or restoring dysregulated circadian rhythms in patients with cancer, specifically women with breast cancer and survivors.

Patients with cancer have been documented to have dysregulation in several important circadian systems. How an individual interprets and responds to the environment determines their responses to stress and ultimately affects symptoms and outcomes. Stress is thought to be a primary factor contributing to the underlying etiology of these abnormal biological rhythms, and therefore is hypothesized to be linked to symptoms and poorer outcomes.

It is anticipated that healthcare providers will have an increased awareness and recognize the clinical significance of dysregulated circadian rhythms in patients with cancer. Findings from research investigations will ultimately be used to develop and test targeted interventions to prevent or restore dysregulated circadian rhythms and improve quality of life in patients with cancer, specifically women with breast cancer and survivors.

An integrated literature search provided empirical evidence to support a biobehavioral conceptual model describing relationships among dysregulated circadian rhythms and cancer-related symmptoms. Proposed targeted interventions are examined and discussed.

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A BIOBEHAVIORAL MODEL OF IMMUNE RESPONSE AND ILLNESS IN WOMEN WITH BREAST CANCER. Moira Visovatti, MSN, RN, ACNP-BC, OCN®, University of Michigan, Ann Arbor, MI; Bernadine Cimprich, PhD, RN, FAAN, University of Michigan, Ann Arbor, MI; and Bonnie Metzger, PhD, RN, FAAN, University of Michigan, Ann Arbor, MI

Individuals with cancer can experience changes in their ability to function related to the immune system's response to the disease. Specifically, certain immune proteins or cytokines can induce clusters of interrelated behaviors called 'sickness behaviors'. These behaviors include: reduced food intake, decreased physical and social activity, and alterations in sleep. To date, little research has been done to examine sickness behaviors in individuals with cancer.

Thus, the purpose of this secondary analysis was to examine whether: 1) women with breast cancer exhibit sickness behaviors before any treatment, and 2) a relationship exists between sickness behaviors, cancer-related symptoms, and clinical laboratory data.

This biobehavioral model proposes that individuals with cancer can experience profound physiologic and behavioral changes that share a common neuroimmunologic mechanism.

Participants included 167 women newly diagnosed with localized breast cancer (M Age = 54 years). Before treatment, sickness behaviors were assessed using the Inventory of Functional Status Part III. Physical symptoms, cognitive symptoms, and laboratory data were assessed using the Symptom Distress Scale (SDS), The Attentional Function Index (AFI), Digits Forward and Backward (DFB), complete blood count. All measures had established validity and reliability.

The majority of women experienced typical sickness behaviors before any treatment. Specifically, participants reported sleeping less (86 %); not exercising (70 %), walking (67 %), or eating (62 %) as much as usual; and resting more during the day (59 %). A multiple regression analysis indicated a significant [$F(4, 154) = 13.47$, $p = 0.00$] predictive relationship between sickness behavior and physical and cognitive symptoms. Specifically, increased sickness behaviors were associated with more physical symptoms (SDS) and a perceived decline in cognitive functioning (AFI). Sickness behaviors were not significantly related to age, objective cognitive performance (DFB), or selected clinical laboratory data.

These findings are congruent with the hypothesis that common biological mechanisms may underlie the illness experience in cancer patients. Application of this theory to nursing has significant implications for understanding the illness experience of cancer patients and developing interventions to maintain optimal functioning and reduce symptom distress.

Funding Sources: National Institutes of Health, National Institute of Nursing Research, R29 NR04132, and the Walther Cancer Institute, Behavioral Cooperative Oncology Group

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THE ANALYSIS OF PUBLIC WEBSITES FOR CANCER PATIENTS AND CAREGIVERS. Lixin Song, University of Michigan School of Nursing, Ann Arbor, MI; Susan Maples, RN, BSN, University of Michigan School of Nursing, Ann Arbor, MI; Laurel Northouse, PhD, RN, FAAN, University of Michigan, Ann Arbor, MI; Ann Schafenacker, RN, MSN, University of Michigan School of Nursing, Ann Arbor, MI; Gail Newth, University of Michigan School of Nursing, Ann Arbor, MI; Lorie Friedman, RN, BSN, University of Michigan School of Nursing, Ann Arbor, MI; and Nancy Lunsford, RN, BSN, University of Michigan School of Nursing, Ann Arbor, MI

Research has shown that the Internet is the second most utilized source for cancer information, with health care professionals ranking first. The Internet provides patients and their families with the most current information. Investigators have found that about 39% of cancer patients use the Internet directly, and an additional 15% to 20% use it "indirectly" through family and friends to obtain community support and commercial services. Most importantly, they use the web to seek explanatory information about their illness and care.

This study aims to identify the service gaps by examining the content of available Internet sites that address different aspects of care for cancer patients and/or their family caregivers.

Grounded theory research method is adopted.

The constant comparative method is used to identify the core categories of information provided by the public websites in the U.S., including 63 NCI-designated Comprehensive Cancer Centers, 21 organizational members of the National Comprehensive Cancer Network, six major cancer-related organizations (e.g., NCI, ACS, etc.), and 11 non-cancer caregiver organizations (e.g., Family Caregiver Alliance).

These websites address primarily patient-related issues (e.g., symptom management, insurance, etc.) and services (e.g., support groups, consultation, etc.). Information pertaining to caregivers mainly focuses on their care for the patients, but not for themselves. Three of the major cancer-related organizations provide brief self-care information for caregivers. The websites of the 11 non-cancer caregiver organizations target caregivers of patients with various chronic health problems, with a heavy focus on Alzheimer's disease. They do offer suggestions for caregiver self-care strategies, but it is unclear if the information provided is evidence-based. The readability of the websites ranges from 4th to 12th grade. Multi-media, such as webcasts, newsletters, and video clips, are sometimes used, but the websites are rarely interactive.

Overall, public websites provide essential health-related information to cancer patients and their family caregivers. Yet the

content of these websites is very limited and seldom addresses caregivers' issues.

Implications: There is a need for well-developed websites with evidence-based information that address the needs of both cancer patients and their family caregivers.

Funding Source: Behavioral Cooperative Oncology Group at the Indiana University

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FALL PREVENTION FOR THE ONCOLOGY PATIENT IN A HOSPITAL SETTING. Kristi Sanborn, RN, BSN, MS, OCN®, Mission Hospitals, Asheville, NC; Amanda Williams, RN, OCN®, Mission Hospitals, Asheville, NC; Diana Wortham, RN, MSN, OCN®, Mission Hospitals, Asheville, NC; and Cathy Hebert, RN, GCNS-BC, Mission Hospitals, Asheville, NC

Falls are common among hospital patients. Though many people with cancer have multiple risk factors for falls, little information is found in research regarding falls in oncology patients. Further study is needed to prevent falls in this population.

Many strategies have been proposed for fall prevention, however most fall prevention interventions are not evidence-based, yielding no reduction in fall rate, This study seeks to develop an assessment tool specific for high fall risk oncology patients, and to determine evidence-based fall prevention strategies to reduce the fall rate on our 33 bed progressive care oncology unit.

NPSG goals for 2008 include implementation of fall reduction programs. The current fall rate for our unit is 4.82; above hospital and national averages. CMS guidelines for 2008 require the hospital to assume costs for patient falls. In keeping with the ONS strategic plan, this research focuses directly on how nursing interventions can affect patient outcomes.

A retrospective analysis of charts, staffing statistics and analysis of Trendstar data continues for comparison of data for oncology patients who have and have not fallen and non-oncology patients. Nurses present for patient falls are debriefed to obtain additional characteristics such as patient attitude. Evidence-based interventions such as increased education and hourly rounding are being implemented. The NDNQI fall rate is used to determine outcomes.

Some preliminary results for 2007 show 65% of patients who fell were on benzodiazapenes compared to 56% of non-fallers, agreeing with the literature. Toileting was involved in 66% of falls. Though a study by Dunton predicted higher staffing levels would result in fewer falls, 92% of our falls occurred with staffing at or above Medicus. 65% of those who fell were female compared to 51% of non-fallers. These results show predictive characteristics for oncology patients at higher fall risk. Further unit-based and hospital-wide comparative analysis is pending and should yield parameters for evidence-based practice in fall prevention.

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EVIDENCE-BASED PRACTICE: A CORNERSTONE FOR BUILDING A RESEARCH AGENDA. Patricia Potter, RN, PhD, FAAN, Siteman Cancer Center at Barnes-Jewish Hospital, St. Louis, MO

The purpose of this presentation is to describe how a formal Evidence-Based Practice (EBP) program can be a catalyst for creating an organization's nursing research agenda.

The goal of the EEE program is to develop EBP mentors and clinicians who can use evidence to improve oncology nursing practice. An EBP mentor may be a staff member, practitioner, or manager. The program includes a two day multi-disciplinary seminar for mentors, a semi-annual refresher program, and a four-hour Champions Class for clinicians who are unable to attend the seminar. The EEE program leaders coach the EBP mentors, offering ongoing consultation for EBP projects. Oncology EBP mentors over the last two years have initiated projects involving hourly rounding, application of EBP into a nursing fellowship program, and implementation of the Oncology Nursing Society PEP cards across services.

In 2005, The Siteman Cancer Center (SCC) at Barnes Jewish Hospital and Washington University School of Medicine hired a nurse researcher to coordinate an oncology nursing research program. Although part of a large academic medical center, SCC had not developed a nursing research agenda. Subsequently, the development of an EBP program, Evidence Equals Excellence (EEE), has successfully triggered scholarly inquiry, resulting in EBP and research projects. The program has enabled SCC to identify relevant clinical issues and clinicians with research interests so that a strategic research agenda could be created. With an agenda in place, an organization is more equipped to set research priorities, allocate resources, and design a series of studies that will contribute to the growth of oncology nursing knowledge and practice.

An EBP program creates a research-friendly environment conducive to the generation of clinical questions that promote research opportunities. Select EBP mentors have collaborated to conduct initial research, the findings of which have led to the creation of the SCC nursing research agenda. A team of clinicians and research scientists have identified patient and family caregiver education as the core of the agenda. Initial exploratory research identified the learning needs of patients and family caregivers. These findings now provide direction for future interventional studies.

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BUILDING A COLLABORATIVE PHYSICIAN REFERRAL PROCESS TO PROMOTE COMMUNITY RESOURCES THROUGH EDUCATION. Marsha Richardson, RN, BSN, OCN®, Parrish Medical Center, Titusville, FL

A need to enhance interdisciplinary collaboration and promote quality oncology patient care in an era of decreased resources and enhanced expectations.

The inconsistencies in practice among rural surgeons/oncologist became evidently clear in fall of 2007. Discussion of community referral to the American Cancer Society was not being utilized by many of the physicians. The aim of the project is to increase awareness of community resources. The resources are utilized at fifteen percent locally compared to sixty percent nationwide

The Diffusion of Innovation (DI) was applied not only due to the communication process of implementing a new idea but how the recipient gets the information and how it is passed on to others. How the physicians accepted or rejected the education will be a key in the outcomes.

Six private practice offices identified by the American Cancer Society database were selected in the specified rural area to implement educational seminars from January through November 2008. A sample of three highest and three lowest physician referrals were chosen. A baseline questionnaire was used to identify barrier in making the referrals and to identify educational needs. Ninety-five percent (N=6) of the physicians attended the sessions scheduled over three months. The in-services were thirty to forty five minutes in length and were well received by the physicians. A phone call two weeks after educational seminar was conducted for follow up and to enhance compliance.

By identifying the barriers to making referrals to the ACS, a process can be set in place to increase referral by local physician offices and ultimately increase access to the resources to benefit the local population. Future benefits may include studies addressing the impact of community resources on patient outcomes when utilizing the resources. The project has impacted the number of referrals based on the ACS database in the first quarter but further evaluation at completion of project is promising.

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RAPID CYCLE LEARNING FOR NURSE RETENTION: WHAT WE LEARNED FROM PLANNING, THEN DOING. Shirley Trout, PhD, Nightingale Expressed, Waverly, NE; Jan Boller, PhD, Western University, Pomona, CA; Patty Wooten, BSN,

RN, Self-Employed, Santa Cruz, CA; and Deb Gauldin, RN, Self-Employed, Raleigh, NC

The present nursing shortage is predicted to be near crisis level in the coming two decades unless recruitment and retention efforts radically change the projections of today's experts. Adequate nurse staffing is critical to patient safety, positive work environment and other important health outcomes impacted by nurse retention. Resources are limited, especially time, money and staff. Nurse retention efforts must become more effective while using significantly fewer of these resources. This session describes the way the rapid-cycle improvement model, adopted by the Institute for Healthcare Improvement informed a unique, new nurse retention program. The session investigates the validity of the PSDA approach for this emerging program and explores what was learned from the early "Doing" phase of the program. Opportunities for discipline-specific and collaborative research will be explored.

The purpose of this evidence-based practice was to plan and deliver a nurse retention program that causes participants to decide to stay in nursing and to renew their passion for nursing using the least amount of time, money and staffing hours. With the program well-planned, based on evidence from a range of relevant disciplines and practical experience, the program was delivered before all aspects were studied. This rapid-cycle approach was deemed appropriate given the innovative nature of the intervention and the severity and urgency of the need.

During this one-day, off-site nurse retention retreat, nurse-participants every detail—from pickup to delivery—was handled by retreat faculty and staff. This comprehensive approach eliminated large financial outlay for extraneous expenses and allowed program designers to make every element of the program serve a specific learning purpose.

Of the 13 participants, five provided testimonies that they had been considering leaving nursing, but recommitted themselves to their profession as a result of the retreat. Every nurse indicated a renewed spirit for nursing and felt emotionally replenished.

This approach to nurse retention results in nurses being physically, emotionally and spiritually renewed. This is critical for nurses serving in the high-stress, emotionally draining area of oncology nursing.

Palliative and End-of-Life Care

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PERSPECTIVES OF NOVICE PEDIATRIC ONCOLOGY NURSES REGARDING END-OF-LIFE CARE COMMUNICATION. Verna Hendricks-Ferguson, RN, PhD, Goldfarb School of Nursing at Barnes-Jewish College, St. Louis, MO; Claretta J. Dupree, PhD, RN, Medical College of Wisconsin Pediatric Palliative Care Program, Milwaukee, WI; Joan E. Haase, RN, PhD, Indiana University School of Nursing, Indianapolis, IN; and Kathleen J. Sawin, RN, DNS, FAAN, Children's Hospital of Wisconsin, College of Nursing, University of Wisconsin, Milwaukee, WI

Little is known about nurses' perceived role in initiating and maintaining communication about palliative care/end-of-life (PC/EOL)and how they communicate with dying children and their families during PC/EOL. PC/EOL communication can be especially difficult for pediatric oncology nurses who have limited experience. To better assist novice nurses in gaining skills, it is important to understand their initial experiences in PC/EOL communication.

This study, describing novice nurses' experiences of PC/EOL communication, is part of a larger study focused on the perspectives of pediatric oncology nurses with varying levels of experience.

The study used a unique combination of group-as-a whole theory and empirical phenomenology, a method recently described in the literature by Kooken, Russell and Haase.

Three focus groups were conducted at three Midwest pediatric hospitals with pediatric oncology nurses (n=14) with less than one year of experience. Data were analyzed using Colaizzi's step-by-step approach.

Findings: The experience of novice nurses included the perception that they had a "Sacred Trust to Care for the Child and Family" facing death. However, the nurses felt they lacked skill and experience to openly discuss what was perceived as "Elephant in the Room" with children, families, and other health care providers. Nurses further emphasized the difficulty of initiating PC/EOL discussions with dying children and their families because the nurses were "Struggling with Many Unknowns." Nurses considered their first experiences of witnessing a child's death as a "Kaleidoscope of Death." The universal importance of being mentored in PC/EOL communication during their first-death experience was like "Needing Training Wheels in Connectedness." These new nurses reflected on their observations of experienced staff, many of whom taught them about the essence of communication at this difficult time and how to "Be Present with an Open Heart."

Implications: Beginning pediatric oncology nurses need substantial education, support and mentoring to learn the skills of communicating PC/EOL with the family of a dying child. The findings of this study will contribute to the development of a PC/EOL communication intervention for beginning nurses who work with children with cancer and their families.

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PARENTAL END-OF-LIFE DECISION MAKING IN PEDIATRIC BMT. Cindy Rishel, RN, BSN, OCN®, University Medical Center, Tucson, AZ

Blood and marrow transplantation (BMT) is an increasingly acceptable treatment for children with life threatening malignant diseases. Survival rates for transplant recipients vary from 25% to 50%. Children typically die in the hospital after a prolonged stay. The parental decision to allow a child to die a natural death may occur from mere minutes to hours or weeks prior to the child's death. Parental decision making, a non-linear process, is influenced by the knowledge, beliefs, and values of the family. Parents are known to rely on the nursing staff as one source of information for decision making.

The purpose of this study is to better understand the process of parental end-of-life treatment decision making in pediatric blood and marrow transplantation with a focus on the salient factors that facilitate family satisfaction with the process.

The framework depicts potential factors involved in parental decision making, including contextual factors and others that may explain parent conflict or satisfaction with the process and with the decision made.

Grounded theory methodology will be used to answer the research questions. The sample will consist of up to 20 parents, obtained through theoretical sampling at a large medical center in-patient BMT unit. A semi-structured questionnaire will be used to guide the interviews. Data will be analyzed as it is collected using constant comparative analyses, various coding schemes, and other strategies of grounded theory.

The research questions are: (1) what parental knowledge, beliefs, and values are used in end-of-life treatment decision making? and (2) what factors facilitate or inhibit parental decision making for end-of-life treatment?

It is anticipated that the results of this study will generate a theory to be used by nurses caring for these children to facilitate parental decision making concerning end-of-life treatment for their child. Nurses will become better prepared to identify breakdowns in the decision making process, develop interventions to assist parents to move forward, thus helping parents to participate more fully in the process.

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END-OF-LIFE ISSUES FOR GERIATRIC ONCOLOGY PATIENTS WITH SHORT STAYS IN HOSPICE.

Cheryl Brohard-Holbert, MSN, RN, AOCN®, Houston Hospice, Houston, TX

Approximately one third of all deaths in the United States occur in persons under hospice care with 50% of the deaths caused by cancer. The average number of days enrolled hospice is 21 days and this figure has remained relatively stable since 2000; however, there are a large percentage of patients who are admitted to hospice within a week of their death. Those patients with short length of stays are vulnerable to multiple, distressing, unrelieved symptoms, the lack of or poor transitions from acute to end-of-life care, and poor communication. By understanding the patient issues with short length of hospice stays, then the interdisciplinary team can address their physical, psychological, functional, and social issues.

The problem with short length of stays in hospice is the need for resolution of these psychophysical, functional, and social issues of the patient and family for the interdisciplinary team. The primary aim of this descriptive study is to explore the end-of-life psychophysical, functional, and social issues for geriatric oncology patients with short length of stays. The secondary aim of this study is to identify resources and services appropriate for patients with short length of stays.

McMillan's Hospice Quality of Life Index (HQLI) will be used as a framework to identify the issues associated with psycho/physiological, functional, and social/spiritual well being in hospice patients with cancer.

This study will examine length of stay with respect to the three subscales of the HQLI. A retrospective examination of medical records using the assessment of the interdisciplinary team including post-mortem notes from the bereavement team. The HQLI has shown to be a reliable and valid tool for oncology patients in hospice home care and inpatient hospice settings. The sample will consist of hospice patients 65 years old and older with a cancer diagnosis during a three month period with a length of stay in hospice of seven days or less. Descriptive statistics will be used for analysis.

Preliminary findings show the HQLI and its subscales can be used to identify the contributing factors associated with length of survival. The majority of patients with a shortened length of stay are cared for in the inpatient hospice unit.

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ONCOLOGY CLINICIANS' PERSPECTIVES ON PROVIDING PALLIATIVE CARE FOR THEIR PATIENTS WITH ADVANCED CANCER.

Marie Bakitas, DNSc, ARNP, AOCN®, FAAN, Norris Cotton Cancer Center, Lebanon, NH; and Kathleen Doyle Lyons, ScD, Dartmouth College, Department of Psychiatry, Lebanon, NH

Clinician concern that patients will "lose hope" is a common reason for late referral to palliative care (services).

