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PODIUM ABSTRACTS

RESEARCH

NEIGHBORHOOD DISADVANTAGE IS ASSOCIATED WITH POORER OBJECTIVE AND SELF-REPORTED PRE-THERAPY NEUROCOGNITIVE FUNCTION IN POSTMENOPAUSAL WOMEN WITH EARLY-STAGE BREAST CANCER

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Women with breast cancer (BC) commonly experience neurocognitive decline, partially attributable to disease and treatment factors. Compared to matched controls, up to 30% of women with BC experience poorer neurocognitive function prior to beginning therapy. The underlying mechanisms are unknown but important to elucidate given that poorer pretherapy cognitive function has been associated with poorer survival. Living in a disadvantaged neighborhood has been linked with a number of health outcomes, yet no studies to date have considered the role of neighborhood disadvantage in the context of cognitive function and BC. The purpose was to examine the relationship between neighborhood disadvantage and pre-therapy cognitive function in women with BC. In this secondary analysis of the Exercise Program in Cancer and Cognition study (EPICC; NCT02793921), a subsample of 100 women with early-stage, hormone-receptor positive BC were assessed prior to beginning adjuvant therapy. Objective cognitive function was measured using a comprehensive neuropsychological battery of computerized and paper-and-pencil tests. Perceived cognitive function was assessed using the Patient Assessment of Own Functioning (PAOFI), a 33-item self-report questionnaire, with higher scores indicating greater perceived cognitive problems. Neighborhood disadvantage was measured using the Area Deprivation Index (ADI), a US census-derived metric, to provide national percentile rankings for neighborhoods (range: 1 to 100, with higher percentiles indicating greater disadvantage). Data were analyzed using correlation and linear regression analyses, controlling for age, years of education, and depressive symptoms (Beck Depression Inventory II) as potential confounders. On average, women were 62.7 years of age with 15.9 years of education and mostly white (92.5%). We found living in a setting with more neighborhood deprivation was directly correlated with poorer cognitive function in the domains of verbal memory (r=-.215; p=.032), working memory (r=-.204; p=.043), mental flexibility (r=-.198; p=.049), processing speed (r=-.222; p=.026), and self-reported overall cognitive function (r=.203; p=.043). In regression models, the relationship between ADI and verbal memory was partially confounded by education (Beta=-1.87; p=.067); the relationships between ADI and 1) mental flexibility (Beta=-1.37; p=.175) and 2) PAOFI (Beta=.052; p=.532) were confounded by depressive symptoms. Neighborhood-level factors may be an important yet understudied contributing factor to poorer pre-therapy cognitive function in postmenopausal women with BC.

EMPOWERING LUNG CANCER SURVIVORS IN POST-TREATMENT SURVIVORSHIP CARE USING PARTICIPATORY ACTION RESEARCH

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The purpose was to explore the experiences of lung cancer survivors (LCS) and their informal and professional caregivers with post-treatment care and to empower them to implement action-based study findings. LCS represent a growing group of survivors with potential unidentified needs. Current research focuses on symptom management rather than holistic survivorship care although LCS seek information on healthy lifestyle behaviors, smoking cessation and social issues. Survivorship care innovation is needed to address care gaps. This study used a participatory action research (PAR) four-phase design. Phase one used a focused ethnography to explore the post-treatment care experiences of LCS and their caregivers; phase two utilized a core group of participants to decide an action that was implemented in phase three; and phase four evaluated the action for the completion of one PAR cycle. Participants were recruited using purposeful and snowball sampling from an NCI-designated cancer center in Northeastern US. The final

sample (n= 18) included 9 LCS, 2 informal caregivers, and 7 professional caregivers. The total sample mean age was 54 years and predominately female (n = 15). Findings: The focused ethnography revealed 28 categories, eight patterns, and three themes. Themes included the need for resources and education, advocacy and mentoring, and a focus on living versus surviving to promote well-being in LCS and caregivers. Themes were shared and confirmed with participants and resulted in the creation of two flyers about resources and advocacy (the action). The advocacy flyer content was fully supplied by the participants. The resource flyer included survivorship services available at the institution. Multiple forms of access were included on the flyers (QR codes, phone, e-mail and web sites). Evaluation revealed agreement with themes and action by all participants. One area of dissent surrounded stigma relating to smoking status. Few examples of PAR design exist in oncology. Survivorship is a multi-stakeholder issue and participants agreed that gaining multiple perspectives is important to finding solutions. Resources, advocacy, and ability to share their stories reflect issues found in other studies. Oncology nurses can use PAR to empower survivors and their informal and professional caregivers in their post treatment care. Future PAR cycles should address other study-identified problems such as creating support groups and alleviating stigma for LCS and their caregivers.

TRAJECTORIES OF ANASTROZOLE ADHERENCE AND NEUROPSYCHOLOGICAL SYMPTOM BURDEN IN POSTMENOPAUSAL WOMEN WITH EARLY-STAGE BREAST CANCER 18-MONTHS POST-INITIATION OF AROMATASE INHIBITOR THERAPY

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Suboptimal adherence to aromatase inhibitor (AI) therapy prescribed for post-menopausal women with hormone receptor-positive breast cancer (HR+BC) is well-documented and has been associated with symptoms. However, little is known about the adherence-symptom relationship and how it changes temporally. In postmenopausal women with HR+BC, we sought to identify trajectories of anastrozole adherence for the first 18-months of therapy, ascertain trajectory group membership risk factors, and examine associations of adherence and neuropsychological symptom burden (NSB) in a dual trajectory analysis. Women with continuous electronic adherence (MEMS®) data collected from a prospective cohort study of postmenopausal women prescribed anastrozole for HR+BC were included. Suboptimal adherence rates were <80%. Monthly adherence rates (anastrozole initiation through 18-months post-initiation) were calculated, then analyzed using group-based trajectory modeling (GBTM) with phenotypic risk factors. Associations between NSB score (self-reported depressive, anxiety, cognitive, and fatigue symptoms) trajectories and adherence trajectories were examined with dual GBTM. Participants (N=291) averaged 61 years old and were well-educated, predominantly white (97%), and married or living with a partner (68%). Most women were diagnosed with stage 1 HR+BC (65.6%), some received chemotherapy (30.6%), and the average number of medications at baseline (pre-anastrozole) was 6.1 (range 0-16). Adherence rates ranged from 0% to 100%. Average monthly adherence was 86.96% ± 27.62 in the first month, decreasing to 77.28 ± 36.85 at 18-months. Five distinct adherence trajectories were identified— low, very low, high/sharp decrease, high/slow decrease, and persistently high. By five months post-initiation, adherence dropped at or below 80% for all (36.7%) but the persistently high group. Three NSB trajectories were identified—low/stable, moderate/stable, and moderate/increasing. Certain baseline medication categories were risk factors for groups with greater adherence (thyroid supplement, anti-depressant) and higher NSB (anti-depressant, calcium/Vitamin D supplement, narcotic analgesic). Dual trajectories showed the greatest probability (0.736) for the persistently high adherence group given low/stable NSB with similar results for low/stable NSB given persistently high adherence. The joint probability for persistently high adherence and low/stable NSB was 0.424. One-third of women struggled with suboptimal adherence shortly after therapy initiation and may benefit from adherence interventions before/shortly after therapy begins. Results for this sample suggest that the relationship between NSB and adherence may be bidirectional and that persistently high anastrozole adherence does not necessarily increase NSB. Future research should examine symptom-adherence trajectories in other symptom types.

A QUALITATIVE DATA ANALYSIS OF AUTOLOGOUS AND ALLOGENEIC TRANSPLANT PATIENTS' CORE VALUES AND CARE PREFERENCES

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Hematopoietic stem cell transplant is associated with curative potential but also relatively high morbidity and mortality, and patients often have a high symptom burden post-transplant. Despite this, palliative care is not often integrated into the care of transplant patients. Evidence suggests transplant patients may benefit from palliative interventions concurrent with transplant care. Our goal was to integrate early and ongoing discussions of patient's core values and care preferences with their care team by piloting a nurse-led primary palliative care intervention. By eliciting patients' values, the goal is to deliver person-centered care that is aligned with what matters most to patients. In collaboration with supportive/palliative care specialists, we designed and implemented early, standardized discussions regarding patients' values and care preferences. All English- speaking patients, in 2 Bone Marrow Transplant (BMT) physicians' clinics, undergoing autologous and allogeneic transplant were eligible. Patients discussed their core values and care preferences with a member of their transplant team (Figure 1), pre-transplant, peri-transplant (day 10-14), Day 30, Day 100, 6mo, and 1 year post-transplant. Discussions were conducted in-person, via telemedicine, and by phone and were transcribed. Analysis by an interdisciplinary team using a thematic content analysis is ongoing, including values discussion data over time. This analysis includes the pre-transplant discussions only. 29 patients, 69% male, 69% white, with plasma cell and myeloid diseases participated in the discussions (Figure 2). Descriptive analysis of the primary themes is reported (Figure 3) with emerging themes of importance of family/friends, information preferences, trust in care team, coping, loss, spirituality, normalcy, finding meaning, dignity, perceived burden on family, positionality, independence, and care preference discussion, that have been identified (Figure 4). We successfully incorporated patients' values and care preference discussions into routine transplant care. The discussions allow patients to reflect on, clarify and communicate what is most important to them with their care team. The discussions also provide clinicians with critical information that informs person-centered care. Qualitative analysis is ongoing to determine similarities and differences in values and care preferences between the allogeneic and autologous transplant populations, as well as trends over time.