Towards the conclusion of our 5 year, "early identification", palliative care (PC) RCT, we suspected that aspects of our intervention were being adopted as "usual care" (UC). For example, we observed that oncologists were now routinely referring newly diagnosed advanced cancer patients for PC team assessment. We conducted a qualitative supplementary study to explore study participants' and oncology clinicians' perspectives about the UC provided to advanced cancer patients to determine whether and to what extent there was intervention "seepage" into the UC group. Here we report on the oncology clinicians' perspectives on the UC of advanced cancer patients.

A qualitative descriptive approach guided the development of this supplementary study.

All oncology clinicians at our NCI-designated comprehensive cancer center were invited to participate in an interview about the UC of patients with advanced cancer. An interview guide developed and pilot tested by the investigators explored clinicians' definition of PC, understanding of the study intervention compared with UC, and the ability to discriminate between the intervention and a PC team assessment. Content analysis was conducted to identify codes and themes relevant to the specific aim.

35 of 38 eligible clinicians were interviewed between September and December 2007. Mean age was 48 (range 34-60), half were female; 21 (75%) were physicians, representing oncology (n=25), hematology (n=7) and radiation oncology (n=3). Mean years in oncology was 15 (range 4-30) and mean years employed at the cancer center was 11 (range 1.5-35). Clinicians described a holistic definition of PC and their personal triggers for PC referral (primarily new diagnosis of incurable cancer, pain management, and complex social situations). Most described that PC referral resulted in positive outcomes. Rarely, PC referral did not "go well" due to patient denial or lack or preparation for referral. Our findings confirmed that since the beginning of our RCT most oncology clinicians routinely referred patients to PC services at the time of new diagnosis and often were not able to discriminate between PC services and the RCT intervention.

Funding Sources: Norris Cotton Cancer Center/Prouty Intramural Grant; NCI RO1CA101704-2; T32NR008346 Research Training; Self and Family Management

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ONCOLOGY NURSES' PERCEPTIONS OF OBSTACLES AND SUPPORTIVE BEHAVIORS IN END-OF-LIFE CARE.

Renea Beckstrand, PhD, RN, CCRN, Brigham Young University, Provo, UT; and Josie Moore, RN, BS, OCN®, Provo, UT

Every year 1.4 million people are diagnosed with cancer; 560,000 die of cancer annually. With so many cancer related deaths, oncology nurses are providing EOL care on a daily basis.

To investigate perceived barriers and supportive behaviors in providing EOL care to oncology patients.

Survey. A random sample of 1000 oncology nurses was obtained from ONS. Usable responses were received from 375 nurses for a response rate of 41.3%.

National sample was geographically dispersed and random. Cronbach's alpha for the 26 obstacle size items was high at .92. Cronbach's alpha for the 24 supportive behaviors was high at .90.

Eight of the top 10 obstacles directly related to family attitudes/behaviors. The highest rated obstacle was nurses having to deal with angry family members, followed closely by families not accepting the patient's poor prognosis. Two similar top ten obstacles were dealing with anxious family members (4th) and the family being overly optimistic about the patient's poor prognosis (6th). In addition, families not wanting the patient to be overly sedated (7th), frequent phone calls from various family members for updates on patient condition (8th), and intra-familial fighting about whether to continue or stop aggressive treatment (9th) were also in the top ten largest obstacles.

Oncology nurses identified being called away from the dying patient and family to care for another patient at third. The fifth ranking obstacle involved physicians who insist on aggressive care until the patient is actively dying. Patients having pain that is difficult to control or alleviate ranked 9/10 largest obstacles.

Two of the top 10 supportive behaviors identified by oncology nurses were things nurses could control: allowing family members adequate time alone with the patient after death and providing a peaceful bedside scene after the patient has died. The second most helpful factor was having social work or palliative care as part of the team.

Oncology nurses are dedicated, experienced and comfortable handling most issues in EOL care. Recommendations include strategies to effectively interact with angry, anxious, and/or overly optimistic family members, and to work with family members to understand and accept the prognosis and dying process of their loved one.

Funding Source: Brigham Young University

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PREDICTORS OF ADVANCE DIRECTIVE STATUS IN OUTPATIENTS WITH ADVANCED CANCER. Caitlin Brennan, RN, Case Western Reserve University, Cleveland, OH; Amy Lipson, PhD, Case Western Reserve University, Cleveland, OH; Barbara Daly, PhD, RN, Case Western Reserve University, Cleveland, OH; and Sara Douglas, PhD, RN, Case Western Reserve University, Cleveland, OH

Advance directive (AD) documents help to ensure that patients' healthcare preferences are upheld in the event of incapacitation. The two most common ADs are the living will and durable power of attorney for healthcare. Several studies have described differences in and predictors of the AD status of inpatients. Few studies on ADs have been conducted in the outpatient oncology population.

This study aims to identify predictors of AD status in outpatients with advanced cancer.

The selection of variables for this study is based on the Anderson model of healthcare utilization, which postulates that predisposing, enabling, and need factors contribute to healthcare utilization.

Research questions are as follows: Are age, gender, and race (predisposing factors) significant predictors of AD status? Are SES, education, and social support (enabling factors) significant predictors of AD status? Are morbidity level and ECOG status (need factors) significant predictors of AD status? This study (n=260) is being conducted as part of a larger NIH-funded study. The setting is an NCI-designated cancer center within an academic medical center in a metropolitan area of the Midwestern United States. Eligibility criteria include patients with a stage 3 or 4 thoracic, GI, or GYN cancer diagnosis who are cognitively intact, age 18 or older, and able to speak or read English. Data will be analyzed using descriptive statistics, correlation and logistic regression analyses. Hypotheses are that older age, Caucasian race, and higher SES, education, social support, morbidity level, and ECOG status will be significant predictors of AD status, as evidenced by Anderson's model.

Results will provide researchers with knowledge of the predictors of AD status in the outpatient oncology population. Nursing implications include providing additional data to nurses regarding which patients will be more or less likely to have an AD. Barriers to AD status may be identified that will assist nurses in educating and encouraging patients and families to discuss and initiate ADs.

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Pediatric Oncology

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FACTORS RELATED TO HEALTH DISPARITIES IN HISPANIC CHILDREN TREATED FOR CANCER. Karrie Hendrickson, PhD, MSN, RN, Yale University School of Nursing, New Haven, CT; and Ruth McCorkle, PhD, FAAN, Yale University School of Nursing, New Haven, CT

The incidence of cancer in Hispanic children in the U. S. is second only to the incidence in white children. Hispanic children diagnosed with any type of cancer are significantly more likely to die from their disease than are children belonging to other ethnic categories. While recommendations exist for treatment, there is little information about the socio-demographic and hospital resource use factors that may impact the course of cancer in Hispanic children.

This study's purpose was to further our understanding of the socio-demographic (age, socio-economic status, gender) and hospital resource use factors (length of stay, number of visits, PICU admission, cost) that may affect the treatment course and outcomes (mortality) of Hispanic children with cancer.

Specific Aims

1. Describe socio-demographic and hospital resource use factors related to Hispanic children with cancer diagnosed between 2000 and 2004 who received treatment for their disease at a comprehensive cancer center in the Northeast.
2. Examine the differences in Hispanic children's socio-demographic and hospital resource use factors compared to those of non-Hispanic children who received treatment during the same period and at the same facility.

This study was guided by Production Theory as applied to hospital economic function, assessing hospital resource use in terms of efficiency and effectiveness.

Design: A secondary analysis of hospital administrative data combined with hospital tumor registry data collected as part of routine patient care.

Sample: 50 Hispanic children diagnosed with childhood cancer and treated by surgery, chemotherapy, and/or radiation at a Northeastern cancer center between fiscal years 2000 and 2004.

Measurement and Analysis: Descriptive statistics and bivariate statistics: t-tests and ANOVAs. Efficiency was measured by hospital admission (inpatient and outpatient), length of stay, total cost, and variable direct cost and effectiveness was measured by mortality and PICU admission.

Hispanic children tended to live in households with significantly lower socio-economic status than non-Hispanic children. On average, Hispanic children had more visits to the cancer center than did non-Hispanic children and cost the hospital significantly more to care for. Finally, a higher percentage of Hispanic children died (18.2%) within three years of diagnosis than non-Hispanic children (8.9%). Future intervention studies are needed to target these disparities.

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PSYCHOLOGICAL ADJUSTMENT OF TAIWANESE CHILDREN AND ADOLESCENTS WITH CANCER. Li-Min Wu, Kaohsiung Medical University, Kaohsiung, Taiwan; Joan E. Haase, Indiana, IN; Chi-Chun Chin, Kaohsiung, Taiwan; and Chung-Hey Chen, Kaohsiung, Taiwan

To develop the psychological intervention in children and adolescents with cancer while receiving chemotherapy.

To explore the psychological adjustment of Taiwanese children and adolescents with cancer.

An individualized and preventive psychosocial assessment of each child remains a priority because children's thinking and appraisal of what causes their illness and its treatment is a significant factor in adjustment to treatment. Hence, an empirical phenomenological was approached.

A pediatric hematology/oncology clinic in the southern of the Taiwan. Twelve children and adolescents ages 9 to 18 who were receiving chemotherapy were interviewed. Open-ended interviews were conducted in a quiet setting. Interview data were transcribed and analyzed using Giorgi's four-step procedure

Two major theme categories were identified from the data. Losing Confidence included: Physical and Psychological Suffering, and Rebuilding Hope included 1) Thought Restructuring, 2) Revaluing What I Have, 3) Envisioning Hopeful Images. Study findings provide guidance to instrumentation on coping in Taiwanese children and adolescents with cancer and will also be useful to guide intervention development to address psychological adjustment in future studies.

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NOCTURNAL SLEEP-WAKE ACTIVITY IN ADOLESCENTS RECEIVING CHEMOTHERAPY. Amy Johnson, RN, MSN, Oregon Health & Science University, Portland, OR

Sleep disturbances and other symptoms are distressing for adolescents receiving chemotherapy and negatively affect quality of life. Possible causes of sleep disturbance include age, pubertal development, chemotherapy, and symptoms.

Describe nocturnal sleep-wake activity in adolescents during chemotherapy.

This analysis was part of a prospective, cross-sectional study exploring sleep, symptoms, and quality of life in adolescents (10-19 years) receiving chemotherapy.

Data were collected from 50 adolescents receiving chemotherapy (primary, secondary, or relapse) regardless of diagnosis. Actigraphy data were collected for 7 days and included measures of sleep start and end time, true sleep time (TST-sleep minutes from sleep start to sleep end), wake after sleep onset (WASO-wake minutes from sleep start to sleep end), and sleep efficiency (percentage of sleep). Diary data included bedtimes, wake-times, and daytime sleepiness (1 not sleepy, 5 very sleepy). A questionnaire assessing weekday/weekend bedtimes/wake-times was used to measure baseline sleep patterns.

Mean sleep start time during chemotherapy was 23:11 (11:11 pm) ± 1:05 and sleep end time was 8:52 ± 1:10). Mean TST during chemotherapy was 500 ± 60 minutes, WASO 80 ± 29 minutes, and sleep efficiency 82% ± 5%. Mean daytime sleepiness score was 2.7 ± .83. Paired t-tests revealed significant statistical differences between bedtimes on weekdays prior to diagnosis (M = 21:52 ± 1:08) and during chemotherapy (M = 23:04 ± 1:04) $t(40) = -6.89$; $p < .001$, and wake-times on weekdays prior to diagnosis (M = 6:36 ± :34) and during chemotherapy (M = 8:55 ± 1:16) $t(40) = -9.71$; $p < .001$. Adolescents had fragmented sleep and poor sleep efficiency. They kept sleep schedules more consistent with their weekend schedules prior to diagnosis, going to bed and getting out of bed later. Future interventions will need to focus on improving sleep during chemotherapy, and also anticipating potential problems adjusting to weekday school schedules after treatment.

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USING A MOBILE PHONE WITH YOUNG PEOPLE TO MONITOR AND MANAGE CHEMOTHERAPY RELATED SYMPTOMS.

Faith Gibson, PhD, MSc, RSCN, RGN, UCL Institute of Child Health, London, Great Britain; Susie Aldiss, Psychology BSc (Hons), Health Psychology MSc, UCL Institute of Child Health, London, Great Britain; Sheila Lane, BSc, PhD, MBBS, MRCP, MRCPCH, Oxford Children's Hospital, Oxford, Great Britain; Roma Maguire, MSc, BSc, RGN, University of Stirling, Stirling, Great Britain; Meurig Sage, PhD, Kelvin Connect, Glasgow, Great Britain; and Nora Kearney, Med. Science Clinical Oncology, RGN, University of Stirling, Stirling, Great Britain

This intervention has real potential to improve patient outcomes and the healthcare system as a whole.

It is a 4-phase development study seeking to answer the question: does a mobile phone based remote symptom monitoring system reduce the severity and duration of chemotherapy related toxicity and improve quality of life and psychosocial outcomes in young people with cancer?

It is underpinned by the United Kingdom Medical Research Council complex intervention evaluation framework.

This study involves young people aged between 13 and 18 years, parents and health professionals. Phase 1 involved young people identifying the symptoms to be assessed. Phase 2 considered the feasibility and acceptability of using this type of technology using perception questionnaires and semi-structured interviews. Phase 3 is underway and involves working with young people and health professionals to: develop self-care guidelines and a risk modeling system for alerts; test all procedures through a pilot randomized controlled trial (RCT) as well as education and training of clinical staff to use the system. Data analysis is both quantitative and qualitative. Phase 4 is due to start September 2008.

Early findings suggest that young people and parents find numerous benefits of using the ASyMS-YG system including: reassurance that they are being monitored at home, the importance of having a record of symptoms to help them visualize symptom patterns which then facilitates communication with health professionals about their symptoms when attending hospital. Health professionals have commented on the system's potential to give young people more independence and control over symptoms as well as facilitating the implementation of timely interventions as a result of early detection of symptoms. This paper will present data from phases 1, 2 and 3, with a preliminary introduction to phase 4, in order to explore young peoples, parents and health professionals' perceptions of the system and its potential for home monitoring and symptom management.

Funding Source: Teenage Cancer Trust and CLIC Sargent

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CHILDREN'S SLEEP, PAIN AND FATIGUE DURING INDUCTION AND CONSOLIDATION PHASES OF CHEMOTHERAPY FOR LEUKEMIA: PRELIMINARY FINDINGS.

Vivian Gedaly-Duff, DNSC, RN, Oregon Health & Science University, Portland, OR; Kathryn Lee, PhD, RN, University of California, San Francisco, CA; Kyle Johnson, MD, Oregon Health & Science University, Portland, OR; Lillian Nail, PhD, RN, Oregon Health & Science University, Portland, OR; Amy Johnson, MSN, RN, Oregon Health & Science University, Portland, OR; Joanne Price, MA, Oregon Health & Science University, Portland, OR; and Yupaporn Pongsing, MS, RN, Oregon Health & Science University, Portland, OR

There is limited data regarding symptoms in children (7-19 years of age) during treatment for their ALL.

This analysis will describe sleep, pain and fatigue in children/adolescent during induction and consolidations phases.

Symptom research has focused on a single symptom yet children with cancer usually experience multiple symptoms.

This is a prospective, longitudinal study describing pain, sleep and fatigue in children with leukemia using wrist actigraphy and diaries. Data were from 24 children for 3 nights during the two phases of chemotherapy. Pain and fatigue were measured for mornings and evenings using visual analog scales (VAS) (0 none – 4 most) in diaries. Sleep was reported as total sleep time (TST, number of minutes scored as sleep during the sleep period), wake after sleep onset (WASO, number of minutes scored as wake during the sleep period), and %Sleep.

Pain. Morning scores averaged 1.05±1 for induction and 0.5±0.8 for consolidation. Evening scores averaged 0.6±0.9 and 0.2±0.5, respectively. Morning scores were higher than evening pain scores in both induction $t(73) = 3.9$ ($p < .01$) and consolidation $t(63) = 2.8$ ($p < .01$). Pain was significantly higher during induction than consolidation in the morning $t(58) = 3.3$ ($p < .01$) and evening $t(57) = 4.4$ ($p < .01$).

Sleep. TST for induction averaged 540±133 and for consolidation was 486±110, WASO averaged 67±37 and 61±30, and percent sleep averaged 88%±6 and 88%± 5. TST was higher during induction than consolidation ($t[54] = 3.1$, $p < .01$). There were no significant differences in minutes of WASO or percent sleep between induction and consolidation.

Fatigue. Morning scores averaged 1.28±1 for induction and 1.02±1 for consolidation. Evening scores averaged 1.83±1 and 1.65±1, respectively. Evening scores were greater than morning fatigue during induction $t(73) = -4.0$ ($p < .01$) and consolidation $t(63) = -4.3$ ($p < .01$). There were no significant differences in fatigue scores between induction and consolidation.

Pain was higher during induction. Sleep was fragmented and fatigue present in both phases. Learning more about symptom patterns will provide a foundation for interventions to improve symptom management.

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INFLUENCE OF THE HOSPITAL ENVIRONMENT ON SLEEP IN CHILDREN WITH CANCER.

Lauri Linder, APRN, CPON®, University of Utah College of Nursing, Salt Lake City, UT

Cancer-related symptoms impact patient morbidity and mortality both during and following completion of therapy. Disturbed sleep has received attention as a research priority; however, few studies have included children with cancer. Studies of critically ill children indicate that hospital environmental stimuli impair both sleep quantity and quality. Frequent sleep disruptions decrease slow wave sleep which is essential for immune system regulation, tissue healing, and growth.

The proposed study will examine influences of environmental stimuli on sleep-wake patterns among hospitalized children with cancer during an inpatient chemotherapy admission. Specific aims include:

- Describe nighttime sleep-wake patterns among children receiving inpatient chemotherapy.
- Describe nighttime patterns of environmental factors and relationships with clinical variables.
- Describe relationships among nighttime sleep-wake patterns, environmental variables, and fatigue.

The UCSF School of Nursing Symptom Management Model will guide the study. The domains of nursing science: person, environment, and health & illness provide a context for the study.

A descriptive multiple-case study design will be used. Participants will include 15 hospitalized children with cancer between 5 to 12 years of age. Data will be collected during an admission for chemotherapy lasting 3 days or more. Wrist actigraphs and sleep diaries will measure sleep-wake patterns. Fatigue will be measured daily using 24-hour versions of the Fatigue Scale for 7- to 12-Year Olds and the Fatigue Scale: Parent Version. Ambient light and temperature will be measured using the HOBO® U12-012 Data Logger. Sound will be measured using a digital sound pressure level meter.

Planned analyses will emphasize individual variation through within-subjects analyses. Group and individual descriptive statistics will be generated for each sleep variable. Time series plots of sleep variables will be generated for each individual. A fixed-effects model analysis of variance will evaluate within-group changes in sleep variables.

This study will be among the initial studies investigating sleep-wake pattern disturbances among hospitalized children with cancer. The study will evaluate the feasibility of the measures in a pediatric inpatient unit and their potential use in younger children. Study findings will inform hypotheses for future studies and guide development interventions to improve sleep outcomes in hospitalized children with cancer.

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Primary and Secondary Prevention

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SCREENING BARRIERS AND FACILITATORS IN RELATIVES OF BLACK COLON CANCER PATIENTS. Kathleen Griffith, PhD, CRNP, AOCN®, Johns Hopkins University, Baltimore, MD; Jennifer Wenzel, PhD, RN, Johns Hopkins School of Nursing, Baltimore, MD; Keith Plowden, PhD, RN, University of Maryland School of Nursing, Baltimore, MD; Juanita Gladney-Gillis, RN, BSN, Johns Hopkins Hospital, Baltimore, MD; and Jerilyn Allen, PhD, RN, FAAN, Johns Hopkins School of Nursing, Baltimore, MD

African Americans have low rates of colorectal cancer (CRC) screening.

Predictors of screening among those with a family history of the disease, where rates may be even lower, have not been studied. The purpose of this study is to explore barriers and facilitators of CRC screening among African Americans who have first-degree relatives CRC.

A hermeneutic/phenomenological approach guides the study; this relies on the belief that people make meaning from their lives through narrative construction.