DIFFERENTIALLY EXPRESSED GENES AND PATHWAYS RELATED TO PSYCHONEUROLOGICAL SYMPTOMS IN PATIENTS WITH HEAD AND NECK CANCER UNDERGOING RADIOTHERAPY

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Patients with head and neck cancer (HNC) experience psychoneurological symptoms (PNS, i.e., fatigue, depression, sleep disturbance, pain, and cognitive dysfunction) during and years after intensity-modulated radiotherapy (IMRT) that negatively impact their functional status, survival rates, and quality of life. The underlying mechanisms for PNS are still not fully understood. The purpose of this study was to examine differentially expressed genes and pathways related to PNS for patients with HNC across four time points undergoing IMRT (i.e., prior to IMRT, end of IMRT, 6 months post IMRT, and 12 months post IMRT). Participants included 142 HNC patients (mean age 58.9±10.3 years, 72.5% male, 83.1% non-Hispanic White). Total RNA extracted from blood leukocytes were used for genome-wide gene expression assays (Applied Biosystems Clariom S). Linear mixed effects model was used to examine the association between PNS and gene expression changes across time. Gene Ontology (GO) enrichment analysis was employed to identify pathways related to PNS. A total of 1,462 genes were significantly associated with PNS (false discovery rate (FDR) < .05) after controlling for age, body mass index, race, education, human papillomavirus status, surgery, chemotherapy, and stress level across four time points. 172 upregulated genes and 1,290 downregulated genes were significantly associated with PNS (all p-value < .05 and FDR < .05). Genes involved in immune/inflammation were among the

most highly upregulated and downregulated: CCR7, FCRL3, FCMR, MS4A1, TCL1A, CD22, BTLA, GPR183, SLAMF6, and CD79B. A total of 336 GO biological process terms were identified among the genes significantly associated with PNS (classic Fisher p-value < .01). The top 20 GO biological process terms included immune/inflammation and aging process (telomere). This study is the first to identify gene expression profiles and pathways that might be involved in mechanisms underlying PNS for patients with HNC receiving IMRT. Given most prior studies used cross-sectional designs, our longitudinal data help us understand the associations between genes/pathways and PNS across time. Immune response-regulating signaling pathways and aging processes (e.g., positive regulation of telomere RNA) might play crucial roles in PNS manifestation and development. Findings from our study suggest that inflammation and aging markers are candidate biomarkers for PNS and reducing inflammation and decelerating aging could benefit symptom management to decrease symptom burden for patients during their treatment and survivorship.

POSTER ABSTRACTS

INDUSTRY-SUPPORTED

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STRATEGIES FOR COLLABORATIVE MANAGEMENT OF OCULAR ADVERSE EVENTS OF ELAHERE™ (MIRVETUXIMAB SORAVTANSINE) IN PATIENTS WITH FOLATE RECEPTOR ALPHA (FRα)-POSITIVE RECURRENT OVARIAN CANCER

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Antibody-drug conjugate (ADC) therapies are associated with differentiated toxicity profiles. Mirvetuximab soravtansine (MIRV) is a folate receptor alpha (FRα)-directed antibody and microtubule inhibitor conjugate indicated for the treatment of adult patients (pts) with FRα positive, platinum-resistant epithelial ovarian, fallopian tube, or primary peritoneal cancer, who have received 1-3 prior systemic treatment regimens. The purpose of this study was to characterize the ocular safety profile of single-agent MIRV in pts with FRα-positive recurrent ovarian cancer and to review strategies for collaborative management of ocular adverse events (OAEs) with eye care professionals (ECPs). MIRV is an ADC that has demonstrated significant anti-tumor activity in recurrent ovarian cancer. A retrospective pooled analysis included pts enrolled across three trials: phase I first-in-human, and phase 3 studies FORWARD I, and SORAYA. Analysis included 464 pts (median age 63 yrs) with FRα expressing recurrent ovarian cancer (FRα 25% PS2+). All pts received intravenous MIRV at 6 mg/kg, adjusted ideal body weight, on Day 1 of a 21-day cycle until disease progression or unacceptable toxicity. Ophthalmic examination was performed at baseline for all pts and ocular symptom assessment was performed before each cycle. All pts used prophylactic prednisolone acetate 1% and preservative-free artificial tears. OAEs and recommended management strategies, including ophthalmic examination schedule and MIRV dosing modification guidelines, are reported. OAEs regardless of relationship to treatment, occurred in 61% of pts. The most common (≥5%) were visual impairment (49%), keratopathy (36%), dry eye (26%), cataract (15%), photophobia (13%), and eye pain (12%). Dose reductions due to an AE occurred in 20% of pts. AEs which required dose reductions in ≥3% of patients included visual impairment (9%) and keratopathy (7%). For all pts with complete follow-up, corneal AEs resolved to grade 1 or 0; 90% of pts with blurred vision and 93% of pts with keratopathy had resolution to grade 1 or 0; follow-up data are incomplete and ongoing for the remaining 10% and 7%, respectively. No corneal ulcers or perforation have been reported; no OAE has been reported to have permanent sequelae. MIRV-associated OAEs are primarily characterized by changes to the corneal epithelium that manifested with blurred vision and microcystic keratopathy and resolved with medical care and, if needed, dose modification. The findings highlight the need for collaboration between oncology care teams and ECPs to tailor treatment for pts experiencing OAEs.

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MINIMAL RESIDUAL DISEASE NEGATIVITY AS A MEASURE OF RESPONSE TO CILTACABTAGENE AUTOLEUCEL IN PATIENTS WITH RELAPSED OR REFRACTORY MULTIPLE MYELOMA

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Minimal residual disease (MRD) negativity is an important predictor of long-term treatment outcomes in multiple myeloma. In CARTITUDE-1, treatment with the chimeric antigen receptor-T cell (CAR-T) therapy ciltacabtagene autoleucel (cilta-cel) resulted in MRD negativity in 92% of evaluable patients with relapsed/refractory multiple myeloma (RRMM). Although MRD negativity is generally associated with longer progression-free survival (PFS), the relationship between sustained MRD negativity and other efficacy outcomes in CARTITUDE-1 has not been established. We describe how MRD-negativity status was assessed in CARTITUDE-1 and report CARTITUDE-1 efficacy outcomes of patients with sustained MRD negativity. Patients (N=97) with RRMM and prior treatment with ≥3 lines of therapy, including a proteosome inhibitor, immunomodulatory drug, and anti-CD38 monoclonal antibody, received a single infusion of cilta-cel. Using next-generation sequencing (NGS), MRD negativity was assessed (Figure). Bone marrow aspirate was collected from patients at baseline to identify cells with gene mutations, known as myeloma clones, and then collected at day 28 and months 6, 12, 18, and 24 posttreatment to assess frequency of these clones. Calibration and quality-control testing were used to verify that samples had sufficient cells to detect MRD negativity, defined as <1 myeloma cell in 105 nucleated cells. Patients were characterized by length of MRD negativity (<6 months, 6-12 months, ≥12 months); patients with 2 MRD-negative results ≥6 months apart (before progression or subsequent treatment) were considered to have sustained MRD negativity. Duration of response (DOR) and PFS were compared between patients with versus without sustained MRD negativity. Of 61 patients whose samples passed calibration and quality-control standards for MRD evaluation via NGS, 56 (92%) achieved MRD negativity; sustained MRD negativity was observed for <6 months in 22 patients, 6 to 12 months in 10 patients, and ≥12 months in 24 patients. Patients with sustained MRD negativity had longer median (95% CI) DOR (6-12 months: NE [12.5 mo, NE]; ≥12 months: NE [NE, NE]) and PFS (6-12 months: NE [13.4 months, NE]; ≥12 months: NE [NE, NE]) compared with patients with sustained MRD negativity for <6 months (DOR: 10.3 months [5.1, 15.6]; PFS: 11.0 months [5.4, 16.6]). Discussion: Sustained MRD negativity was a meaningful measure of response in CARTITUDE-1 and was associated with favorable outcomes. Nurse practitioners should understand the importance of baseline sampling for MRD assessments and the significance of this outcome for clinical practice.

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INCREASING THE AWARENESS OF NURSES ON EVOLVING CELL THERAPIES

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The landscape of adoptive cell therapy is continuously evolving. T-cell receptor (TCR) T-cell therapies have shown encouraging results in adults with metastatic solid cancers. It is valuable for oncology nurses to remain current in their knowledge of upcoming treatments as these novel therapies may direct the future of nursing practice standard of care. This abstract presents data on two cell therapies being tested in clinical trials, afamitresgene autoleucel (afami-cel; formerly ADP-A2M4) and its next-generation counterpart ADP-A2M4CD8, to inform nurses on new promising therapies. Afami-cel consists of CD4+ and CD8+ T-cells that are genetically engineered to target tumors expressing the cancer testis antigen melanoma-associated antigen-A4 in the context of the appropriate human leukocyte antigen (HLA) expression (ie, HLA-A*02). ADP-A2M4CD8 is similar to afami-cel, except that a CD8α co-receptor is introduced to provide additional CD4+ T-cell functionality. SPEARHEAD-1 (NCT04044768) is a Phase 2 trial that evaluated afami-cel in synovial sarcoma (Cohorts 1 and 2) and myxoid/round cell liposarcoma (Cohort 1). SURPASS (NCT04044859) is a Phase 1, first-in-human trial evaluating ADP-A2M4CD8 as monotherapy or in combination with nivolumab in multiple tumor types. Autologous T cells are obtained by leukapheresis, transduced with a self-inactivating lentiviral vector expressing a specific T-cell receptor (and an additional CD8α co-receptor for ADP-A2M4CD8), and infused back to the patients following lymphodepleting chemotherapy. Both studies evaluate safety and anti-tumor activity. SPEARHEAD-1 Cohort 1 data