Focus groups are being conducted among African American s age > 40 with > one first-degree family member with a history of CRC. Snowball sampling is being used to increase enrollment. Data will be analyzed through a reflexive process of transcript reading, categorization, data reduction and interpretation; thematic analysis will be used to group data.

To date, 11 individuals have participated in a total of 3 focus groups. Several preliminary themes surrounding CRC screening barriers have already emerged: 1) "Death starts in the colon" : culture of silence and fatalism. Even when symptomatic, reticence or outright screening avoidance was reported; 2) "don't want to be used as a test subject": there remains an ongoing fear in the African-American community that they will be tested unethically; 3) "If it's not broke, don't fix it": screening avoidance related to disease and screening myths were common, i.e., CRC fatalism, CRC is a disease affecting men or bisexuals; CRC results from an ingested virus. Screening facilitators included: 1) "Through pain there is gain": reflected a desire to stay alive to take care of family and protect children and grandchildren; 2)" hearsay…frightens people away": Altering existing educational programs by offering culturally-specific, accurate educational materials and improving advertising for current screening programs were suggested repeatedly as effective ways to improve screening.

Promoting screening across generations, beginning with education in schools, developing and disseminating culturally appropriate educational materials within the community as well as encouraging older individuals to get screened in order to take care of their families, may be appropriate interventions to test in this population affected by cancer disparities.

Funding Sources: ONS Foundation Post-doctoral Fellowship Award (RE02); T32 NR0 7968-05 (NINR)

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FACTORS RELATED TO BREAST CANCER SCREENING AMONG KOREAN WOMEN. Young Eun, PhD, Gyeongsang National University, Jinju, Korea; Eunice Lee, PhD, College of Nursing, UIC, Chicago, IL; MeeOk Gu, PhD, Gyeongsang National University, Jinju, Korea; KyungSook Choi, PhD, Chungang University, Seoul, Korea; and MyungHee Jun, PhD, Daejeon University, Daejeon, Korea

Significance: Breast cancer screening rates among Korean women are low, while breast cancer incidence and mortality are rapidly increasing, and breast cancer is the most common type of cancer among Korean women.

Problem and Purpose: The purpose of this paper is to assess breast cancer screening rates and explore factors related to all three measures of breast cancer screening: mammography, clinical breast examination (CBE), and breast self-examination (BSE) among Korean women.

Theoretical Framework: This study is guided by the health belief model (HBM) and social support theory.

Methods and Analysis: This is a cross-sectional, descriptive study using a face-to-face survey. Participants were 220 Korean women 35 years of age or older. Descriptive and chi-square statistics were used to describe the sociodemographic factors and relationships between independent variables and dependent variables of all three breast cancer screening measures. Stepwise logistic regression analysis with Wald statistics was used to determine variables that significantly predict the outcomes of mammography, CBE, and BSE.

Findings and Implications: Of these Korean women, 61% had had mammograms and 46% had had one within the previous year. Only 35% the women had ever had a CBE, and 67% of the women had examined their breasts before; 30% did monthly BSE. Age, having regular checkups, and perceived barriers were predictors

of receiving a mammogram. Knowledge of breast cancer causes, symptoms, screening and prevention methods predicted having CBE and BSE. Having support from husbands was associated with practicing BSE. Findings suggest breast cancer screening rates on all three measures remain low in Korean women, and interventions focused on increasing knowledge of breast cancer and screening, encouraging routine screenings, and decreasing perceived barriers to screening, could improve breast cancer screening rates in this population.

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THE INFLUENCE OF BREAST CANCER RISK AND RISK PERCEPTION ON LIFESTYLE BEHAVIORS AMONG WOMEN WITH A FAMILY HISTORY OF THE DISEASE: A MIXED METHOD APPROACH. Denise Spector, RN, ARNP, MSN, MPH, Doctoral Student, UNC-CH School of Nursing, Chapel Hill, NC; Merle Mishel, PhD, RN, University of North Carolina at Chapel Hill–School of Nursing, Chapel Hill, NC; Celette Sugg Skinner, PhD, MPH, Department of Clinical Sciences, Division of Behavioral & Communication Sciences, Dallas, TX; Lisa A. DeRoo, PhD, MPH, Epidemiology Branch, National Institute of Environmental Health Sciences, Durham, NC; Marcia VanRiper, PhD, RN, University of North Carolina at Chapel Hill–School of Nursing, Chapel Hill, NC; and Dale P. Sandler, PhD, MPH, Epidemiology Branch, National Institute of Environmental Health Sciences, Durham, NC

Family history is one of the most influential risk factors for breast cancer. Several lifestyle factors are also related to elevated breast cancer risk. Little is known about relationships between a positive family history of breast cancer, risk perception, and lifestyle behaviors.

We are exploring relationships between participant characteristics, Gail Model risk estimates, risk perceptions and lifestyle behaviors. Aims: 1) Increase understanding about factors involved in breast cancer risk perception and how they relate to lifestyle behaviors, 2) Determine if objective risk factors relate to lifestyle behaviors and whether there are differences between Black and White Women.

To engage in healthy lifestyle behaviors, theory suggests a need for personal risk perception. Lifestyle behaviors among women with a family history of breast cancer are likely to be influenced by many factors, including both objective risk factors and perceived risk.

This study utilizes a mixed-method design. The quantitative portion is a secondary data analysis of risk-related variables from the baseline database of the Sister Study (N=19,418), a national epidemiological study assessing links between exposures to potential risk factors and subsequent development of breast cancer in women between the ages of 35-74 who do not have breast cancer, but have at least one sister diagnosed with breast cancer. Polytomous logistic regression will be conducted to determine whether associations exist between objective risk and lifestyle behaviors (e.g. physical activity, diet, and alcohol intake), while controlling for confounding variables. Women will then be stratified based on race and logistic regression will be conducted to detect any differences between Black and White women. A qualitative descriptive approach (i.e. personal interviews) was used in a complementary fashion to explore factors involved in risk perception formulation. Eligibility criteria were active enrollment in the Sister Study and living in North Carolina. We recruited 32 women (20 White and 12 Black). Content analysis and constant comparative analysis were utilized.

Results will improve knowledge about relationships between perceived risk and lifestyle behaviors among Black and White women, which may be incorporated into targeted and/or tailored motivational intervention studies aimed at improving healthy lifestyle behaviors in specific high-risk populations.

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HOMELESS AFRICAN AMERICAN MEN: PERCEIVED BARRIERS TO PROSTATE CANCER SCREENING. Anne Belcher, PhD, RN, AOCN®, FAAN, Johns Hopkins University School of Nursing, Baltimore, MD

Health disparities are of great concern to oncology nurses, especially with regard to screening and early detention, which directly impact morbidity and mortality

The purposes of the study were to determine what homeless African-American men know about screening for prostate cancer, what barriers keep them and others from being screened, and what they think can be done by themselves, their friends, and health care providers to overcome these perceived barriers.

The background of the study included the prevalence of prostate cancer, as well as the earlier age of presentation, the advanced stage at diagnosis, and the higher death rate in African-American men

A focus group was led by the investigator in collaboration with a case worker at Health Care for the Homeless. Six homeless African-American men were recruited at a regularly scheduled Saturday support group meeting. The recorded discussion was transcribed; QSR/Nvivo was used for content analysis/identification of recurring themes.

All participants were concerned about their health and were interested in knowing how to access prostate cancer screening. Most wanted more information about their bodies and about their risk for other cancers. There are clear implications for nurses involved in cancer education and screening, especially among those with concurrent risk factors of ethnicity, gender, and poverty.

Funding Source: JHU SON Center for Health Disparities Research

Psychosocial Research

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PREDICTORS OF ADJUSTMENT AND GROWTH IN WOMEN WITH RECURRENT OVARIAN CANCER. Julie Ponto, PhD, RN, ACNS-BC, AOCN®, Winona State University, Rochester, MN; Lee Ellington, PhD, University of Utah, Salt Lake City, UT; Suzanne Mellon, PhD, RN, University of Detroit Mercy, Detroit, MI; and Susan Beck, PhD, RN, University of Utah, Salt Lake City, UT

Although there are more prevalent cancers in women, few are more serious and have such high recurrence rates as ovarian cancer. Despite being the leading cause of gynecologic cancer death, a paucity of research exists in this population in the oncology nursing literature.

The chronic, relentless nature of the disease and treatment for women with recurrent ovarian cancer suggests that adjustment to this experience may pose significant physical and emotional challenges. Even so, some women report positive aspects of the experience. Therefore, the purpose of this study was to analyze predictors of adjustment and growth in women who had experienced recurrent ovarian cancer.

The conceptual framework for this study was based on the Resiliency Model of Family Stress, Adjustment and Adaptation, as modified for cancer survivors by Mellon & Northouse. The model incorporates the influence of personal and illness characteristics as well as appraisal of the illness on psychological outcomes.

A descriptive, cross-sectional survey research design

Sample: 60 married or partnered women with recurrent ovarian cancer. Network and snowball sampling was used to recruit participants through national cancer advocacy organizations. Participants completed either an online or paper survey.

Independent variables included demographic and illness variables and meaning of illness. Outcome variables were psychological adjustment and post-traumatic growth.

A model of 5 predictor variables, including younger age, fewer years in the relationship, poorer performance status, greater symptom distress and more negative meaning, accounted for 64% of the variance in adjustment, but did not predict post-traumatic growth. Symptom distress and poorer performance status are the most significant predictors of adjustment. Younger age and fewer years in the relationship also predict poorer adjustment. This study supports the use of a model of adjustment that includes personal, illness and appraisal variables for women with recurrent ovarian cancer. Nurses have the ability to influence each of the predictors of adjustment to recurrent ovarian cancer. Nurses who recognize predictors of poorer adjustment can anticipate adjustment problems and intervene to improve adjustment for these women.

Funding Sources: ONS Foundation; Sigma Theta Tau, Winona State University

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DEVELOPMENT OF AN INTERDISCIPLINARY SUPPORTIVE CARE PLAN FOR PATIENTS WITH LUNG CANCER.

Tami Borneman, RN, MSN, CNS, City of Hope, Duarte, CA; Betty Ferrell, PhD, FAAN, City of Hope, Duarte, CA; Marianna Koczywas, MD, City of Hope, Duarte, CA; and Mihaela Cristea, MD, City of Hope, Duarte, CA

Lung cancer impacts all dimensions of the patient's life including physical, psychological, social, and spiritual well being.

This paper reports on a two phase study of QOL and symptoms in lung cancer. The purpose of Phase I was to determine usual care in a cohort of lung cancer patients treated at a NCI designated comprehensive cancer center. Phase II prospectively followed from patients currently in treatment regarding their QOL concerns and needed services, and pilot tested a palliative care intervention aimed at addressing gaps in usual care.

The Quality of Life model guided Phase II of this study.

In Phase I, 100 patients were randomly selected by the tumor registry from 125 new lung cancer patients seen over 12 months, meeting sample criteria. A detailed audit tool reflecting quality care as described by the NCCN was developed, peer reviewed and tested to establish reliability. Care for each patient was audited for 6 months to capture all encounters and resources used. In Phase II 10 patients completed 4 quantitative tools and participated in a tape-recorded interview. Each patient's data was summarized into a care plan and shared with the interdisciplinary team at a scheduled case conference and finalized after incorporating team suggestions. Patient follow-up occurred at one and three months post case conference to evaluate the impact of the intervention.

In Phase I, 85% were stage III-IV, 82% had comorbidities, 81% received chemotherapy and 43% had radiation therapy. Thirty two percent received no supportive care services. Uncontrolled symptoms (e.g. pain, dyspnea, fatigue) were the main reasons for outpatient visits and for 38% of hospital readmissions. In Phase II, 60% had stage III-IV with COPD/emphysema and cardiac disease as the most common comorbidities. Symptom specific scores were moderate (X=20.6) as were overall scores for QOL using the FACT-Lung (X=87.8). Emotional well-being scores were lowest (X=18.4) followed by functional (X-21.1), social/family (X=23.8), and physical (X=24.5). Supportive care services recommended from the case conference included nutrition, psychology/psychiatry, social work, rehabilitation, and chaplaincy.

QOL/symptom concerns are often neglected in usual care in lung cancer. An interdisciplinary palliative care intervention can prospectively meet these needs.

Funding Source: City of Hope

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IDENTIFICATION OF SUBGROUPS OF ONCOLOGY PATIENTS AND FAMILY CAREGIVERS BASED ON THEIR DISTINCT TRAJECTORIES OF DEPRESSIVE SYMPTOMS.

Laura Dunn, MD, Department of Psychiatry, San Francisco, CA; Marylin Dodd, RN, PhD, University of California, San Francisco, CA; Bruce Cooper, PhD, University of California, San Francisco, CA; Claudia West, RN, MS, University of California, San Francisco, CA; Bradley Aouizerat, PhD, University of California, San Francisco, CA; Kathryn Lee, RN, PhD, University of California, San Francisco, CA; and Christine Miaskowski, RN, PhD, University of California, San Francisco, CA

Recent evidence suggests that a significant proportion of both oncology patients and their FCs experience depressive symptoms. However, less is known about how depressive symptoms change over time or which individuals may be at greater risk for worse depressive symptom trajectories.

The purposes of this study were to determine if subgroups of patients and FCs who differed with respect to their depressive symptom scores over a period of six months could be identified and whether these subgroups differed on demographic and symptom characteristics, as well as quality of life (QOL) outcomes.

The UCSF Symptom Management Model served as the theoretical framework.

Participants (168 patients, 85 FCs) completed a demographic questionnaire and the Center for Epidemiologic Studies Depression Scale (CES-D; 11 times over the period of six months). In addition, they completed valid and reliable measures of fatigue, anxiety, sleep disturbance and QOL. No differences were found in baseline or mean CES-D scores between patients and FCs, Therefore, their longitudinal data were combined in the growth mixture model (GMM) analysis.

The GMM analyses identified that four classes could be extracted from the data (i.e., Class 1 (48.1%) with low CES-D scores, Class 2 (32.5%) with moderate CES-D scores; Class 3 (11.1%) with high CES-D scores; Class 4 (8.3%) with very high CES-D scores). No differences were found in the percentage of patients and FCs in each of the four classes. Participants in Classes 3 and 4 were significantly more likely to be female, nonwhite, and not married/partnered. In addition, these participants were significantly more likely to report higher levels of anxiety, fatigue, and sleep disturbance at the time of the patient's simulation visit for RT and poorer QOL outcomes. The use of GMM is an important analytic tool to identify subgroups or patients and FCs with different depressive symptom experiences. This type of analysis may lead to the identification of individuals who require different types of psychological interventions.

Funding Source: National Institute of Nursing Research (NR04835)

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CHANGES IN PERCEPTIONS OF SOCIAL SUPPORT OVER TIME FOR FAMILY CAREGIVERS.

Allison Walker, BS, University of Pittsburgh, School of Nursing, Pittsburgh, PA; Jean Kuo, BS, University of Pittsburgh, School of Nursing, Pittsburgh, PA; Allison Hricik, MS, University of Pittsburgh, School of Nursing, Pittsburgh, PA; Heidi Donovan, PhD, RN, University of Pittsburgh, School of Nursing, Pittsburgh, PA; Barbara Given, RN, PhD, FAAN, Michigan State University, East Lansing, MI; and Paula Sherwood, PhD, RN, CNRN, University of Pittsburgh, Pittsburgh, PA

It is important for nurses to be able to identify the social support needs of caregivers of persons with a primary malignant brain tumor(PMBT)

Although several studies have highlighted the importance of social support in the emotional health of family caregivers, there is a dearth of research evaluating how social support changes over the course of the care situation. The purpose of this mixed-method analysis was to examine how caregivers' perceptions of social support change over the first four months following the care recipient's diagnosis of a (PMBT) and to evaluate factors that may influence these changes.

Relationships among variables were drawn from the Adapted Pittsburgh Mind Body Center Model.

Data were collected from caregivers and care recipients (n=26) in an ongoing descriptive, longitudinal study (NCI-RO1-CA118711-01). Dyads were recruited within one month of diagnosis and underwent interviews at baseline and 4 months. Quantitative evaluation of social support was done via the ISEL (Interpersonal Support Evaluation List) and qualitative data were obtained through answers to open-ended questions transcribed verbatim. Paired T-tests were used to examine changes in social support over time and multivariate linear regression was used to examine whether change over time was predicted by care recipients' physical function (SF-36) and caregivers' age, gender, relationship to the care recipient, depressive symptoms, burden, and neuroticism. Content analysis was used to further examine changes in social support over time.

Results showed a significant (p=<.01) decrease in social support over the first 4 months following diagnosis, yet this change was not significantly associated with any of the potential predictors. Content analysis supported changes found in the quantitative social support scores over time. At diagnosis, social support was primarily perceived as positive, a variable which offset some of the distress resulting from providing care. At 4 months following diagnosis, however, caregivers reported a lack of support initiated by family/friends and found that the source of their social support changed to other caregivers. Data support the concomitant evaluation of both negative and positive perceptions of social support in caregiver research. Future research should be done to identify and intervene on factors that are associated with negative changes in social support.

Funding Sources: ONS/ABTA; NCI

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COMPARISON OF THE INFLUENCE OF SOCIAL SUPPORT ON WELL-BEING AMONG PATIENTS AND CAREGIVERS.

Barbara Daly, PhD, RN, FAAN, Case Western Reserve University, Cleveland, OH; Sara Douglas, PhD, RN, Case Western Reserve University, Cleveland, OH; Amy Lipson, PhD, Case Western Reserve University, Cleveland, OH; and Helen Foley, RN, MSN, Case Western Reserve University, Cleveland, OH

Social support has been shown to be influential in the perception of distress and burden among both patients with cancer and their family caregivers. Design of interventions to support both members of the dyad requires identification of the specific aspect of social support that has the greatest potential for influencing well being.

Social support is a broad concept with varying definitions and measurement approaches. Previous reports have not identified the type or aspect of social support that is most important nor has there been an examination of how patients and their caregivers may differ in the type of support needed. The purpose of this study was to examine associations between specific aspects of social support and a variety of quality of life measures in patients with cancer and their family caregivers.

Ferrell's Quality of Life model

200 newly diagnosed patients with cancer and 100 family caregivers who participated in a Psychosocial Research Registry at a Comprehensive Cancer Center were interviewed. Quality of life was measured with the Profile of Mood States and single-item indicators from the NIH-sponsored PROMIS project; social support was measured with the Medical Outcomes-Social Support Scale. Caregiver burden was measured with the Caregiver Reaction Assessment.

For patients, controlling for age, race, and cancer stage, the MO-SSS subscales of tangible support and positive social support demonstrated the strongest correlations and greatest contributions to the regression models, which were significant for the emotional well-being PROMIS item and POMS total mood disturbance. For caregivers, the positive social support subscale was highly correlated with the POMS total mood disturbance, but demonstrated the weakest correlation with the PROMIS overall QOL item. These results suggest that psychosocial support programs for patients and their families must be tailored to somewhat different needs. Patients and their caregivers should be assessed separately and referrals to differing resources may be indicated. In addition, the findings have implications for measurement of social support, either as an intervention or an outcome.

Funding Source: CA-103736

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THE CONCEPT OF TRANSITORINESS AND ITS MAIN CHARACTERISTICS.

Maya Shaha, RN, University of Applied Sciences Health, Freiburg, Switzerland; Anne E. Belcher, PhD, RN, AOCN®, CNE, FAAN, FANE, Johns Hopkins University School of Nursing, Baltimore, MD; and Carol Lynn Cox, PhD, MSc, MA Ed, PG Dip Ed, BSc (Hons), RN, FHEA, City University St. Bartholomew School of Nursing & Midwifery, London, Great Britain

To delineate the concept of transitoriness in the cancer experience and to identify its attributes and characteristics.

An evolutionary concept development approach was employed. A systematic literature review was conducted of PubMed, CINAHL and Web of Sciences databases. Several search strings were employed. The terms awareness, mortality and cancer were combined with death, salience, hope and survivorship. A total of 49 articles published between 1983 and 2007 were retained and arranged into seven thematic groups.

Cancer is the second most frequent cause for death worldwide. In the United States alone, more than 560,000 men and women are estimated to die of cancer this year. Therefore, receiving a cancer diagnosis provokes a confrontation with one's mortality or transitoriness. Evidence has demonstrated that this confrontation has a negative influence on patient quality of life. Despite that, the concept of transitoriness has not been described in detail.