demonstrate that afami-cel is efficacious in heavily pre-treated patients. Overall response rate (ORR) in synovial sarcoma was 38.6% with a median duration of response of 50.3 weeks (data cut-off August 29, 2022); these data will be used to support a Biologics Licensing Application submission for use in synovial sarcoma. SURPASS data showed a confirmed ORR of 28% and median duration of response of 12 weeks (data cut-off Aug 1, 2022). Encouraging data from the ovarian subgroup in the SURPASS trial support the initiation of a Phase 2 trial evaluating ADP-A2M4CD8 in ovarian cancer (SURPASS-3; NCT05601752). Toxicities in both studies include cytokine release syndrome, prolonged cytopenia, and immune effector cell-associated neurotoxicity syndrome; however, an acceptable benefit-to-risk profile is evidenced. Nurses play key roles at every stage in the administration of T-cell therapy. Understanding advances in cancer treatment and associated clinical data will better prepare nurses to effectively manage patients that may benefit from these novel therapies.

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ONCOLOGY EDUCATION ESCAPE ROOM

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Inpatient and outpatient, daytime and nighttime Registered Nurses from Oncology participated in an oncology escape room as part of their annual education and training. Annual ongoing continuing education for Oncology Nurses is required per the American Society of Clinical Oncology/Oncology Nursing Society standards. The Oncology Education Escape Room was created as an innovative approach to meet these educational requirements. The Oncology Education Escape Room (aka Mr. G's Puzzle) fostered teamwork and collaboration as well as promoted skill development. Oncology Registered Nurses were involved in hands on activities for policy review, use of PPE and safety devices in hazardous drug administration, review of chemotherapy orders and consents, dose calculations, hazardous drug spill management, central line care and CLABSI prevention, and other chemotherapy administration guidelines from the Oncology Nursing Society (ONS) and NIOSH. The Registered Nurses who participated also evaluated the activity; overwhelmingly, the Registered Nurses reported this interactive approach met their educational objectives.

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PHASE 3 MAGNITUDE STUDY: RESULTS FROM SECOND INTERIM ANALYSIS OF NIRAPARIB WITH ABIRATERONE ACETATE AND PREDNISONE AS FIRST-LINE THERAPY IN PATIENTS WITH METASTATIC CASTRATION-RESISTANT PROSTATE CANCER WITH AND WITHOUT HRR GENE ALTERATIONS

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In the primary analysis of the phase-3 MAGNITUDE study, Niraparib with abiraterone acetate and prednisone (NIRA+AAP) demonstrated significant improvement in clinical outcomes in patients with metastatic castration-resistant prostate cancer (mCRPC) and homologous recombination repair (HRR) gene-alterations including improvement in radiographic progression free survival (rPFS). This secondary interim analysis (IA2) of the MAGNITUDE study reports the results of secondary endpoints and patient-reported outcomes (PROs). At the prespecified IA2 of the eligible patients (N=423) with mCRPC and HRR gene alterations, secondary endpoints (time to cytotoxic chemotherapy [TCC], time to symptomatic progression [TSP], and overall survival [OS]) were formally assessed and the primary rPFS endpoint and PROs including pain intensity were updated in the HRR alterations (HRR+) cohort, with sensitivity analysis performed for the subgroup of patients with breast cancer gene (BRCA) alterations. Patients were randomized (1:1) to receive NIRA+AAP (n=212) or placebo (PBO)+AAP (n=211). In the HRR+ cohort, the revised descriptive rPFS results at IA2 (cutoff: 17 June 2022) were consistent with the primary analysis. NIRA+AAP extended median rPFS to 19.5 months versus 10.9 months with PBO+AAP in the BRCA subgroup. NIRA+AAP led to statistically significant benefit in TSP in the HRR+ cohort with consistent benefit in the BRCA subgroup. In both the HRR+ cohort and the BRCA subgroup, NIRA+AAP showed continued consistent improvement in TCC. In the BRCA subgroup, NIRA+AAP showed a trend towards improved