Transitoriness constitutes an inherent part of the cancer experience. However, further studies are needed to develop measurements to assess its influence on the person and his/her family. Effective multidisciplinary interventions must be developed and tested to support the person and the family in the cancer experience.

Transitoriness means a person's confrontation with the finitude of human existence brought about by a cancer diagnosis, his/her difficulties envisioning a future and subsequent adjustment to the realization of life's finitude. The concept encompasses crisis and distress, death anxiety, death awareness, mortality salience, coping and meaning in illness, hope and survivorship. The confrontation with life's finitude provokes existential fear and anxiety in the person. Distress is an expression of these experiences. In the face of becoming aware of transitoriness, the person has the possibility of re-assessing his/her life situation and thus identifies and explores new avenues.

Funding Sources: Swiss Cancer League; City University

Quality of Life

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DO PATTERNS OF FATIGUE AND QUALITY OF LIFE DIFFER OVER TIME BASED ON BREAST CANCER ADJUVANT CHEMOTHERAPY REGIMENS?

Kari Lockhart, RN, MSN, University of Nebraska Medical Center College of Nursing, Omaha, NE; Ann Berger, PhD, RN, AOCN®, FAAN, University of Nebraska Medical Center College of Nursing, Omaha, NE; and Sangeeta Agrawal, MSc, University of Nebraska Medical Center College of Nursing, Omaha, NE

Significance: Women receiving breast cancer adjuvant chemotherapy commonly experience high fatigue and lower quality of life (QOL). Chemotherapy regimens containing taxanes have been implicated as contributing to higher fatigue and lower QOL, but these relationships have not been reported in a large sample.

Purpose: To examine changes over time (prior to and at treatments (Tx) 4 and 8, and 30 days after the last Tx) and relationships among fatigue, physical and mental QOL with three different adjuvant chemotherapy regimens (dose-dense, taxane vs. dose-standard, taxane vs. dose-standard, no taxane) in Stage I-IIIA breast cancer patients.

Theoretical Framework: Piper's Integrated Fatigue Model.

Methods & Analysis: The parent study was a randomized, controlled clinical trial. The sample (N= 196) was mean age = 52, postoperative. Chemotherapy regimens were anthracycline based with 38.5% receiving a dose-dense, taxane regimen, 23% receiving a dose-standard, taxane regimen, and 38.5% receiving a dose-standard, no taxane regimen. Reliable and valid tools included the Piper Fatigue Scale and the Short-Form 36 Health Survey v.2. Analysis included descriptives, correlations, and RM-Mixed model ANOVAs.

Findings: Fatigue patterns were similar at each time among all three regimens and significantly different over time. Physical QOL patterns were the same for all regimens over time. Women who received the dose-standard, no taxane regimen had higher physical QOL when compared to the women who received taxanes. Mental QOL patterns were similar among all regimens and significantly different over time. Participants who reported higher fatigue also reported lower physical and mental QOL before beginning chemotherapy and 30 days after the last Tx, regardless of regimen.

Implications: Fatigue and mental QOL patterns over time do not differ based on the prescribed chemotherapy regimen. Women who receive taxanes are at higher risk for poorer physical QOL over time. Health professionals should screen for fatigue and assess for contributing factors in all patients at each clinical visit. This will allow for interventions to be implemented earlier, decreasing the likelihood of moderate to severe fatigue and decreased QOL. The development of reliable and valid fatigue and QOL tools that are useful to both oncology clinicians and researchers is also needed.

Funding Sources: National Institutes of Health and the National Institute of Nursing Research (5R01NR007762-05) awarded to Dr. Berger

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QUALITY OF LIFE AND PHYSICAL FUNCTIONING AFTER BONE MARROW TRANSPLANT.

Kathy Ruble, RN, AOCN®, CPNP, Johns Hopkins University, Baltimore, MD; Victoria Mock, PhD, RN, FAAN, Johns Hopkins University, School of Nursing, Baltimore, MD; and Allen Chen, MD, PhD, MHS, Johns Hopkins University, School of Medicine, Baltimore, MD

QOL and physical functioning are important outcomes for cancer survivors.

Limited data exists describing QOL and physical functioning in BMT survivors.

Specific Aims:

1. Describe the QOL, muscle strength and physical activity of BMT survivors.
2. Identify disease and treatment related factors associated with these outcomes.

A health outcomes framework utilizing physical functioning and multidimensional QOL are used to inform the study.

BMT survivors have disease and treatment related factors that could negatively impact these outcomes.

This descriptive study will enroll 50 subjects, ages 8 – 30 years who are at least 1 year post BMT. (32 enrolled to date). The convenience sample will be drawn from an established survivor clinic. Subjects will complete the Minneapolis-Manchester Quality of Life (MMQL) tool, (a self report questionnaire measuring 5 dimensions of QOL) and the Previous Days Physical Activity Record (PDPAR), (a self report of activities which convert to metabolic equivalents). Isokinetic muscle strength of the upper and lower extremities will be obtained with the Biodex system which measures the peak torque in dominant extension and flexion.(published validity and reliability for MMQL, PDPAR and Biodex will be presented). Predictor variables obtained from medical record review and subject interview will include; 1) Type of BMT (allogeneic/autologous), 2) Years post BMT, 3) Age at time of testing, 4) Age at time of BMT, 5) Sex, 6) Tanner stage, 7) History of chronic graft versus host disease, 8) Prior therapy and 9) Endocrinopathies. In addition, published normative data for the MMQL and muscle strength will be utilized for comparison.

Data analysis will include descriptive statistics for outcome and predictor variables. T-tests will be used to compare subjects to normative data for QOL and muscle strength measures. Linear and logistic models will be used to examine possible relationships between outcome variables and mediation/moderation effects of predictor variables.

Diminished QOL and/or physical functioning in this population are important outcomes to identify. Establishing possible disease and treatment associations with these outcomes may help to identify individuals at risk. Identifying specific areas of diminished functioning may help in the development of interventions for improved outcomes.

Funding Sources: National Research Scholarship Award (NRSA) F31NR010038 from National Institute of Nursing Research (NINR), American Cancer Society, Cancer Nursing Doctoral Scholarship 112191 and General Clinical Research Center (Johns Hopkins University, Bayview Campus)

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THE EXPERIENCES OF OVARIAN CANCER PATIENTS RELATED TO SEXUALITY.

Margaret Wilmoth, PhD, MSS, RN, School of Nursing, College of Health & Human Services, Charlotte, NC; and Vanessa LaLoggia, RN, MSN, UNC Charlotte, Charlotte, NC

The impact of ovarian cancer treatments on sexuality have received little attention in the literature; this descriptive study using qualitative methods will provide information from the patients' perspective on how sexuality is altered by the disease and its treatments.

Purpose: Ovarian cancer is the fifth leading cause of death for women. There will be about 22,430 new cases of ovarian cancer in this country in 2007, and about 15,280 women will die this year because of the disease. A disease of this proportion requires an in depth examination of all aspects of quality of life, including sexuality. The physical changes that happen as a result of the treatment for ovarian cancer may affect how a woman feels about her sexuality. These changes can affect her relationships and her comfort level with sexual intimacy. It is important for health care providers to comprehend and be equipped to address the patients concerns. This study will provide a greater understanding of the changes a woman goes through during treatment for ovarian cancer, and their educational needs in regards to sexuality.

This descriptive qualitative study is using content analytic techniques with data analysis framed by the Theory of Unpleasant Symptoms.

Methods: This qualitative study used individual interviews with recently diagnosed ovarian cancer survivors to learn about the influencing factors, dimensions of sexuality treatment-induced symptoms they experienced and their self-care management techniques, need for sexuality information and education from their health care providers. The questions addressed explored the gap in knowledge surrounding explore the maintenance of normalcy, emotional and psychosocial support. The study will also allow for the exploration of physical manifestations as a result of treatment measures inclusive of intensity, timing, and level of distress of symptoms, and overall quality of sexuality in ovarian cancer patients.

Findings: Data are currently being analyzed.

Nursing Implications: The information obtained within the study will allow for a greater understanding of the effects on a

woman's sexuality due to the symptoms they endure during first line treatment for ovarian cancer. The end product will open the door for further development of evidenced based care in the area of sexuality for women receiving first line treatment for ovarian cancer.

Funding Sources: American Nurses Foundation and the Daisy Foundation

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SYMPTOMS AND QUALITY OF LIFE. Sigridur Zoega, RN, BS, Landspitali University Hospital, Reykjavik, Iceland; Sigridur Gunnarsdottir, RN, PhD, Landspitali University Hospital and University of Iceland, Faculty of Nursing, Reykjavik, Iceland; Valgerdur Sigurdardottir, MD, Landspitali University Hospital, Reykjavik, Iceland; and Nanna Fridriksdottir, RN, MS, Landspitali University Hospital and University of Iceland, Faculty of Nursing, Reykjavik, Iceland

A relationship exists between symptoms and quality of life (QOL) in patients with advanced cancer. Nevertheless, further studies are needed to gain a deeper understanding of this association.

QOL of cancer patients is usually worse than of the general public and the suffering of people with advanced cancer is related to their symptomatology. Cancer patients experience around 8-11 symptoms simultaneously and although symptoms are usually mild, a number of patients experience severe symptoms. The purpose of this study is to assess the symptomatology of Icelandic patients with advanced cancer and to explore the relationship between symptoms and QOL.

The theoretical framework is a model, founded on the literature, depicting the relationship between symptoms and QOL in cancer patients.

The study is cross-sectional, descriptive, and correlational. Participants were 150 cancer patients, 18 years and older, who had been on opioid pain medication for three days or longer. Symptoms and QOL were evaluated with the EORTC QLQ-C30, a widely used, valid and reliable questionnaire. Descriptive statistics were used to portray the symptomatology of participants, and multiple linear regression to test the relationship between symptoms and QOL.

Participants had a median number of nine symptoms in the past week. Mean (SD) severity was 0,9 (0,5) (scale 0-3), and the most frequent symptoms were fatigue (90,9%) and pain (90,3%). Older patients had fewer symptoms and less symptom severity than younger patients, but gender and number of concurrent diseases did not relate to the symptomatology. Pain, fatigue, insomnia, and depression explained 33,6% of the variance in global health/QOL, adjusted for gender and age. Pain and fatigue together explained 29,1% of the variance, but surprisingly the effect of insomnia and depression, were non-significant in the model. Similarly, number of symptoms experienced by patients was negatively associated with global health/QOL, explaining 25,8% of the variance, when adjusting for age and gender. The results illustrate symptoms in patients with advanced cancer and can be used to aid in symptom management and hence improve QOL.

Funding Source: Icelandic Research Fund for Graduate Students

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ASSESSMENT OF THE PREVALENCE OF SEXUAL DYSFUNCTION, DEPRESSION, AND ANXIETY IN UNDERSERVED AND MINORITY PATIENTS WITH GYNECOLOGIC CANCERS. Jacalyn Gano, RN, MSW, OCN®, M.D. Anderson Cancer Center, Houston, TX; Julietta Palencia, RN, M.D. Anderson Cancer Center, Houston, TX; Jody Folloder, RN, BSN, OCN®, M.D. Anderson Cancer Center, Houston, TX; Mary Hughes, RN, CNS, MS, M.D. Anderson Cancer Center, Houston, TX; and Lois Ramondetta, MD, M.D. Anderson Cancer Center, Houston, TX

Oncology nurses can utilize the results of this study to develop and implement interventions to address these survivorship issues in this patient population.

Our goal was to identify prevalence and severity of sexual dysfunction, depression and anxiety in underserved and minority women over a 6-month period.

Multiple studies describe the psychological distress experienced by women with a new diagnosis of a gynecologic cancer. Immediately following diagnosis, approximately 47% - 70% of women merit a diagnosis of moderate or severe depression or anxiety. Failure to address these symptoms decrease quality of life and may negatively impact patient outcome. However, the majority of women in these studies were English-speaking, non-Hispanic, white, and in the middle to upper-income bracket. Less is known about the prevalence and severity of depression and anxiety in low-income, ethnic minority women with cancer.

Eligible women completed the Female Sexual Function Index (FSFI), Hospital Anxiety and Depression Scale (HADS) and a demographic survey anonymously. An FSFI score <26 was considered at risk for sexual dysfunction. A HADS score of <11 on either subscale was considered a case of psychological morbidity. Summary statistics were calculated for the HADS subscores. A univariate analysis of demographic factors by sexual dysfunction was completed. A logistic regression model was created from the significant factors in the univariate analysis with p<.25. Terms were eliminated via backwards regression techniques for a final model if statistically significant. Statistical imputation techniques estimated missing data to calculate HADS and FSFI scores.

Respondents were Hispanic (51.8%), African-American (23.8%), Caucasian (22.6%) and other (1.8%). Eighty five per cent had sexual dysfunction (95% exact CI 78.32%-89.89%). Of 167 women with usable scores, 24.5% were borderline abnormal and 20.4% were abnormal for depression. 24.5% were borderline abnormal and 29.3% were abnormal for anxiety. Unmarried, older age and presence of children were related to sexual dysfunction. Fewer Hispanics reported sexual dysfunction than African-American or White women (77% vs. 92%). Twenty two per cent reported a sexual abuse history. There were no differences between cancer diagnoses.

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THE RELATIONSHIP BETWEEN OPTIMISM AND QUALITY OF LIFE IN NEWLY DIAGNOSED CANCER PATIENTS. Susan Mazanec, MSN, RN, AOCN®, Case Western Reserve University, Frances Payne Bolton School of Nursing, Cleveland, OH; Barbara Daly, PhD, RN, FAAN, Case Western Reserve University, Frances Payne Bolton School of Nursing, Cleveland, OH; Sara Douglas, PhD, RN, Case Western Reserve University, Frances Payne Bolton School of Nursing, Cleveland, OH; Amy Lipson, PhD, MSW, Case Western Reserve University, Frances Payne Bolton School of Nursing, Cleveland, OH; and Helen Foley, MSN, RN, Case Western Reserve University, Frances Payne Bolton School of Nursing, Cleveland, OH

The Institute of Medicine has recently underscored the importance of psychosocial assessment and services to optimize the quality of life (QOL) of patients with cancer. Understanding relationships between social and psychological determinants of QOL is critical to the design of screening and intervention tools. Dispositional optimism has been found to be a significant predictor of coping, adjustment and QOL.

To investigate the relationships between optimism and QOL, anxiety, depression, social support, and spiritual well-being in newly diagnosed adult cancer patients.

Folkman and Lazarus stress, appraisal, and coping model.

Data for this study were obtained from a larger study of a psychosocial data registry for cancer patients and families at an NCI-designated comprehensive cancer center. Newly diagnosed cancer

patients (N=163) with mixed diagnoses and stages completed psychosocial instruments upon enrollment into the registry. These included measures for optimism (Life Orientation Test-Revised), QOL (Functional Assessment of Cancer Therapy General), mood state (Depression and Anxiety Subscales of the Profile Mood States-Short Form), social support (Medical Outcomes Social Support Survey) and spiritual well-being (Functional Assessment of Chronic Illness Therapy-Spiritual Well-being). A hierarchical multiple regression analysis was conducted to evaluate how well optimism predicted quality of life.

There were no significant differences found in optimism scores based on sex, type of cancer or stage of cancer. Optimism was most highly correlated with spiritual well-being (.50), followed by depression (-.47), anxiety (-.46), and QOL (.39). Optimism, by itself, explained 15% of the variance in QOL but did not make a significant contribution when scores for spiritual well-being, depression, anxiety, and social support were entered into the equation. Anxiety had the greatest influence on QOL (â = -.319, p< .001), followed by spiritual well-being (â = .256, p<.001) and social support (â = .137, p < .05). The findings suggest that optimism alone is not a primary factor in QOL at initial cancer diagnosis. Further exploration is needed to determine if optimism exerts a greater influence on QOL at another point along the cancer trajectory and if there is overlap between the constructs of optimism and spirituality.

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DIMENSIONS OF WELL-BEING IN OLDER BREAST CANCER SURVIVORS.

Victoria Loerzel, PhD, RN, OCN®, University of Central Florida, Orlando, FL

Over half of breast cancer diagnoses occur in women over the age of 65. Recent research suggests the concerns of older women are different than those of younger women. However, due to the lack of research with older breast cancer survivors, these concerns are largely unknown. This knowledge gap directly impacts the care and quality of life of older women surviving with breast cancer.

The purpose of this study is to describe the concerns of older breast cancer survivors within the domains of Physical, Psychological, Social and Spiritual Well-being in the first year of post-treatment survivorship.

The Quality of Life in Breast Cancer Survivors Conceptual Model was used to frame the study.

This secondary analysis used descriptive design to examine concerns within the domains of QOL. Fifty women, age 65 and older were included. The Quality of Life-Breast Cancer (QOL-BC) survey, a 50 item scale that measures QOL within 4 QOL domains in breast cancer survivors was used. Data was analyzed using frequencies and descriptive statistics.

The most common concern within the physical subscale was fatigue (82%). Menstrual changes and concerns with fertility were not reported. Within the psychological subscale, concentration (96%), distress from diagnosis (94%), treatment related distress (84%), fear of recurrence (80%) and fear of a new cancer (78%) were the most common concerns. Conversely, all women (100%) reported some degree of happiness, control and satisfaction with their lives. Within the social subscale, family distress (90%) and concern for female relatives (83%) were the most common concerns. Concerns with sexuality (18%) and employment (10%) were minimal. Within the spiritual subscale, uncertainty (76%) was the most common concern. However, women felt some degree of hope (100%), a sense of purpose (90%) and noted positive changes after breast cancer (74%).

Older women surviving with breast cancer report a wide range of QOL concerns after treatment, many of which may be different from the concerns of young or middle aged women. Determining the needs of older women are crucial so tailored interventions can be developed to effectively manage problems after treatment and maintain or improve QOL.

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EVALUATION OF THE FICA SPIRITUAL ASSESSMENT TOOL.

Tami Borneman, RN, MSN, CNS, City of Hope, Duarte, CA; Shirley Otis-Green, MSW, ACSW, LCSW, OSW-C, City of Hope, Duarte, CA; Pam Baird, AS, City of Hope, Duarte, CA; Chan Thai, MPH, City of Hope, Duarte, CA; Gloria Juarez, RN, PhD, City of Hope, Duarte, CA; Betty Ferrell, RN, PhD, FAAN, City of Hope, Duarte, CA; and Christina Puchalski, MD, FACP, George Washington University, Washington, DC

Spirituality plays an important role in illness adaptation for cancer patients. The National Consensus Project for Quality Palliative Care includes spiritual care as one of the eight clinical practice domains for patient care. However, there are very few standardized assessment tools for spirituality used in oncology clinical settings.

The primary purpose of this pilot study is to provide preliminary psychometric evaluation for the FICA Spiritual Assessment Tool and to test its feasibility in clinical settings. Specifically, correlates between the FICA qualitative data and QOL quantitative data are examined to assess validity of the FICA.

The theoretical framework of the FICA tool is based on the four domains of spiritual assessment, and these include the presence of faith or belief, the importance of spirituality on an individual's life, the individual's spiritual community, and interventions to address spiritual needs. A prospective, cross-sectional design was used to evaluate the FICA.

Patients with solid tumors were recruited from ambulatory clinics of one comprehensive cancer center. Items assessing aspects of spirituality within QOL tools (the FACT-L, FACT-O, and COHQOL) were used, and all patients were assessed using the FICA. Descriptive analysis of demographic data was conducted, followed by comparison of means between the QOL item scores and FICA.

The sample (n=32) had a mean age of 64, and half were Protestant. The majority of patients, as assessed by the FICA, rated faith/belief as very important in their lives (X=3.8; 0-5 scale). FICA quantitative ratings and qualitative comments are closely correlated with items from the QOL tools assessing aspects of spirituality. Findings suggest that the FICA tool is a feasible tool for clinical assessment of spirituality, and correlations between existing spiritual well-being domains of QOL tools are promising. Addressing spiritual needs and concerns in clinical settings is critical in enhancing QOL. This evaluation provides preliminary validation of the FICA Spiritual Assessment Tool as a relevant tool for future research and clinical practice.

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SPIRITUAL EXPRESSION AND SPIRITUAL PERSPECTIVE AMONG GERIATRIC NURSES.

Anne Belcher, PhD, RN, AOCN®, FAAN, Johns Hopkins University School of Nursing, Baltimore, MD; and Margaret Griffiths, MSN, RN, CNE, CDE, University of Pennsylvania School of Nursing, Philadelphia, PA

To provide holistic care, nurses in practice need to develop awareness of their own spirituality and spiritual needs, to learn how to assess the spiritual well-being of patients, and to implement transdisciplinary interventions which meet the defined spiritual needs of their patients and themselves.

The purpose of this study was to determine the extent to which geriatric nurses express their spirituality in practice environments and are able to integrate spiritual care into their role.

Increasing focus on holism in health care has resulted in organized efforts to attend to spiritual care and to examine the concept

of spirituality in a systematic manner. Evidence exists that many nurses misconstrue patients' manifestations of spiritual needs (see ANA-AHNA Holistic Nursing Scope and standards of Practice; writings of Florence Nightingale)

The research design for this study was a qualitative approach using a survey that addressed issues/questions related to expression of spirituality both personally and professionally. Demographic data were also collected. The mailing list of the National Geriatric Nursing Association was used to reach members of the organization; the return rate was approximately 40%. Data were analyzed using a content analysis method to measure the frequency, order and/or intensity of responses.

The presentation will focus on identified themes and their impact on quality of care for elders. Findings provide the basis for suggested "best practices" in geriatric nursing practice and education.

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EARLY ADULTHOOD UPROOTED: TRANSITORINESS IN YOUNG WOMEN WITH BREAST CANCER.

Maya Shaha, RN, Johns Hopkins University School of Nursing, Baltimore, MD; and Susan Bauer-Wu, PhD, RN, Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA

To describe the perceptions of young breast cancer patients, specifically their sense of mortality and how it influences their everyday life

Nearly 24,000 women under age 45 are diagnosed with breast cancer in the U.S. annually, with more aggressive disease and lower survival rate in pre-menopausal women compared to those who are older. Young women who receive a diagnosis of breast cancer face the potential finitude of human life, or transitoriness, at a time when they are establishing their careers, developing partnerships and building a family. Little is known about the perspectives of young women with breast cancer in how they consider issues of their own mortality.

The concept of transitoriness was employed as a frame of reference.

Stage I-III breast cancer patients age 39 and younger diagnosed within the last year and who participated in an expressive writing intervention study were included in this qualitative study (n=16). This was a secondary analysis of their writing texts, where they wrote several times over a period of four months. Writing instructions indicated that the women write about anything they choose to that relates to their cancer experience. Content analysis was done by two researchers who reached consensus in coding and theme identification for each of the texts. Selection of relevant text passages were guided by the following inclusion criteria: passages that included the perception of the participant's own death or dying experience +/- future uncertainties.

Nine of the 16 participants (56%) wrote about their mortality (transitoriness). Three themes (Being Remembered, Emotional Upheaval, and Omnipresence of Life's Finitude) and 11 subthemes were identified from the rich narrative texts,

Despite early stage diagnosis and the beginning phases of adulthood, young women with breast cancer contemplate their mortality and potential repercussions on themselves, their loved ones, and their careers. Oncology nurses and other health professionals need to be sensitive to these concerns and provide opportunities for discussion and/or referrals to best support their young patients as they grapple with such potentially overwhelming issues. Future research can explore the trajectory of transitoriness over time and identify and test clinical interventions to facilitate adaptive coping in young adult cancer patients.

Funding Source: Cancer and Leukemia Group B Foundation

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IMPACT OF CHANGES IN SEXUAL FUNCTION ON MOOD AND QUALITY OF LIFE OF MEN UNDERGOING RADIATION THERAPY FOR PROSTATE CANCER.

Kristie Howlett, RN, MS, OCN®, Sutter Roseville Medical Center, Roseville, CA; Marylin Dodd, RN, PhD, UCSF, San Francisco, CA; Theresa Koetters, RN, MS, UCSF, San Francisco, CA; Janet Edrington, RN, PhD, UCSF, San Francisco, CA; Steve Paul, PhD, UCSF, San Francisco, CA; and Christine Miaskowski, RN, PhD, UCSF, San Francisco, CA

Little is known about the specific effects of changes in sexual function on mood and quality of life in men who undergo radiation therapy (RT) for prostate cancer.

Based on the paucity of research on the specific effects of changes in sexual function on prostate cancer patient's mood and QOL, the purposes of this study were: to describe the percentages of men with and without changes in sexual function from the beginning to the end of RT and to evaluate for differences in demographic and clinical characteristics, mood states, and QOL in patients who did and did not experience changes in sexual function from the beginning to the end of RT.

The University of California's Symptom Management Model served as the conceptual framework for this study.

Seventy men completed the study and were categorized into one of four sex groups (i.e., no problem x2, problem to no problem, no problem to problem, and problem x2) based on their responses to the question "Is your sexuality impacted by your illness?" that was answered at the beginning and the end of RT. In addition, patients completed depression, anxiety, and QOL measures at the same time points.

Approximately 50% of patients had a problem with sexual function either at the beginning or at the end of RT. Overall, the men without sexual problems at both the beginning and end of RT had significantly less anxiety and depression and higher QOL scores than patients who went from not having a problem to a problem and patients who had a problem at both time points. Findings from this study suggest that clinicians need to evaluate the effects of RT on sexual function, as well as monitor these patients for depression and anxiety, as well as for changes in QOL.

Funding Source: National Institute of Nursing Research (NR 04835)

Research Issues

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A PILOT STUDY OF AN INTERVENTION TO IMPROVE ADHERENCE WITH ORAL CHEMOTHERAPY AGENT(S).

Sandra Spoelstra, RN/MSN, Michigan State University College of Nursing, East Lansing, MI; Emily Meizio, RN, BSN, MSN, OCN®, CHPN, Michigan State University, East Lansing, MI; Veronica Decker, APRN, BC, MBA, Michigan State University, East Lansing, MI; Renee Bloome, MSc, BS, Michigan State University, East Lansing, MI; Mei You, MS, BS, Michigan State University, East Lansing, MI; Charles Given, PhD, Michigan State University, East Lansing, MI; and Barbara Given, PhD, RN, FAAN, Michigan State University, East Lansing, MI

This pilot study makes important contributions to the new ONS research agenda priority by promoting and managing treatment adherence. If management of symptoms is shown to improve adherence to oral cancer mediations, this will link two concerns among oncology nurses, patient adherence to medication protocol and symptom management.

The purpose of this study was to assess the feasibility of accruing cancer patients who are undergoing treatment using oral chemotherapy to actively participate in a research project and to test an Automated Voice Response (AVR) system complemented by nurse strategies for more severe symptoms, to improve adherence to oral chemotherapy. The strategies utilized in the pilot explored a study design to link improved symptom management with greater adherence enabling investigators to establish effect and sample size, and to inform research questions for an intervention trial.

This scientific method utilized a modified health belief model approach to patient adherence to build upon a cognitive behavioral intervention framework for symptom management.

Participants received the Symptom Management Toolkit® then participated in an Interview for symptom severity, satisfaction, and belief about oral agents. Patients received weekly AVR calls, which assessed adherence to oral agents and severity of 15 symptoms. Patients who reported adherence of < 80% of prescribed oral agents or symptoms of 4 or greater (0-10 scale) for three consecutive weeks, were called by a nurse for symptom management and adherence to oral chemotherapy medications. Following the 8 weekly AVR calls patients participated in a follow up Interview and medical record review.

This pilot study included 31 patients from two Cancer Centers in the Midwest. Findings indicate a 22.6% non adherence rate to oral chemotherapy medications with half of the non adherence due to symptoms. Findings indicate symptom severity was not significantly different between adherent and non adherent patients. This pilot study demonstrated the ability to accrue patients for a longitudinal trial and informed intervention design. Adherence with oral agents is becoming a major area of concern for health professionals caring for cancer patients. This pilot provides some guidance for future interventions and research studies.

Funding Source: Michigan State University

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A FORMAL UNIVERSITY AND MEDICAL CENTER COLLABORATION EFFORT INCREASES NURSING RESEARCH.

Elizabeth Galvin, MS, RN, AOCNS®, Karmanos Cancer Center, Detroit, MI

To describe the development and outcomes associated with formal research collaboration between a University-based College of Nursing and a large urban medical center.

A two-pronged approach was designed to meet the needs of the medical center and college. First, a Scholars Program was launched providing funding for faculty to conduct research in their area of interest, while offering a wealth of resources to conduct the project, including subjects and personnel. In exchange, faculty was required to include nursing staff as active collaborators and present findings within the medical center. Benefits to the medical center include staff nurse participation in and ownership of research, plus the opportunity to hear study findings. Second, a Center for Clinical Research was established. Advanced practice nurses from each institution form the core of the Center along with a junior and senior faculty member from the College of Nursing. This groups charge is to review nursing research proposals, increase the visibility and knowledge of nursing research throughout the center and disseminate research findings.

When students conduct research within an institution, nursing staff become interested in the research and research outcomes. Formal research projects within our medical center decreased dramatically when students began field projects or teaming up with faculty on faculty related research. Ways to stimulate interest in nursing research and introduce nursing research expertise into the system were sought.

Nursing staff need support to conduct research. Collaboration with faculty who are currently conducting research, are familiar and comfortable with the research process and are actively teaching encourages staff to seek support and ask questions. Advanced practice nurses also increase their knowledge and proficiency in the research process and increase their ability to provide staff support.

Since the Collaboration's inception, nursing research throughout the medical center has increased significantly. Fifteen proposals by Scholars have been awarded. Seven additional research proposals have been generated by nursing staff. Six articles have been published, all in referred journals.

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NEW INSTRUMENT TO MEASURE SYMPTOM DISTRESS IN WOMEN WITH BREAST CANCER.

Marcia Boehmke, DNS, ANPC, RN, University at Buffalo, State University of New York, Buffalo, New York, NY

Identifying symptoms that cause women distress, as well as those who are at greatest risk for developing distress will significantly improve the quality of life of these women.

To create a new instrument to measure symptom distress in women with breast cancer. Aims: (1) identify previously unrecognized symptoms and symptom distress experienced because of new therapies; (2) discuss status of the newly developed instrument measuring symptom distress.

UCSF Symptom Management Conceptual Model that focuses on perception, evaluation, and responses to symptoms.

Cross-sectional, correlational study design was used. Convenience sampling, from a tertiary breast cancer center in Western New York, recruited 100 women for this study. A battery of six psychometrically sound instruments were given to these women: Mishel Uncertainty in Illness Scale, Breast Cancer Prevention Trial Symptom Checklist, Cancer Rehabilitation Evaluation System, McCorkle Symptom Distress Scale, Symptom Checklist-90-Revised Scale, and Functional Assessment of Cancer Therapy-Breast. Demographic and clinical information were obtained from the medical record. Descriptive statistics

analyzed demographic and clinical data; rank ordering identified the most persistent and bothersome symptoms as measured by the above instruments. Symptoms not measured by the instruments used were incorporated into the new instrument and analyzed by rank ordering.

Analyzing the 6 instruments using rank-ordering identified 5 constructs: physical symptoms, menopausal symptoms, cognitive impairment, body image changes, and uncertainty. These constructs were foundational in developing the new symptom distress instrument. Anecdotal comments regarding

symptomatology not measured were incorporated in the new instrument. Of major significance is the fact that nurses using the new instrument will more accurately identify levels of symptom distress experienced by these women. Present-day instruments do not measure current symptoms because of changes in treatment protocols. Assessments using the new instrument will provide women with an opportunity to voice symptoms and distress they might not mention, as well as allow for symptom validation.

Research for psychometric testing of this instrument is required.

Funding Source: Department of Defense

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PSYCHOMETRIC EVALUATION OF THE ARABIC BRIEF PAIN INVENTORY ON A SAMPLE OF LEBANESE CANCER PATIENTS.

Suha Ballout, RN, MSN, American University of Beirut, Beirut, Lebanon; and Samar Noureddine, RN, PhD, American University of Beirut, Beirut, Lebanon

Pain is recognized to be a challenging phenomenon by patients and healthcare workers and is perceived to contribute extensively to their quality of life and satisfaction with care.

Nurses play a major role in the management of cancer pain. Their initial role lies in the assessment of pain, using an appropriate and culturally sensitive tool that is reliable and valid.

Pain is a common complaint in oncology patients, where evidence shows that it is undertreated. The assessment of pain is essential for its management.

The aim of this study was to evaluate the psychometric properties and cultural sensitivity of the Arabic Brief Pain Inventory (BPI) in a Lebanese sample of cancer patients.

Research questions that were addressed were:

1. Is the Arabic BPI culturally sensitive to the Lebanese cancer patient population?
2. Is the Arabic BPI internally consistent in a Lebanese cancer patient sample?
3. Do the dimensions obtained in other versions of the BPI replicate in a Lebanese sample of cancer patients?
4. What is the relationship between pain intensity and its interference with various aspects of the participant's life in a Lebanese sample of cancer patients?

5. What is the relationship between the average pain intensity and perceived relief of pain from treatment?

The nursing process is a scientific approach that aims to deliver care in a systematic and effective way.

A convenience sample of 75 clients diagnosed with cancer and complaining of cancer pain who are treated in the in-patient and out-patient departments at (AUB MC) were recruited for the study.

The Brief Pain Inventory was translated to Arabic in 2001, piloted in Morocco. The tool was tested for its cultural sensitivity by a panel of experts and then piloted on a sample of 5 patients. The recommended modifications were integrated. Psychometric testing was conducted on a sample of 75 patients meeting the inclusion criteria of the study.

Results of this study support the validity, reliability and cultural sensitivity of the Arabic BPI in Lebanese oncology clients. This tool can be used to assess pain and improve its management in this population.

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FINDING SYNERGY: THE CHALLENGES AND BENEFITS OF CLINICIANS AND ACADEMIC RESEARCHERS COLLABORATING ON RANDOMIZED CLINICAL TRIALS (RCT).

Yvonne Barnes, RN, MSN, CPNP, St. Louis Children's Hospital, St. Louis, MO; Verna Hendricks-Ferguson, RN, PhD, Goldfarb School of Nursing at Barnes-Jewish College, St. Louis, MO; Sharron Docherty, PhD, CPNP, Duke University School of Nursing, Durham, NC; Joan Haase, RN, PhD, FAAN, Indiana University School of Nursing, Indianapolis, IN; Brooke Oakley, RN, MPH, Children's Healthcare of Atlanta, Atlanta, GA; Lona Roll, RN, MSN, CHRISTUS Santa Rosa Children's Hospital, San Antonio, TX; and Kristin Stegenga, RN, PhD, Children's Mercy Hospital, Kansas City, MO

The purpose of this presentation is to describe the challenges and benefits of academic/clinical partnerships established for a multi-site behavioral, randomized Phase II clinical trial of a music therapy intervention.

The SMART study aims to improve symptoms, and enhance resilience and quality of life outcomes for hospitalized adolescents/young adults undergoing stem cell transplant (SCT). This study is complex for many reasons: two culturally different funding sources, 6 participating sites with 9 hospitals; multiple disciplines involved; multiple measurement times, and on-line remote data entry by participants and study personnel. To establish and sustain a collaborative research effort, multiple communication strategies were developed among the team members. These included in-person training meetings to establish connectedness among team members and regularly scheduled telephone conferencing using web-based technology to enhance communication for study implementation and dissemination.

Despite the complexity of the study, the team has overcome challenges regarding work demands and priorities as well as differences in the language and cultures of academia and clinical practice. Nurses from both academic and clinical settings, who are in roles of study and site principal investigators, project managers, and evaluators, experience valued benefits, such as professional role fulfillment (e.g., collaboration on publications), hospital-wide advantages (e.g., supports magnet status), learning opportunities (e.g., insights regarding clinical issues, scientific rigor and translation), clinical practice improvements (e.g., sharing SCT practices across sites) and networking (e.g., interdisciplinary collaboration).

Developing strong nurse clinician and academic nurse researcher partnerships are important to the successful planning and implementing randomized clinical trials (RCT's). Such partnerships lead to research that is both relevant and feasible and ultimately more easily translated into clinical practice. Lessons learned from building these relationships may result in a model for improvement in future data collection and study implementation.

Clinical institutions benefit from the expertise and mentoring of academic partners to foster research excellence, scholarship, and evidence-based nursing care. Nurse scientists benefit from practical implementation insights and the comprehensive knowledge of patients that clinicians bring to the collaboration.

Carefully established and nurtured academic/clinical partnerships can result in a win-win for healthcare organizations and universities, providing professional development to nurse clinicians, administrators, and educators.

Funding Sources: NIH-NINR/NCIType: RO1 0085883-01A1Period:07/01/05 06/30/09

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THE ACTS INTERVENTION TO DECREASE BREAST CANCER TREATMENT DISPARITY.

Margaret Rosenzweig, PhD, APN-BC, AOCNP®, University of Pittsburgh, Pittsburgh, PA; Susan Sereika, PhD, University of Pittsburgh, Pittsburgh, PA; and Brenna Conroy, BS, University of Pittsburgh, Pittsburgh, PA

Nonadherence to breast-cancer treatment specifically adjuvant chemotherapy may be among the reasons for worse breast-cancer outcomes in black women.

Primary Specific Aim #1: To compare the effect of ACTS and usual care on the primary endpoint of treatment adherence in black women receiving first chemotherapy for breast cancer.

Primary Specific Aim #2: To examine the effect of the ACTS Intervention on proximal outcomes that may influence treatment adherence during breast cancer chemotherapy including; 1) health belief and attitudes; 2) satisfaction with health care provider communication; 3) symptom incidence and severity; 4) overall cancer related distress; 5) quality of life measures; 6) understanding tumor and treatment; and 7) social support.

Kressin conceptualizes a minority patient decision making process as influenced by three realms- 1) patient factors such as health related beliefs, 2) physician factors, and 3) system factors.

Pilot, randomized, controlled, clinical trial, 2 group design, with one time intervention and 4 data collection points (at baseline and three time points corresponding to chemotherapy completion - 50%, 75%, and 100%). Recruitment was from two University of Pittsburgh Cancer Institute clinics from March, 2007 through March, 2008.

Thus far, n=26 patients have been enrolled, 16 completed the recommended chemotherapy, n=6 are in treatment and completing chemotherapy and 4 have chosen to not begin or have discontinued recommended chemotherapy. The groups were equal in key sociodemographic variables. Compared to Usual Care, the ACTS Intervention subjects demonstrated better trends toward initiation of chemotherapy (100% vs. 80%), overall adherence to chemotherapy (92% vs.78%), and percentage of total dose of chemotherapy received/prescribed (94.4% vs. 73.8%). Compared to Usual Care, the ACTS Intervention subjects demonstrated more rapid initiation of chemotherapy and better overall adherence to chemotherapy. Additionally, there were trends toward improved quality of life, less symptom distress and less overall cancer related distress in the ACTS intervention group. These exciting preliminary results warrant confirmation in a larger trial.

Funding Source: Susan G. Komen Research

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WHY WON'T YOU PARTICIPATE? RECRUITMENT ISSUES AND STRATEGIES IN CLINICAL TRIALS.

Carole Bauer, BSN, OCN®, CWOCN, Karmanos Cancer Center, Detroit, MI; Elizabeth A. Galvin, RN, MS, AOCNS®, Karmanos Cancer Center, Detroit, MI; and Rita J. DiBiase, MSN, APRN, BC, AOCNS®, Karmanos Cancer Center, Detroit, MI

To describe recruitment issues for a nursing research study on perineal dermatitis.

Recruitment into a trial focusing on the prevention of perineal dermatitis in immune compromised patients has been fraught with problems stemming from lack of identification of subjects for the study and refusal of subjects to participate in the trial. Within this trial, recruitment has been affected by attrition of unit-based champions and turnover of unit staff nurses who originally identified the problem. Additional problems have included staff nurses' bias, availability of the product in the standard care arm for patients not enrolled in the study, time constraints, and severity of illness of the patient population.

Clinical trials often experience some degree of problems with recruitment and enrollment even though clinical trials involving chemotherapeutic regimens are a common part of clinical practice in major cancer centers. Trials that focus on supportive care can face additional recruitment challenges. The factors affecting participation remain unclear, although patients whose severity of illness, real or perceived, is high may be less willing to participate.