OS in the primary stratified analysis and the multivariate analysis (MVA), accounting for imbalances in key baseline characteristics (Table 1). NIRA+AAP experienced delayed time to worst pain intensity (HR:0.70; 95% CI, 0.44, 1.12; nominal P=0.1338) and pain interference (HR:0.67; 95% CI, 0.40, 1.12; nominal P=0.1275) versus PBO+AAP in BRCA subgroup (Figure). No new safety signals were observed and the safety profile at IA2 was consistent with that of the primary analysis (Table 2). The updated rPFS results at IA2 were consistent with the primary analysis. A statistically significant and meaningful clinical benefit in TSP and meaningful clinical benefit in TCC were observed after 26.8 months of median follow-up. A trend towards improvement in OS was observed in the BRCA subset. A delayed time to worst pain intensity and pain interference was reported. These data continue to support the use of NIRA+AAP in patients with mCRPC and BRCA alterations or select other HRR gene alterations.

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PATIENTS RECEIVING SHORT RUN-IN TREATMENT (≤2 MONTHS) WITH ABIRATERONE ACETATE AND PREDNISONE (AAP) SHOWED SIMILAR BENEFIT FROM NIRAPARIB AND AAP IN THE PHASE 3 MAGNITUDE STUDY WITH METASTATIC CASTRATION-RESISTANT PROSTATE CANCER AND HRR GENE ALTERATIONS

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In the phase 3 MAGNITUDE study, niraparib (NIRA) with abiraterone acetate and prednisone (AAP) significantly improved clinical outcomes in patients with metastatic castration-resistant prostate cancer (mCRPC) and homologous recombination repair (HRR) gene alterations, specifically in BRCA patients. Before randomization, patients were permitted to receive up to 4 months of AAP as initial treatment of mCRPC to allow time for genomic testing. The purpose was to evaluate the impact of run-in treatment with AAP on the efficacy of NIRA+AAP. At the prespecified second interim analysis, a sensitivity analysis based on the duration of AAP run-in was conducted in patients with mCRPC and HRR gene alterations (N=423) that were randomized 1:1 to receive NIRA+AAP or placebo/AAP. A separate analysis was conducted on patients with BRCA alterations (N=225). Data presented as hazard ratio (HR) and 95% confidence interval (CI). The median duration of prior AAP treatment (n=98) received was 1.9 (range, 0.3–4.1) months. Treatment benefits in patients receiving AAP ≤2 mos run-in treatment with NIRA were similar in terms of radiographic progression-free survival (rPFS; hazard ratio [HR], 0.69 [95% confidence interval [CI], 0.36-1.30]); time to cytotoxic chemotherapy (TCC; 0.52 [0.24-1.11]); time to symptomatic progression (TSP; 0.32 [0.13-0.79]) to those who did not receive prior AAP (n=325; Table). Benefit in rPFS was not observed in patients receiving AAP >2 – 4 mos (1.47 [0.66-3.30]). The findings were consistent in the BRCA population. Similar benefit from NIRA+AAP was observed in patients receiving a short run-in (<2 months) of AAP alone compared to those who received both NIRA+AAP together for initial treatment of mCRPC. These data suggest that AAP may be initiated during HRR testing and once HRR positivity is established NIRA+AAP combination treatment be expedited for highest treatment benefit.

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OUTCOMES BY PROSTATE-SPECIFIC ANTIGEN LEVEL IN METASTATIC HORMONE-SENSITIVE PROSTATE CANCER TREATED WITH ENZALUTAMIDE PLUS ANDROGEN DEPRIVATION THERAPY AND IMPLICATIONS FOR CLINICAL PRACTICE

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In ARCHES (NCT02677896), enzalutamide+androgen deprivation therapy (ADT) improved survival vs placebo+ADT in men with metastatic hormone-sensitive prostate cancer (mHSPC). Despite guideline recommendations, treatment intensification such as enzalutamide+ADT is underutilized in clinical practice. This post hoc analysis examined the effect of enzalutamide+ADT vs placebo+ADT on overall survival (OS) and other outcomes by baseline prostate-specific antigen (PSA) categories, and examined the predictors