1. Define a perceived benefit to the patient for participating in the study
2. Continue with aggressive education and awareness campaigns about the research in progress as staff changes are made,
3. Identify study champions who can serve as team members and assist with identification of potential subjects
4. Plan time commitment required by the recruiters carefully

Successful enrollment into a clinical trial is dependent upon careful planning and review throughout the enrollment process. There must be a perceived benefit to the patient participating in the study. As staff changes are made, aggressive education about the purpose of the study and its importance is necessary. Unit champions are important for identification and enrollment of patients into this study. Nurses need to increase their awareness of tendencies to identify a certain group of patients over others for enrollment into clinical trials. Constraints on clinician time for identification and recruitment must also be considered when planning a time line for recruitment.

Funding Source: Sage Grant, Wound, Ostomy Continence Nursing Society Center for Clinical Investigation

Symptoms in Oncology Patients

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EXPLORING CANCER PAIN IN SOUTHWESTERN AMERICAN INDIANS. Emily Haozous, RN, MSN, APRN, BC, Yale University School of Nursing, New Haven, CT

Pain is a problem for as many as 90% of people with end-stage cancer. Minorities who have cancer pain are more likely to be undermedicated than Caucasians. American Indians (AI) with cancer are more likely to be diagnosed at later stages and have poorer outcomes. Due to disparity in outcomes and treatment, the topic of cancer pain in AI is important to oncology nurses.

The pain experience in AI is poorly understood. The purpose of this study is to explore the experience of cancer pain among AI in Northern New Mexico in order to develop a deeper understanding of the cancer pain experience and strategies for effective pain management. The specific aims of this study are to: 1) Describe the experience of cancer pain in AI patients. 2) Explore the insights and perspectives of providers who deliver care to AI with cancer.

Since little is known about the cancer pain experience in AI, research is necessary to build an understanding which informs future research. In a system where there are few AI health care providers, ethnography aids in bridging cultural gaps in care and knowledge. This is a naturalistic targeted ethnographic inquiry, focused on exploring the specific cultural elements that influence the treatment of cancer pain in AIs of Northern New Mexico.

Data are collected through semi-structured interviews, field notes, and participant observation. Informants include AI people with cancer and their families, oncology and hospice nurses, and doctors who care for AI patients with cancer. Data are being analyzed through a process of immersion, synthesizing, and recontextualizing. Informants are validating these preliminary results to establish authenticity and trustworthiness of findings, and new findings from the validation process are being incorporated into the analysis.

Preliminary findings suggest the following themes: privacy, family, poor pain education, difficulties with the health care system, and a perceived futility in reporting pain. Implications for research, education and practice include improvement of pain education, inclusion of family in pain education, and further research in improving healthcare delivery to this population so that patients feel their complaints of pain are heard.

Funding Sources: NRSA F31 Predoctoral Fellowship and ACS Doctoral Fellowship

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COGNITIVE FUNCTION IN BREAST CANCER SURVIVORS COMPARED TO HEALTHY AGE- AND EDUCATION-MATCHED WOMEN. Diane Von Ah, PhD, RN, Indiana University, School of Nursing, Indianapolis, IN; Kyle Harvison, PhD, Indiana University, School of Medicine, Indianapolis, IN; Patrick Monahan, PhD, Indiana University, School of Medicine, Indianapolis, IN; Janet Carpenter, PhD, Indiana University, School of Nursing, Indianapolis, IN; Victoria Champion, PhD, Indiana University, School of Nursing, Indianapolis, IN; Lyndsi Moser, BA, Indiana University, School of Medicine, Indianapolis, IN; and Fredrick Unverzagt, PhD, Indiana University, School of Medicine, Indianapolis, IN

SIGNIFICANCE: Cognitive dysfunction is a prevalent, bothersome, and persistent symptom in breast cancer survivors (BCS). Up to 83% of BCS report some level of cognitive dysfunction. A recent meta-analysis of seven studies and over 300 BCS indicated that survivors, as a group, showed lower performance on objective tests of cognitive function relative to controls. However, what is not well understood is the extent or prevalence of clinically significant cognitive impairments among BCS. Previous studies have been limited to comparison samples (published norms) that do not match on individual demographic variables (e.g., age, education) within a sample or comparison studies that use a wide variety of testing procedures (e.g., differences in the number, order, or types of tests administered). Such differences confound results making it difficult to understand the frequency of serious cognitive deficits in individual BCS.

PURPOSE: The purpose of this study was to examine cognitive functioning of BCS compared to age-and-education matched healthy control (HC) women using sensitive neuropsychological measures.

SCIENTIFIC FRAMEWORK: A biobehavioral framework was used.

METHODS: A cross-sectional, case-control design was used. 52 HC and 52 BCS were recruited from the community and administered a battery of neuropsychological tests. Tests were administered in-person or over the phone, two methods previously found to be comparable. The assessment battery included objective measures of short and long-term memory; attention, concentration, and working memory; executive functioning and language; cognitive processing speed, and self-report measures of mood and memory. Clinically significant impairment was defined as scores 7th percentile of the HC group. Data was analyzed using descriptive statistics, t-tests, chi-square.

FINDINGS & IMPLICATIONS: BCS reported significantly more memory loss and exhibited significantly worse memory test performance than individually-matched HC. At an individual level, 17% of the BCS had clinically significant impairment in short and long-term memory and 25% were impaired on one or both of these measures. Overall, 36% of BCS had impairment on one or more of the five performance-based cognitive tests. Results suggest BCS have moderate levels of clinically significant cognitive impairment with memory deficits being a primary concern. Interventional research is needed to address memory deficits in BCS.

Funding Sources: American Cancer Society (RSGPB-04-089-01-PBP), the Mary Margaret Walther Program of the Walther Cancer Institute (100-200-20572), the NIA (P30 AG10133), and NINR training fellowship to Dr. Von Ah (T32 NR007066).

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A FIVE FACTOR MODEL PREDICTS WORSE OUTCOME IN A SELECTED AUTOLOGOUS TRANSPLANT PATIENT POPULATION.

Robert Rice, RN, PhD, AOCNP®, Memorial Sloan-Kettering Cancer Center, New York, NY

The engraftment syndrome (ES) consists of two or more signs and symptoms occurring during neutrophil engraftment after autologous stem cell transplantation. Although no definitive model or set of diagnostic criteria exist, ES is associated with increased morbidity, mortality, and treatment related costs.

To evaluate the signs and symptoms variables associated with the engraftment syndrome in a series of autologous transplant patients. To determine if any naturally forming sub-groups were present based on these variables.

Clinical exploration of risk modeling using physiologic variables in a homogenous population of transplant patients.

Medical records for 66 patients with hematologic malignancies and who were undergoing high-dose therapy and autologous stem cell transplantation between 2002 and 2004 were reviewed retrospectively. We applied Two Step Cluster Analysis, first with hierarchical cluster analysis followed by k-Means cluster analysis, to determine if sub-groups formed based on the input physiological variables and if group differences in antecedent and outcome characteristics were apparent.

Nine initial variables were assessed and five variables remained in the model. These were white blood count, hypoxia, renal, hepatic and fluid balance. Two sub-groups were formed, the smaller of which had significantly higher treatment related morbidity. The patients in the "high morbid" sub-group had a higher rate of transfer to the intensive care unit ($p = 0.01$); more documented infections ($p = 0.003$) and positive radiographic findings ($p = 0.006$); required increased supportive care measures including red blood cell ($p = < 0.001$) and platelet transfusions ($p = 0.02$) and days of antibiotic ($p = 0.02$) and antifungal use ($p = 0.02$). An unexpected finding is that female gender was overrepresented in the "high morbid" group ($p = 0.02$). In long term follow up, there are no significant group differences in event-free and overall survival. These data lend support to close attention to the signs and symptoms associated with the engraftment syndrome and careful patient monitoring during the engraftment phase to identify patients with potential higher risk of transplant-related adverse events and worse outcomes. This five sign risk model should be validated in a prospective study.

Funding Sources: American Cancer Society DSCN-04-228-01; NCI R25 CA093831 (Kathi Mooney, PI)

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PATIENT-RELATED BARRIERS TO PAIN MANAGEMENT: THE ARABIC BARRIERS QUESTIONNAIRE II.

Nijmeh Al-Attiyyat, MSN, RN, Wayne State University, Detroit, MI; and April Vallerand, PhD, RN, FAAN, Wayne State University, Detroit, MI

Pain is one of the most common symptoms associated with cancer. In Jordan, only limited research has been conducted concerning pain or pain management. Instruments to conduct such research have been lacking.

1) to translate to the Arabic language, adapt, and test the Barriers Questionnaire II (BQ-II) to measure Jordanian cancer patients' barriers to pain management; 2) to describe the barriers to cancer pain management of cancer patients in Jordan; 3) to examine the relationships between these barriers and patients' ratings of pain intensity, and pain interference with function; and 4) to determine which factors predict patients' perceived barriers to cancer pain management.

A framework of attitudinal barriers and quality of life tested by Ward and colleagues was used in this study. The model informs the selection of variables for this study.

In this descriptive correlational study a convenience sample of 150 patients will be recruited from the outpatient cancer clinic at a regional comprehensive cancer center in Jordan. The Barriers Questionnaire (BQ-II) will be translated to Arabic, validated, back-translated to English, and pretested. Patients will complete the Arabic Barriers Questionnaire (ABQII), Brief Pain Inventory (BPI), and demographic questionnaire. Data will be analyzed using SPSS 16.0 statistical software. Analyses will include descriptive statistics of all the study variables, internal consistency and reliability estimates, construct validity using factor analysis, and predictive validity using multiple regression analyses Pearson's product moment correlations and Student's t-tests will be used to determine the relationships between study variables. A p-value of < 0.05 will be considered statistically significant.

The study is in progress. Preliminary findings support the reliability and validity of ABQII. The findings from this study will contribute significantly to the literature of cancer pain management and provide direction for assessing cancer patients at high risk for having negative pain beliefs, and will allow for cross-cultural comparisons. Moreover, the ABQ-II can be used in planning and testing interventions to understand and improve Arabic patient's attitudes to cancer pain management and practice.

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SYMPTOM TRAJECTORIES IN POST-TREATMENT SURVIVORS: A LATENT GROWTH CURVE ANALYSIS.

Jeannine Brant, APRN, AOCN®, St. Vincent Healthcare, Billings, MT; Susan Beck, PhD, RN, AOCN®, FAAN, University of Utah, Salt Lake City, UT; William Dudley, PhD, University of North Carolina, Greensboro, NC; Ginette Pepper, PhD, RN, FAAN, University of Utah, Salt Lake City, UT; Patrick Cobb, MD, Hematology Oncology Centers of the Northern Rockies, Billings, MT; and Christine Miaskowski, PhD, RN, FAAN, University of California, San Francisco, San Francisco, CA

The transition from cancer treatment to follow-up is an uncertain time for cancer survivors. During the post-treatment phase, survivors may continue to experience physical and psychological sequelae related to the disease or its treatment.

The objectives of this study were to: 1) examine post-chemotherapy symptom trajectories in post-treatment survivors, and 2) determine whether individual characteristics predicted symptom trajectories.

The Symptoms Experience Model, that takes into account the global experience of multiple cancer-related symptoms, served as the guiding framework for this study.

This retrospective, longitudinal analysis included 100 patients who recently completed chemotherapy for lung cancer, colorectal cancer, or lymphoma. Symptoms were rated on an electronic patient care monitor system in an outpatient cancer care clinic. Latent growth curve analyses were conducted to examine the trajectories of pain, fatigue, sleep disturbance, distress, and depression in post-treatment cancer survivors. Data were modeled for 16 months post initial chemotherapy to detect trajectories of growth and predictors for the five symptoms.

Symptoms at the first follow-up visit were significantly different than zero ($p<0.0001$). Growth curves over the 16 month trajectory were not significantly different from zero, indicating that for the sample, symptoms persisted. The depression trajectory (quadratic) was predicted by gender. Males showed a convex curvilinear growth trajectory for depression whereas females showed a concave curvilinear trajectory ($p<0.05$). Higher distress was predicted by a younger age ($p<0.05$) at the first follow-up visit (2 to 6 weeks). More pain was experienced in younger patients, those with lung cancer, those with stage III and IV disease, and nonCaucasian patients at the first follow-up visit ($p<0.05$). NonCaucasian patients also experienced more depression, sleep disturbance, and pain throughout the 16 month post-treatment trajectory ($p<0.05$).

This study demonstrated that psychological and physical symptoms can persist in post-treatment cancer survivors. It appears that some individual characteristics place patients at risk for more severe post-treatment symptoms, but further studies are warranted.

Funding Sources: American Cancer Society, NCI Educational Grant (Kathy Mooney, PI)

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WHAT KEEPS ME AWAKE: THE EXPEREINCE OF LUNG CANCER AND SLEEP DISTURBANCES.

Suzanne Dickerson, RN, DNS, University at Buffalo, State University of New York, Buffalo, NY; and Grace Dean, PhD, RN, University at Buffalo, State University of New York, Buffalo, NY

Lung cancer is the leading cause of cancer deaths in the US, and often individuals with lung cancer rapidly become terminal. Given the short time frame, few studies have been conducted to listen to the stories of the patients for their practical advice. While a few qualitative studies have been conducted to understand the experience of lung cancer, none specifically ask how the diagnosis affects sleep. Sleep disturbances are more prevalent in the cancer population and it is unknown how lung cancer patients live and/or attempt to manage their sleep.

The purpose of this study is to understand the common meanings and experiences of sleep disturbances in lung cancer patients through analysis of narrative stories. The specific aims are: 1.) to understand how sleep patterns have changed since diagnosis, 2.) to describe sleep disturbances and how the changes affect their daily lives since diagnosis, and 3.) to describe practical knowledge and advice the individuals use to attempt to manage sleep.

Interpretive phenomenological approach of Heideggerian Hermeneutics forms the basis for development of the research question, interview questions and analysis of narratives.

20 individuals with lung cancer treated at VA Medical Center are being interviewed after a clinic visit and asked open ended questions about their diagnosis, how it influences their sleep and what they would suggest for other lung cancer patients. The seven stage hermeneutical process was used to analyze the narrative texts.

Preliminary findings indicate that the experience of lung cancer is situated in the life stories of the individuals including hopes and dreams, past experiences, and the reality of their shortened future. Sleep problems are influenced by: previously existing problems (i.e. depression), worry about the future, physical experience of pain, cough and treatment effects. Individuals lay awake thinking about unfinished business, their mortality, and wondering if they go asleep -will they wake up. Findings offer insight to providers in assisting the individuals to work through their concerns, plan the future, explore meaning, and offer practical advice on how to manage.

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DEVELOPMENT OF DECISION SUPPORT COMPUTER PROGRAM FOR CANCER PAIN MANAGEMENT.

Eun-Ok Im, PhD, MPH, RN, FAAN, University of Texas at Austin, Austin, TX; Wonshik Chee, PhD, University of Texas at Austin, Austin, TX; and Chia-Chun Li, MSN, University of Texas at Austin, Austin, TX

Very few decision support systems have been developed to support nurses' decisions on pain management for cancer patients. Furthermore, the currently available decision support systems are not based on actual data from cancer patients, which make them not easily acceptable to nurses.

The purpose of the study was to develop a decision support system for cancer pain management that supports nurses' decisions on cancer pain management especially for ethnic minority cancer patients.

Fuzzy logic was used as the theoretical basis for development of the decision support system.

The study included two phases: (a) data collection; and (b) development of the DSCP-CA. The data collection phase adopted an Internet survey among 428 cancer patients and four ethnic-specific online forums (about 30 per online forum) to gather the data on cancer pain experience of four major ethnic groups in the U.S. The Internet survey used questions on sociodemographic characteristics, health/illness status, self-reported ethnicity and level of acculturation, and five cancer pain scales (visual analogue scale, verbal descriptive scale, face scale, Brief Pain Index and McGill Pain Questionnaire). The online forums used nine discussion topics on cancer pain experience. Then, the data were analyzed using descriptive and inferential statistics. The development phase included two components: (a) development of three modules including knowledge base module, decision module, and self-adaptation module; and (b) 3-month evaluation of the DSCP-CA to incorporate feedbacks from nurses.

The Internet survey and online forum data were processed into fuzzy sets and crisp sets. Then, based on the fuzzy sets and crisp sets, ethnic-specific algorithms for the decision module were developed. Using the self-adaptation module, the DSCP-CA was further refined as more data were processed. Then, based on the evaluation of the initial version of the DSCP-CA through the online forum among nurses, the DSCP-CA was further developed with more components suggested by the nurses. The nurses suggested further development of the DSCP-CA with more detailed information on sub-ethnic variations in cancer pain experience because there are certain sub-ethnic variations in cancer pain experience even within an ethnic group.

Funding Sources: NIH/NINR/NCI

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PRELIMINARY FINDINGS OF A PILOT STUDY EXPLORING CYTOKINES AND FATIGUE IN WOMEN WITH BREAST CANCER.

Barbara Raudonis, PhD, RN, University of Texas at Arlington School of Nursing, Arlington, TX; and Jenny Ellis, RN, MS, AOCN®, Harris Methodist HEB Hospital, Bedford, TX

Fatigue remains a prevalent, persistent and debilitating side effect of chemotherapy for Stage I and Stage II breast cancer. Its pathophysiology is still unknown. Evidence suggests proinflammatory cytokines induce classic sickness behaviors such as fatigue. The association between genetic variants and medication efficacy and toxicity is well established, but the association between genetic variants and symptom intensity has received less attention. These associations need to be understood to improve care of those with breast cancer.

We are exploring cytokine and fatigue levels during chemotherapy treatment. The specific aims are to determine associations between levels of IL1-α,IL-6,TNF-α and fatigue, and patterns of change in these associations over time.

Physiologic theory guided the choice of the three cytokines.

This pilot study is a descriptive, longitudinal, correlational design. A convenience sample of 20 English speaking, stage I or II breast cancer patients, scheduled for but not yet receiving outpatient chemotherapy will be enrolled. Informed consent will be obtained prior to enrollment. Data from the pilot study will be used to determine the power and sample size for future investigations. Blood samples and completed Revised Piper Fatigue Scale forms will be collected on day 1 (baseline before receiving chemotherapy) and days 7, 14, and 21 for each treatment cycle, and then two months after completion of chemotherapy treatment.

Serum cytokine levels from each data point will be determined using enzyme linked immuno-sorbent assays (ELISAs). Fatigue levels will be determined using the Revised Piper Fatigue Scale which has well established reliability and validity. The sample will be described using descriptive statistics. Correlation coefficients will determine the presence of associations between cytokines and fatigue levels. Trends over time will be identified.

The results will establish the groundwork for future investigations of associations between genotypic variants of proinflammatory cytokines and levels of fatigue over the course of chemotherapy. Results will also contribute to the development

of personalized interventions for women with early breast cancer based on their own genetic variants.

Funding Source: the Research and Education Institute for Texas Health Resources

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PATIENTS' EXPERIENCES OF HIGH DOSE RATE BRACHYTHERAPY TREATMENT FOR CERVICAL CANCER.

Kristine Kwekkeboom, PhD, RN, University of Wisconsin-Madison School of Nursing, Madison, WI; Nancy Dendaas, MS, RN, University of Wisconsin Hospital & Clinics, Madison, WI; Margaret Straub, PA-C, University of Wisconsin Hospital & Clinics, Madison, WI; and Kristen Bradley, MD, University of Wisconsin Hospital & Clinics, Madison, WI

High dose rate (HDR) brachytherapy is an established treatment modality for women with cervical cancer. Because of its exposing nature and invasiveness, HDR brachytherapy may produce significant pain and distress, but very little research has explored women's experiences of this treatment.

To describe patterns of pain and distress experienced over a course HDR brachytherapy treatment; to explore women's physical and emotional evaluation of the series of procedures, and to determine if women recall pain experienced during HDR brachytherapy despite receiving conscious sedation.

Self-regulation theory provided the basis for collecting information necessary for accurate sensory preparation of patients.

Using a descriptive design, data were collected from 17 women undergoing a series of 5 weekly HDR brachytherapy procedures. At each procedure, we collected ratings of pre-procedure and procedural pain intensity and distress using a 0 – 10 numeric rating scale. Participants completed an evaluation after each procedure, rating 15 sources of physical and emotional discomfort and overall physical and emotional distress. Prior to procedures 2 – 5, participants were asked if they recalled experiencing pain during the previous treatment.

On average, women experienced only mild pain (M = 1.09 – 3.14) and distress (M = 1.32 – 2.93). Pain and distress ratings did not differ significantly across the series of five procedures. The top three sources of physical and emotional discomforts were discomfort from instruments being removed (M = 1.52), worry about the effects of treatment (M = 0.79), and discomfort from the size of instruments (M = 0.58). Overall physical (M = 2.54) and emotional (M = 1.88) distress ratings were also mild. Some patients did recall pain from previous procedures despite conscious sedation medications. Women who recalled pain had reported greater worst pain during the procedure than women who did not recall having pain. Findings should be used to help women develop accurate sensory expectations for HDR brachytherapy. Interventions to minimize pain associated with instrument removal should be designed and tested in this population.

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A PROSPECTIVE LONGITUDINAL STUDY OF THE EXPERIENCE OF WOMEN WITH BREAST CANCER TREATED WITH PARTIAL BREAST IRRADIATION.

M. Tish Knobf, RN, PhD, AOCN®, Yale University School of Nursing, New Haven, CT; Jennifer Collins, RN, MSN, C-NP, Yale University, New Haven, CT; Kayao Tam, RN, MSN, C-NP, Commonwealth Hematology-Oncology, Boston, MA; Allison Proto, BS, Yale University School of Nursing, New Haven, CT; Kristopher Fennie, PhD, Yale University School of Nursing, New Haven, CT; and JoAnn Weidhaas, MD, Yale University School of Medicine, New Haven, CT

Breast conservation therapy (lumpectomy, lymph node sampling, whole breast radiation) is a treatment option for early stage breast cancer, with the radiation delivered weekly for > 6 weeks. Partial breast irradiation (PBI) is being investigated as an alternative therapy, delivered at accelerated doses to the tumor site over a shorter interval (e.g. one week). There are no known published data on the symptom experience, body image or quality of life outcomes for women who receive PBI.

The purpose of this study is to describe 1) breast symptoms, 2) perceived body image and 3) quality of life (QOL) for women before and after PBI.

The study is a prospective longitudinal design with recruitment of a convenience sample of women with breast cancer scheduled for PBI. Data are collected before treatment and at 1, 3, 6 and 12 months later with reliable and validated questionnaires: Breast Cancer Treatment Outcomes Scale, Body Image Scale, and QOL (FACT-B). This study is in progress and descriptive statistics were used to present data collected at baseline, 1 and 3 months after PBI.

To date, 29 participants have been recruited and 23 women have completed 3 month data collection. The average age was 62.2 yrs (SD 12.4). The majority of women were white (95%), married (62%), employed (68%) and 54% were college educated. Comparing the treated breast with the untreated breast at one month after PBI, women reported slight differences for size (64%), sensations (57%), scar tissue (54%), tenderness and shape (50%), texture and nipple appearance (43%), pain (31%), and how clothes fit (14%). Most symptoms improved at 3 months except for the presence of scar tissue. Women's reported perceptions of body image were relatively positive, although lowest before beginning PBI with improvement over time for self consciousness about appearance, feeling physically attractive, and dissatisfaction with body and surgical scar. This is an ongoing study and current data are limited by sample size and power to statistically determine changes over time.

Funding Source: Yale University School of Nursing Intramural Funds

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TRAJECTORIES OF FATIGUE IN WOMEN WITH BREAST CANCER DURING AND AFTER RADIATION THERAPY.

Claudia Marie West, RN, MS, University of California, San Francisco, San Francisco, CA; Marylin Dodd, RN, PhD, University of California, San Francisco, San Francisco, CA; Steven Paul, PhD, University of California, San Francisco, San Francisco, CA; Kathryn Lee, RN, PhD, University of California, San Francisco, San Francisco, CA; Bradley Aouizerat, PhD, University of California, San Francisco, San Francisco, CA; and Christine Miaskowski, RN, PhD, University of California, San Francisco, San Francisco, CA

Recently, Bower noted that "although research on cancer-related fatigue has become increasingly more sophisticated, few longitudinal studies have been conducted that assess patients before and after cancer treatment" and called for longitudinal studies that identify the different trajectories of fatigue.

The purposes of this study, in a sample of patients who underwent RT for breast cancer, were to examine how ratings of fatigue changed from the time of simulation to four months after the completion of RT and to investigate whether patient, disease, and symptom characteristics predicted the initial levels of fatigue and/or the trajectories of fatigue.

The UCSF Symptom Management Model served as the theoretical framework.

Seventy-three women who received primary or adjuvant RT completed a demographic questionnaire, the Lee Fatigue Scale prior to going to bed for a total of 16 assessments over 6 months, and the Center for Epidemiologic Studies Depression Scale. Hierarchical Linear Modeling (HLM) was used to evaluate the trajectory of fatigue.

Patients were White (69.9%), married/partnered (37.0%) with a mean age of 55.1 years, and had received 5828.9 cGys. The first HLM analysis examined how fatigue changed over time and determined that the trajectory was quadratic. At the time of the simulation visit, the estimated amount of fatigue was 4.64 (0 to 10

scale). The next HLM analysis tested the hypothesis that the pattern of change over time in fatigue varied based on pre-specified predictor variables. The two variables that predicted the intercept (i.e., fatigue levels at the beginning of RT) were presence of children at home and baseline level of depression. Women who were younger and who had higher levels of depression at the beginning of RT had significantly higher levels of fatigue at the initiation of RT and throughout the course of RT. Employment status was a significant predictor of the slope. The use of HLM is an important analytic tool to identify patients with different fatigue trajectories. This type of analysis may lead to the identification of different subgroups of patients who require different types of fatigue interventions.

Funding Source: National Institute of Nursing Research (NR04835)

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HAS THE EVOLUTION OF AUTOLOGOUS TRANSPLANT AS A TREATMENT MODALITY CHANGED THE NATURE OF THE ENGRAFTMENT SYNDROME?

Robert Rice, RN, PhD, AOCNP®, Memorial Sloan-Kettering Cancer Center, New York, NY

Engraftment syndrome (ES) in autologous transplant is a significant potential complication of treatment and leads to higher treatment-related morbidity and mortality. ES is a clinical syndrome occurring during neutrophil engraftment after stem cell transplant. No definitive clinical diagnostic model exists. Patients who experience ES have greater transplant related morbidity and mortality than patients who do not. Oncology nurses are most likely to identify subtle clinical changes which may suggest impending ES or organ dysfunction.

Approximately 45,000 autologous transplants are performed annually worldwide so even a conservative estimate of the incidence of the Engraftment Syndrome (ES) would suggest high morbidity, mortality and healthcare resource utilization and costs for thousands of patients. Still, no definitive diagnostic model exists for ES. No overarching historical context has been provided in the literature to show how the development of high-dose therapy and autologous stem cell transplant (HDT/ASCT) as a treatment modality has also significantly impacted the definitions of ES. Further, there is no nursing literature on ES.

A comprehensive literature review with synthesis of the reports on ES in historical context was undertaken using database searches of PubMed, CINAHL, Cancerlit, MEDLINE, PsychINFO and EMBASE from the first appearance of a report of ES (1994) to the present day. The current diagnostic models are reviewed in the context of today's homogenous, better selected patient population.

Careful monitoring of the patient's clinical status, vital signs including pulse oximetry, physiologic measures and evaluation of key physical examination, laboratory and radiographic findings are critical. Nurses can intervene early to help prevent engraftment syndrome and organ dysfunction.

Early identification of signs and symptoms associated with ES and interventions designed to prevent further organ damage are critical. Clinical and advanced practice nurses in transplant settings are key participants in identifying subtle changes in patient condition, collecting and interpreting key physiologic and laboratory data, and acting on their clinical interpretation of the signs and symptoms of ES. Future research is needed to evaluate and identify patients at increased risk, determine bio-markers which identify altered physiologic processes, and institute efforts to suppress the inflammatory process which may trigger ES and organ dysfunction.

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NEUROCOGNITIVE FUNCTIONING IN ADULTS UNDERGOING TREATMENT FOR UPPER AERODIGESTIVE SYSTEM CANCERS.

Stewart Bond, PhD, RN, AOCN®, Vanderbilt University School of Nursing, Nashville, TN; Mary Dietrich, PhD, Vanderbilt University School of Nursing and Medicine, Nashville, TN; and Barbara Murphy, MD, Vanderbilt University School of Medicine, Nashville, TN

During and after cancer treatment, patients often report neurocognitive changes which negatively affect their daily functioning and quality of life. Neurocognitive changes have been documented in breast cancer and stem cell transplant patients; however, data are lacking in patients with other disease sites.

To describe how neurocognitive functioning changes over time during treatment in adults with upper aerodigestive system cancers (head and neck, lung, or esophagus).

A biopsychosocial model addressing neurocognitive functioning and associated factors.

This is a longitudinal, descriptive exploratory study. Up to 100 adults (21 years and older) with newly diagnosed cancers of the upper aerodigestive system will be recruited from an NCI-designated Comprehensive Cancer Center (30 currently enrolled). Participants are followed prospectively from prior to initiation of cancer treatment to 3 months after treatment completion, for a total of 6 months of continuous treatment, or until death, whichever comes first. Data collection interviews are conducted at baseline before treatment, at scheduled treatment visits, and at a post-treatment follow-up visit. Specific neurocognitive domains (verbal memory, attention, processing speed, language, visuo-spatial construction, executive functioning) are assessed using a neuropsychological battery at baseline and following treatment completion. Global neurocognitive functioning and subjective neurocognitive problems are measured at baseline, during treatment, and following treatment. Descriptive statistical and graphical techniques will be used to summarize and visualize patterns of change in neurocognitive functioning throughout the assessment period. Confidence intervals will be generated for estimates of incidence and relative risk. Group-based trajectory modeling methods, as well as Cox regression methods, will be used to explore patterns of change in neurocognitive functioning during treatment. Pre-existing or baseline characteristics associated with particular patterns of change will be examined.

Findings will provide a foundation for future studies on the epidemiology, risk factors, and ramifications of neurocognitive impairment in adults undergoing cancer treatment, and will lead to interventions that prevent or minimize the effects of neurocognitive impairment on cancer patients and their families.

Funding Sources: John A. Hartford Foundation Building Academic Geriatric Nursing Capacity Program and Vanderbilt University School of Nursing Postdoctoral Fellowship Program

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DEVELOPMENT OF SCALE FOR MEASURING SELF-CARE AGENCY FOR SYMPTOM MANAGEMENT OF CANCER PAIN.

Harue Arao, RN, MNS, University of Hyogo, Akashi Hyogo, Japan

Pain occurs in 30-70% of patients with cancer. Unrelieved pain interferes with performance of daily activities and diminished quality of life. The patient's self care is necessary for effective pain management. However, the tool that measuring self-care agency for symptom management of cancer pain was not developed.

The purpose of this study was to develop a scale for measuring the self-care agency for symptom management of patients receiving cancer pain treatment, and to examine the reliability and validity of the scale.

This research was based on the models of self-care proposed by Orem.

A draft of the scale was developed on the basis of interviews with cancer patients, nurses, and literature review. A pilot test and a pretest were conducted to clarify the subscale and extract question items. The scale comprised 57 items. Subjects were receiving inpatient or outpatient medication treatment in hospitals in western Japan.

Self-administered questionnaires were collected by mail. SPSS ver14 was used to analyze data.

Questionnaires were distributed to subjects in 20 hospitals. A total of 257 questionnaires were returned (recovery rate: 57.4 "), of which 248 were usable (96.4%).

Reliability coefficient was calculated from scale and subscale scores; internal consistency was examined by Cronbach's ƒ¿. The reliability coefficient (Cronbach fs ƒ¿ for this scale was 0.93.

A questionnaire for assessing the self-care agency of late middle-aged patients with chronic diseases (revised version of SCAQ) was used as an external criterion. The correlation between SCAQ and the present scale was medium (r = .52, p < .001); the validity of this scale was confirmed.

Construct validity was evaluated using hypothesis testing. Weak correlation was found between the scores of the gself-efficacy scale for cancer patients h and scores of the present scale (r = .21, p < .05); the hypothesis was verified.

Factor analyses identified 10 constructs, and factor validity was confirmed.The reliability and validity of the scale were verified, but further refinement is needed to enable use of this scale in a clinical setting.

Funding Source: Japan Society for the Promotion of Science

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SLEEP DISTURBANCES IN LUNG CANCER: STATE OF THE SCIENCE.

Grace Dean, RN, PhD, University at Buffalo, School of Nursing, Buffalo, NY; and Suzanne Dickerson, RN, DNS, University at Buffalo, Buffalo, NY

Increasing interest has been focused on sleep disruption and resulting fatigue in cancer patients. Much of this research has been conducted on patients with breast cancer. However, patients with lung cancer, the second leading cause of cancer and the leading cause of cancer deaths in the US, have received little attention.

The purpose of this study was to examine evidence-based research on sleep disturbances as a primary outcome variable in patients with lung cancer. Studies assessing sleep disturbances using quantitative and/or qualitative methods were reviewed.

This study is based on the Two Process Model of Sleep Regulation and identified factors that may interfere with sleep-wake regulation in patients with cancer.

A multi-step approach was followed for this review. A search was conducted of the MEDLINE, CINAHL and PSYCH-INFO electronic databases for publications related to the topic. Only articles published in the English within the past 15 years, 1/1993 through 3/2008, in peer-reviewed journals were considered. An initial search was performed using the keywords "sleep disorders" and "lung neoplasms." A total of 54 titles were identified using this approach. Abstracts or full citations were retrieved and reviewed by at least two authors to determine if they met criteria for inclusion. All articles meeting the inclusion criteria as described were then audited and summarized in evidence tables. The evidence tables include the following information: an overview of the research methods (sampling, setting, design, level of analysis), variables studied, and the significant key findings reported. The studies are organized in the tables by year and then alphabetically. Each study was discussed and then a critical analysis of the body of evidenced was provided.

Results of this systematic review revealed that sleep is frequently disrupted in patients with lung cancer. For example, between 32% and 52% of lung cancer patients reported sleep disturbances, a rate that is significantly higher than the general population (15-20%). Additional results will be provided and used to plan for critically needed theory-based intervention studies to reduce sleep disturbances and improve quality of life in this cancer population.

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FEASIBILITY AND EVALUATION OF A PATIENT-CONTROLLED COGNITIVE-BEHAVIORAL INTERVENTION FOR THE PAIN, FATIGUE, SLEEP DISTURBANCE SYMPTOM CLUSTER.

Kristine Kwekkeboom, PhD, RN, University of Wisconsin-Madison School of Nursing, Madison, WI

Approximately 40-80% of cancer patients experience concurrent pain, fatigue, and sleep disturbance. Cognitive-behavioral (CB) strategies have shown beneficial effects on these symptoms individually, but have not been tested in the full symptom cluster.

To assess the feasibility of a patient-controlled cognitive-behavioral (PC-CB) intervention using an MP3 player to deliver CB strategies for co-occurring pain, fatigue, and sleep disturbance during cancer treatment. This patient-centered approach allows individuals to self-select preferred CB strategies and use them at whatever time and place the symptoms occur.

Cognitive-behavioral theory and principles of patient-centered care guided this study.

A one group, pretest-posttest design was used. Patients receiving treatment for advanced cancer, experiencing at least 2 of the 3 clustered symptoms were recruited. Participants received one-on-one PC-CB intervention training and instructions to keep a log of each use. They then took the MP3 player home and used it to manage symptoms for a 2-week period. Standard, reliable, and valid measures of pain, fatigue, and sleep disturbance were completed at baseline and 2-weeks. A study evaluation was also completed at 2 weeks. Feasibility (recruitment, retention) and evaluation data are reported here.

Forty-six patients met eligibility criteria and 30 (65%) agreed to participate. Three dropped because of illness (n=2) or frustration with the MP3 player (n=1). Participants used CB recordings an average of 12 times during the 2-week period. Of the 27 participants who completed study, most reported that they enjoyed the intervention (n = 23, 85%) and learned useful skills (n = 25, 93%). Some patients encountered problems with the MP3 player (n = 11, 41%), but few had difficulty with study procedures. Twenty-three participants (85%) perceived improvement in their symptoms as a result of using the CB strategies. Individual responses to specific CB strategies varied and will be described with respect to symptom ratings and comments from participants' logs. Research is underway using a randomized controlled design to test the efficacy of the PC-CB intervention on the full symptom cluster and to identify individual difference variables that moderate treatment effects.

Funding Sources: Center for Patient-Centered Interventions P20 NR008987, PI: Sandra Ward, UW-Madison School of Nursing and the University of Wisconsin-Madison Graduate School.

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THE RELATIONSHIP OF CHEMOTHERAPY-INDUCED NAUSEA (CIN) TO THE FREQUENCY OF P6 DIGITAL ACUPRESSURE.

Jiyeon Lee, RN, PhD, University of California, San Francisco, San Francisco, CA; Suzanne Dibble, RN, DNSc, University of California, San Francisco, San Francisco, CA; Marylin Dodd, RN, PhD, University of California, San Francisco, San Francisco, CA; Donald Abrams, MD, University of California, San Francisco, San Francisco, CA; and Beverly Burns, LAc, MS, University of California, San Francisco, San Francisco, CA

CIN is known as the most distressing side effect of chemotherapy.

The effect of P6 digital acupressure has been supported through research, however, it has been unknown how frequently patients applied acupressure to control CIN and whether their experience of CIN had any relationship with the frequency of acupressure.

This study is aimed to explore the experience of CIN in relation to the frequency of P6 digital acupressure.

The theoretical framework for this study is the UCSF Symptom Management Model.

This secondary data analysis included 53 breast cancer patients who received moderate to highly emetogenic chemotherapy and applied P6 digital acupressure as an adjuvant intervention for CIN control from a multi-center, longitudinal, randomized clinical trial. A daily log was used to record CIN and the frequency of

acupressure for 11 days after the administration of chemotherapy. A hierarchical generalized linear modeling procedure was used to analyze the data.

The mean nausea intensity was 2.99 (SD=2.83, range 0-10) and the average acupressure use was two times per day (SD=1.84, range 0-10). Nausea intensity was increased by 0.25 points each day from day 1 to 3 (peaked on day 3) (IRR=1.25, p<0.01), and was decreased by 0.37 points each day from day 4 to 11 (after the peak), while holding other variables in the model constant (IRR=0.63, p<0.01). In general, participants with more intense nausea used acupressure more frequently. Those women who used acupressure more frequently on day 4 were the ones who had a 0.52 point higher nausea intensity than those who used acupressure less frequently in the day 1, while holding other variables in the model constant (IRR=1.52, p<0.01). The initial difference in nausea intensity in day 1 continued throughout 11 days after chemotherapy.

The importance of initial control of CIN in day 1 was further emphasized as the initial difference in nausea intensity continued throughout 11 days after chemotherapy.

Funding Sources: University of California, San Francisco, Graduate Student Research Award and University of California, San Francisco, School of Nursing, Century Club Award

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BARRIERS TO PAIN AND FATIGUE MANAGEMENT IN MEDICAL ONCOLOGY.

Betty Ferrell, PhD, FAAN, City of Hope, Duarte, CA; Tami Borneman, RN, MSN, CNS, City of Hope, Duarte, CA; Marianna Koczywas, MD, City of Hope, Duarte, CA; Barbara Piper, DNSc, RN, AOCN®, FAAN, University of Arizona, Scottsdale, AZ; and Virginia Sun, MSN, NP, City of Hope, Duarte, CA

The relief of symptoms is a critical aspect of supportive care in medical oncology.

This NCI funded study compared usual care to an educational and systems change intervention in a Comprehensive Cancer Center. This paper presents data comparing the total N=184 patients including Breast (40%), Lung (25%), Colon (20%) or Prostate (15%) cancer.

Based on the NCCN Pain and Fatigue guidelines, the intervention included a four part patient education program, professional education and strategies to integrate symptom management into routine oncology practice.