and effects of reaching undetectable PSA in men with mHSPC. Men with mHSPC were randomized 1:1 to enzalutamide+ADT or placebo+ADT. Analyses of clinical outcomes were conducted to assess the efficacy of enzalutamide+ADT in different baseline PSA categories. Additional analyses were based on reaching undetectable PSA or not (<0.2 or ≥0.2 ng/mL) during study treatment and included men with detectable baseline and ≥1 post-baseline PSA. Stepwise multivariate analysis was conducted on variables from a univariate logistic regression model to identify predictors of a decline to undetectable PSA. Clinical benefit of enzalutamide+ADT vs placebo+ADT was observed across men pre-treated with ADT, regardless of baseline PSA category (Table). Additionally, men with detectable PSA at screening who reached undetectable PSA with enzalutamide+ADT had improved outcomes including delayed independent central review radiographic progression (hazard ratio [HR] 0.14; 95% CI 0.09, 0.23) and improved OS (HR 0.22; 95% CI 0.16, 0.30) vs men with detectable post-treatment PSA. Predictors of reaching undetectable PSA on enzalutamide+ADT included baseline PSA (below vs above median [7.23 ng/mL] odds ratio [OR] 3.2, P<0.0001), baseline Eastern Cooperative Oncology Group (ECOG) (0 vs ≥1, OR 2.2, P=0.0034) and total Gleason at initial diagnosis (<8 vs ≥8, OR 2.5, P=0.0011). These data show the clinical benefit of enzalutamide for men with mHSPC regardless of baseline PSA after ADT. Men with mHSPC treated with enzalutamide who reached undetectable PSA vs detectable PSA had improved outcomes. Baseline PSA, ECOG, and total Gleason score may help identify men who will achieve undetectable PSA on enzalutamide+ADT. Nurses can educate patients with mHSPC on the importance of treatment intensification in improving outcomes regardless of pre-treatment PSA, even if PSA is undetectable due to initial ADT use. Nurses can reassure patients of the importance of achieving undetectable PSA to delay symptom deterioration, metastasis, or death. Nurses can help patients receive optimal treatment by monitoring symptoms and side effects, and assess baseline characteristics with implications for treatment response and quality-of-life.

P380
EXPOSURE RATES OF STAFF CARING FOR SIERRA TRIAL PATIENTS RECEIVING IOMAB-B: INFORMATION FROM FIVE SITES

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Iomab-B is an anti-CD 45 monoclonal antibody labeled with ^{131}I which delivers targeted radiation to leukemia cells. Its radioactive nature mandates precautions be observed to minimize staff exposure. Nurses not familiar with radioactive agents may have misconceptions around the safety of working with radionuclides such as Iomab-B. Their initial reluctance to working with Iomab-B presented an opportunity to work closely with site nursing staff to assure them safety would not be compromised. The radiation protection plan, staff education and radiation exposure monitoring results from five SIERRA sites are presented. An extensive program for nurses was provided by individual site Radiation Safety personnel. Education centered on the well-known principle of ALARA(A low as reasonably achievable). Reducing exposure to radioactivity, employs three key concepts: time, distance and shielding. Time spent in the room caring for the patient would be minimized. Maximizing distance from the patient and utilizing mobile shields would further diminished exposure. If no leaded room was available, Radiation Safety chose the optimal location and employed shielding to assure minimal staff exposure. All staff wore full PPE and were monitored for contamination upon exiting the room. Personnel were given individual dosimetry badges checked daily to track exposure. Exposure data from 5 sites and the 105 monitored personnel were analyzed into two categories, nurses and staff caring exclusively for Iomab-B patients and monitored staff wearing badges, caring for Iomab-B patients and others, not receiving Iomab-B but receiving radiation therapies such as brachytherapy. The findings were as follows. The mean dose of radiation for staff caring for Iomab-B patients was 0.07 mSv/ 7mrem. The mean dose of radiation for staff caring for Iomab-B and additional radiation therapy patients was 0.11mSv/11mrem. The NRC has established annual exposure limits for the public and those who may be exposed through occupational contact, such as nurses and other hospital personnel. The "occupational dose" limit of 50mSv/5000mrem and "public dose" limit of 1mSv/100mrem have been established as guidelines. The data presented revealed the average dose received by the 105 participating site personnel was 0.09mSv./9mrem. One can conclude radiation exposure from Iomab-B can be effectively attenuated through training efforts and shielding interventions.

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SUCCESSFUL INTERDISCIPLINARY