This trial compared symptom management in outpatient oncology patients experiencing pain and/or fatigue who received either usual care (N=83) or the intervention (N=101). Outcome measures included the Pain and Fatigue Knowledge Scales, Psychological Distress Thermometer, City of Hope QOL Tool, Karnofsky Scale and Piper Fatigue Scale. Patients were assessed at baseline and 1 and 3 months post intervention endpoints.

To determine the immediate effect of the intervention and differences from the usual care condition, 2x2 repeated measures ANOVAs were conducted on instrument scales and single item measures. Post hoc analyses controlled for inflation of error using the lsd procedure. Compared to the usual care sample, the intervention had an immediate salutary effect on anxiety, depression, and social support (p=.007, p=.006, and p=.048, respectively). Barriers to pain management decreased significantly only for the intervention sample. Knowledge of pain decreased in the usual care sample but increased significantly in the intervention sample (p<.001). Fatigue decreased significantly in the intervention sample (p=.006 to p<.001) and often increased in the usual care sample. Knowledge of fatigue also increased significantly for the intervention sample (p<.001), while falling in the usual care sample.

Structured patient and professional education and systems change efforts can reduce barriers to pain and fatigue management resulting in improved outcomes for patients in treatment for solid tumors.

Funding Source: National Cancer Institute

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SYMPTOM CLUSTERS IN HIGH-DOSE CHEMOTHERAPY.

June Eilers, PhD, APRN, CNS, BC, Nebraska Medical Center, Omaha, NE; Rita Million, BSN, RN, Student, UNMC College of Nursing, Omaha, NE; Debra Richey, MSN, RN, Nebraska Medical Center, Omaha, NE; and Sangeeta Agrawal, MS, UNMC College of Nursing, Omaha, NE

Although clinicians must deal with multiple, rather than individual symptoms, historically research has focused primarily on individual symptoms. More recently research has evolved to investigate concurrent symptoms to identify symptom clusters and advance the science of symptom management.

The purpose of this study was to explore pain, mucositis, nausea, and vomiting known to occur concurrently in the acute phase of high-dose therapy to determine the existence of symptom clusters.

The Theory of Unpleasant Symptoms which proposes that symptoms co-occur and don't exist in isolation guided this study.

The setting for this retrospective closed chart review of 120 patients undergoing high-dose chemotherapy over a twelve month period was a large Midwestern medical center. Approximately 60 % of the subjects (M age = 51) were male, the majority were Caucasian and had autologous transplants. Mucositis was documented as measured by clinicians using the Oral Assessment Guide (OAG). Pain was documented self-report scores (0 – 10), nausea and vomiting were measured by presence/absence as documented in narrative charting. The treatment trajectory was subdivided into weeks to facilitate data management. This report focuses on week two (days 1–7 after transplant). Scree plot supported the presence of three or four clusters. SPSS cluster analysis was used to accomplish the primary purpose of this study. The presence of gastrointestinal pain was used as the criterion for inclusion in the cluster analysis.

Analysis indicated support for the four cluster model and allowed the identification of the four symptoms in each cluster by high, mid, and low intensity, with subjects dispersed across the four clusters and no cluster representing the majority of the subjects. There were no significant differences in mean age, height, weight or body surface area variables for the individual clusters of subjects. This work advances our understanding of pain, mucositis, nausea, and vomiting as a cluster in the high-dose therapy patient with implications for research to determine if these patterns change over time and if they share a chemical trigger. Clinicians can use these findings to enhance their understanding of the need to focus on symptom clusters for the individuals involved to improve patient outcomes.

Funding Source: Partial funding provided by the American Society of Pain Management Nursing

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ATTITUDINAL BARRIERS TO CANCER PAIN MANAGEMENT IN EUROPE.

Sigridur Gunnarsdottir, RN, PhD, University of Iceland, Faculty of Nursing and Landspitali University Hospital, Reykjavik, Iceland; and Valgerdur Sigurdardottir, MD, Landspitali University Hospital, Reykjavik Iceland, EPOS study group

Pain management remains a challenge in cancer care. Attitudinal barriers (e.g. fear of addiction, concerns about tolerance and side effects) have been found to negatively affect the quality of pain management and in turn quality of life (qol) in cancer patients.

Patient attitudes towards pain management are a challenging topic for patient education. While a body of evidence already exists on attitudinal barriers, it is important to continue examining such attitudes and their cultural nature in an international context. The purpose of this study is to examine attitudinal barriers to cancer pain management in an international sample of patients with advanced cancer.

The study is based on a model developed by Ward and colleagues that proposes that attitudinal barriers to pain management negatively affect patients' coping efforts (utilization of available analgesics) and consequently patients' qol.

This is a descriptive, correlational study. Participants are roughly 1000 patients, 18 years and older with advanced cancer receiving care in multiple treatment centers in Europe. Data was collected by research personnel who administered paper and pencil questionnaires. Attitudinal barriers were evaluated with the Barriers Questionnaire-II, pain was evaluated with the Brief Pain Inventory, and QOL with the EORTC QLQ-C30, all widely used, valid and reliable questionnaires. Descriptive statistics will be used to describe attitudinal barriers, in the whole sample as well as for samples from individual countries. Inferential statistics will be used to compare attitudinal barriers between countries and to examine the relationship between barriers, pain, pain management and background information such as age, gender, education and disease variables.

Data collection has just been completed and data is being prepared for analysis. Hopefully the results will aid in further studies on patient education interventions to improve pain management in clinical practice.

Funding Sources: Landspitali University Hospital, University of Iceland, The Icelandic Nurses Association, the Icelandic Cancer Society

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RELIABILITY OF THE PITTSBURGH SLEEP QUALITY INDEX IN AFRICAN AMERICAN BREAST CANCER SURVIVORS.

Julie Otte, PhD, RN, OCN®, Indiana University School of Nursing, Indianapolis, IN; Janet S. Carpenter, PhD, RN, Indiana University School of Nursing, Indianapolis, IN; Kathleen M. Russell, DNS, RN, Indiana University School of Nursing, Indianapolis, IN; and Victoria L. Champion, DNS, RN, FAAN, Indiana University School of Nursing, Indianapolis, IN

Breast cancer is one of the most commonly occurring cancers in women and affects all races. Out of the estimated 9.8 million cancer survivors, breast cancer represents 22%. Current evidence suggests that 48-90% of BCS suffer from poor sleep. Researchers have found that African American (AA)-BCS are at higher risk for poor sleep quality based on the Pittsburgh Sleep Quality Index (PSQI) questionnaire when compared to Caucasian BCS (OR=3.14).

Although the PSQI has been validated in various cancer populations, its psychometrics have not been examined among AA-BCS. Therefore, the purpose of this analysis was to perform a reliability assessment of the PSQI in AA-BCS.

The Psychobiological Model of Sleep Disturbances in Breast Cancer Survivors was the theoretical model for this analysis.

Analysis of cross-sectional data included descriptive and frequency statistics describing sample characteristics and global sleep scores on the PSQI. Internal consistency reliability and component-total score correlations were completed.

The sample consisted of 50 AA-BCS who were a mean age of 53 years old (SD=7.8), employed (46%), married or partnered (26%), postmenopausal (82%), with a high school education (24%) or less, and with at least one concurrent medical problem (98%). Women were not taking endocrine therapy (81%), had completed surgery and chemotherapy (56%), were having hot flashes (66%) and were a mean of 5.5 years (SD=2.6) post-diagnosis.

Results showed that 90% of AA-BCS scored at or above the cut-off for poor sleep (> 5) with mean global scores of 9.8 (SD=4.0, range=0 to 18). Internal consistency reliability using the seven component scores was low (á=0.67) with little improvement when any given component score was deleted (á =0.55-0.71). Correlations between each component score and the total score ranged from 0.51 to 0.77.

Internal consistency reliability for the PSQI among AA-BCS was inadequate and lower than in previous studies of BCS (.80) and non-cancer populations (.83). Component to total correlations were also lower than in previous studies of BCS (0.55-0.79). Findings suggest the PSQI may not be an adequate measure sleep quality in this population.

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POST BREAST CANCER LYMPHEDEMA OCCURENCE: POST-OP SWELLING AND HEIGHT MAY BE ASSOCIATED RISK FACTORS.

Wannapa Kay Mahamaneerat, PhD, University of Missouri, Columbia, MO; Jane M. Armer, PhD, RN, University of Missouri, Columbia, MO; and Bob R. Stewart, EdD, University of Missouri, Columbia, MO

The risk of lymphedema occurrence following breast cancer treatment is higher due to two risk factors: post-op swelling and height. The participants who experienced post-op swelling (37 of 193, 19.2%) has 40% higher risk of developing lymphedema than those who did not have post-op swelling. In a height categorical analysis (< 65 and > 65 inches), the risk of developing lymphedema is significantly different between these two groups (p= 0.014).

The purpose of this research was to examine possible risk factors for development of post-breast cancer lymphedema.

A database management and statistical testing techniques were used to analyze the data.

Data from a secondary dataset of 202 breast cancer survivors followed from after-diagnosis and before-surgery through the 30 months following surgery were analyzed using database manipulation and other appropriate statistical techniques. Occurrence of lymphedema was calculated by first comparing volume at each of 8 post-op time points (starting from 1~4 weeks to 30 months post-surgery) to pre-op limb volume on the unilateral cancer-affected limb. Post-op volume estimated at 1~4 weeks after surgery was similarly compared to pre-op volume for post-op swelling. Limb volume estimations were calculated using 4 cm circumference measurements in a derived cylinder formula. Both analyses applied the 5% BMI-adjusted limb volume change (LVC) criterion ¨C a change of 5% or greater in affected-arm volume over percent change in BMI.

Based on this preliminary analysis with the 5% BMI-adjusted LVC criterion, compared to those who did not have post-op swelling, breast cancer survivors who experienced post-op swelling had a 40% higher risk for developing lymphedema at some later time through 30 months post-surgery. In a test of statistical significance, the participants whose height is less than or equal to 65 inches has higher risk than the taller participants (p = 0.014).

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GENE EXPRESSION METHODS TO STUDY METHOTREXATE-INDUCED CNS TOXICITY.

Ida Moore, RN, DNS, FAAN, University of Arizona College of Nursing, Tucson, AZ; Carrie Merkle, RN, PhD, FAAN, College of Nursing, University of Arizona, Tucson, AZ; Amy Vidrine, College of Nursing, University of Arizona, Tucson, AZ; and David Montgomery, PhD, University of Arizona and Southern VA HealthCare System, Tucson, AZ

Acute lymphoblastic leukemia (ALL) is the most common pediatric cancer in the United States. The central nervous system (CNS) is a sanctuary site for leukemia cells, therefore, CNS treatment is essential for maintaining disease remission. Almost all CNS treatment regimens use intrathecal and intermediate- or high-dose intravenous methotrexate. Toxicity associated with CNS treatment is a significant problem for the increasing number of cancer survivors

because of the devastating effects on school performance, employment opportunities, and quality of life outcomes.

The purpose was to investigate gene expression changes following CNS treatment with methotrexate. Gene expression and signaling pathways involved in cell activation, oxidative stress, and apoptosis were studied. Specific aims were to: 1) develop a rat model for isolating RNA from brain endothelial cells; and 2) investigate differences in gene expression in brain endothelial cells after methotrexate treatment.

The scientific framework was based on methotrexate-induced oxidative stress in the CNS and the effects of oxidative stress on inflammation and apoptosis.

An experimental design was used. Fischer 344 male rats, 3-4 weeks of age, were used to develop the method for RNA isolation from vascular endothelial cells. For gene expression studies, experimental animals were treated with methotrexate (1gm/M2) and controls were treated with saline. The Rat Endothelial Cell Biology RT2 ProfilerTM PCR Array was used to measure genes related to endothelial cell activation (adhesion molecules, cytokine activity, and vascular endothelial growth factor [VEGF]) and endothelial cell injury (caspase activation, induction of apoptosis, and oxidative stress). Real-time polymerase chain reaction (RT-PCR) was used to analyze gene expression changes following methotrexate treatment compared to controls. Internal control genes (house keeping genes) were used to normalize PCRs for amount of RNA added to the reverse transcription reactions. Gene expression data were analyzed by relative quantitation which relates the PCR signal of the target transcript in a treatment group to that of the control group. Differences between experimental and control groups were examined using descriptive and non-parametric statistics.

The animal model is feasible for studying methotrexate-induced gene expression changes in the CNS. Endothelial cells have been successfully harvested from brain samples. Gene expression studies are currently in process.

Funding Source: ONS Foundation Senior Fellowship Award

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WORST, LEAST, AND AVERAGE PAIN SEVERITY SCORES: VARIABILITY AND RESPONSE TO A SYMPTOM MANAGEMENT INTERVENTON.

Elizabeth Byma, MSN, RN, Michigan State University, East Lansing, MI; Barbara Given, PhD, RN, FAAN, Michigan State University College of Nursing, East Lansing, MI; Charles Given, PhD, Michigan State University, East Lansing, MI; and Mei You, MS, Michigan State University, College of Nursing, East Lansing, MI

Most research utilizes single measures of pain severity to document the presence of pain as well as to determine intervention effectiveness. Little research has examined other measures of pain severity (worst, least, and average), variability in pain, relationship of these measures to current pain and interference, as well as changes in these measures due to nursing interventions.

The purpose of this analysis is to explore the levels and variability of worst, least and average measures of pain severity and their relationship to current pain severity and pain interference. Additionally, we will examine the effect of a cognitive-behavioral intervention on the levels and variability of these other measures of pain severity. Research questions to be addressed include: 1) What are the patient-reported pain severity scores for the previous 7 days (worst, average, least)? 2) How do these measures relate to current pain severity levels? 3) What is the variability between worst and least pain severity scores? 4) What is the relationship between variability and pain interference levels? 5) At baseline, how do those receiving treatment or medications for pain and relief differ in pain severity scores and variability in severity from those either not receiving treatment or medication for pain or not receiving relief from treatments or medications given for pain? 6) What is the difference between intervention groups in changes of worst, least, average pain severity and variability from baseline to 10 weeks and 16 weeks?

Dodd et al's Symptom Management Model will be the guiding framework for this research.

A secondary analysis of data from two large randomized clinical trials will be performed. The sample will include 534 cancer patients with solid tumors (breast, lung, colon, and non-Hodgkin's lymphoma) who were undergoing chemotherapy and receiving a 6-contact, 8-week intervention for symptom management. Various descriptive and inferential statistical methods will be utilized to answer the above research questions.

Results will assist in understanding the patient's experience of pain and response to interventions in a more holistic manner by taking into consideration the variability of pain.

Funding Sources: Walther Cancer Institute, Behavioral Cooperative Oncology Group. The data from this secondary analysis came from the following RO-1 funded RCTs: Family Home Care for Cancer: A Community-Based Model, RO-1 CA79280, Principal Investigator: Dr. Barbara Given

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SYMPTOM CLUSTERS IN CHILDREN AND ADOLESCENTS WITH CANCER.

Marilyn Hockenberry, PhD, RN, CS, PNP, FAAN, Baylor College of Medicine, Houston, TX; Mary C. Hooke, RN, CPON®, Children's Hospitals and Clinics of Minnesota, Minneapolis, MN; Kathy McCarthy, BSN, RN, CPON®, Baylor College of Medicine, Houston, TX; Mary-Ann Gregurich, PhD, Texas Children's Hospital, Houston, TX; and Gennaro Sambuco, Baylor College of Medicine, Houston, TX

Previous research examining fatigue in children and adolescents with cancer provides a foundation to continue exploration of the synergistic adverse-effects that may occur with other symptoms.

The purpose of this study is to examine the symptom cluster of fatigue, nausea and vomiting, and sleep disturbances experienced by children and adolescents receiving doxorubicin, cisplatin, or ifosfamide chemotherapy and the influence of this symptom cluster on performance status, mood, and behavior. A secondary aim of this study examined a new measure associated with fatigue and cancer, carnitine plasma levels, before and after chemotherapy.

Sixty-seven patients with cancer were enrolled; 38 (56.7%) males and 29 females (43.3%) with a mean age of 12.3 years (range: 7-18 yrs). All patients were within 25 weeks of diagnosis (mean 6 weeks). Standardized instruments were administered to assess symptoms pre-chemotherapy cycle, during chemotherapy, and one week after. Sleep was measured by wrist actigraphy. Performance status, mood, and behavior were measured pre-chemotherapy and one week later.

In children ages 12 and younger, higher fatigue scores ($p < 0.001$) increased depressive symptoms. Parents' rating of their child/adolescent's fatigue ($p < 0.001$) and sleep disturbance experienced by the child/adolescent ($p = 0.004$) were related to increased depressive symptoms. Emotional and behavioral difficulties in adolescents were influenced by fatigue ($p = 0.033$) and sleep disturbance ($p = 0.007$). For children 7-12 years of age, higher fatigue scores ($p < 0.001$) negatively influenced behaviors and emotions. Parent ratings of their child/adolescent's fatigue ($p = 0.033$) and sleep disturbance ($p = 0.018$) experienced by the child/adolescent were also associated with negative behaviors and emotions.

Nausea and vomiting were not significant variables in any of the cluster analyses. None of the symptoms influenced performance status. In this study, free carnitine levels increased significantly from pre-chemotherapy levels ($p = 0.009$).

Fatigue and sleep disturbances had significant effects on increased depressive symptoms and behaviors and emotions one week following chemotherapy. Further research is needed to evaluate long-term effects of fatigue and sleep disturbances during childhood cancer treatment. The role of carnitine as a physiologic marker of fatigue warrants further research in children.

Funding Source: ONS Foundation

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PATIENT-CENTERED SYMPTOM CLUSTER SUBGROUP MEMBERSHIP IN PATIENTS RECEIVING BIOLOGICAL THERAPIES USING LATENT TRANSITION ANALYSIS. Maria Cho, RN, PhD, University of California, San Francisco, San Francisco, CA; Marylin Dodd, RN, PhD, FAAN, University of California, San Francisco, San Francisco, CA; Bruce A. Cooper, PhD, University of California, San Francisco, San Francisco, CA; Judy Petersen, RN, MN, AOCN®, Nexcura, Inc., Seattle, WA; and Christine Miaskowski, RN, PhD, FAAN, University of California San Francisco, San Francisco, CA

Increasing body of literature of cancer and treatment related symptom cluster, and its negative impact on quality of life.

No study has reported patient-centered symptom clusters and their quality of life in patients receiving biotherapy over time. The purpose of this study is to identify subgroups (classes) of patients who experienced symptom clusters while receiving biological therapies, to examine subgroup membership stability and change from T1 (at first dose of biologic therapy) to T2 (a month later), and to compare the subgroups on quality of life.

Descriptive, Prospective, Cohort Study Design was used in an Internet Online Survey. At T1, 188 patients with various types of cancer received biotherapies, mean age 52 years (SD=10.56), 83% women. 100% at least high school education, 76% were married, 54% worked full or part time, and 93% were Caucasian. At T2, 114 subjects returned to the online survey, and the demographic characteristics for this group were similar. Piper Fatigue Scale, General Sleep Disturbance Scale, CES-Depression, a numeric rating scale of worst pain intensity, and QOL-CA were used. Internal consistency of all instruments ranged from .87 to .97. Latent transition analysis was used for determining group membership changes from T1 to T2.

Two classes at T1 and three classes at T2 were identified. Latent transition matrix (2x3) of T1 and T2 yielded six subgroups. Fifty two patients (27.8%) experienced low pain and fatigue; 36 (19.3%) experienced moderate pain and fatigue, and high sleep disturbance; 11 (5.9%) experienced mild pain, moderate fatigue, sleep disturbance and depression; 38 (20.3%) reported mild pain, moderate fatigue, sleep disturbance, and reported an increase from low to moderate pain from T1 to T2; 29 (15.5%) reported mild pain and fatigue, and sleep disturbance; and finally, 21 (11.2%) were high on all symptoms at both T1 and T2. All four symptoms subgroups showed the lowest QOL scores (mean=4.1, SD=1.2, $p<.001$) than compared to any other subgroups without depression.

Patients receiving biological therapy reported the similar or even higher symptom scores than patients receiving chemotherapy +/_ radiation therapy. Subgroups of patients who had all four symptoms need to assess their symptoms and intervene to improve QOL over time.

Funding Source: ONS Foundation

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