APPROACH TO TREAT PATIENTS WITH R/R AML WITH IOMAB-B PRIOR TO HCT: THE SIERRA TRIAL EXPERIENCE

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Iomab-B, an anti CD45 monoclonal antibody studied in the Study in Elderly Relapsed Refractory AML, (SIERRA), delivers ^{131}I to CD45+ leukemia. Because of the complexity of Iomab-B administration, cooperation and coordinating efforts of Nuclear Medicine, Radiation Safety and Nursing departments are necessary to provide this paradigm shifting treatment. Nuclear Medicine performs all necessary scanning procedures and is responsible for custody of the drug. Radiation Safety educates the nursing staff about safe practices when caring for the patient receiving Iomab-B therapy. Nursing cares for and monitors the patient throughout their hospitalization. A multi-pronged approach was taken to support each SIERRA site. Specialized manuals were provided for each department. Nuclear Medicine's manual explained the specialized imaging requirements for proper dose calculation. Drug ordering, delivery, handling, storage specifications, etc. was covered in the Pharmacy Manual. All required documentation was explained with illustrations. Care of the patient during various portions pre and post infusion were covered in the Nursing Manual. Work sheets were provided for convenience. Schedules of vital sign assessments and medication requirements were also included. Comprehensive explanations of needed supplies, pump configuration and pump programing instructions and how to calculate the hourly rate and drug volume were concisely explained. On-site visitations were made, reinforcing expectations and encouraging sites to become comfortable with treating patients. Open communication between sites and Sponsor provided additional support while fostering site independence and autonomy. Infusion preparation and coordination checklists were provided for both dosimetric and therapeutic infusion days. Mock "Infusion Day" were held at some sites where sites further honed roles and responsibilities for all three departments. The success of the multi-pronged approach can be assessed through the fact all infusions were administered in a safe and timely manner, department personnel performed their duties with minimal interruption or delay, and staff and environmental exposures were kept within acceptable ranges. Structured approaches built confidence for most sites to enroll and treat multiple patients. A structured plan, careful preparation and focused communication with sites prior to an initial Iomab-B administration provided a template from which planning subsequent Iomab-B infusions could be patterned.

P382
CREATING A CULTURE OF SUPPORT FOR PRECEPTORS

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Preceptors provide support and mentorship to novice nurses. Their guidance fosters learning and enables newly hired nurses to become competent and deliver safe quality care. Novice preceptors need support to build confidence as educators, however navigating the complexities of the oncology population poses additional challenges. Establishing a formal unit-based framework to support preceptors can impact onboarding, job satisfaction, and patient care. At a comprehensive cancer center, increasing nurse turnover has resulted in more novice, proficient nurses stepping into the preceptor role. No formal workflows existed to support preceptors onboarding nurses to oncology. The role of the Preceptor Coordinator (PC) was established to provide coordination, organization, and support for both preceptor and orientee. The unit-based PC developed an onboarding program implemented on an inpatient hematology-oncology area. At the start of the 12-week orientation program, the PC provided the preceptor and orientee a "Preceptor Pathway" detailing week by week guidance for clinical assignments and feedback documentation specific to caring for oncology patients. The PC created a weekly email assignment template that was sent to preceptors to communicate the orientee's clinical progress and discussion of learning needs. Once completed, the template was forwarded to the Charge nurses to utilize when creating the preceptor/orientee assignment.

The PC conducted weekly in person check-ins with the orientee and primary preceptor and kept the Nurse Leader, Clinical Nurse Specialist, and Nursing Professional Development Specialist apprised of any new concerns that could be addressed in real time. Of the 22 new nurses onboarded in 2022, 19 successfully completed orientation. 100% of the 12 novice preceptors reported feeling supported by the PC, felt motivated to precept again and confident in their oncology practice. Establishing a supportive culture for novice preceptors and newly hired nurses leads to successful onboarding and job satisfaction. The onboarding program established and facilitated by the unit-based PC provided continuous ongoing, open dialogue among preceptors, orientees and nursing leaders. The program has since been adopted by another inpatient oncology unit with plans to share with the organization's Inpatient Preceptor Taskforce.

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CANCER THERAPY–INDUCED INTERSTITIAL LUNG DISEASE AND PNEUMONITIS: INTEGRATING A VIDEO-BASED EDUCATION TOOL FOR NURSES AND PATIENTS

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Interstitial lung disease/pneumonitis (ILD/P) is a known risk of cancer therapies. Although management of low-grade ILD with corticosteroids and/or treatment interruption may slow or reverse ILD progression, higher-grade ILD requires permanent discontinuation of therapy. Oncology nurses play an important role in monitoring and managing adverse events, therefore it is critical they are prepared to educate patients and monitor for ILD/P. Early identification and management of ILD may allow for treatment to continue with appropriate treatment interruption or pharmacologic management, potentially avoiding permanent discontinuation of therapy, thus maximizing therapeutic benefits and enabling patients to achieve better clinical outcomes. This patient/clinician pilot project assessed whether a video-based education tool can assist clinicians and patients in: 1) improving understanding of ILD/P risk factors; 2) improving recognition of signs/symptoms and management of cancer therapy–induced ILD/P; and 3) encouraging prompt communication between patients and the interprofessional healthcare team. The educational video reviews key strategies to assist in the early detection of cancer therapy–induced ILD/P for more effective management, and encourages patients/caregivers to be partners in their care planning. Ten Nurse Champions each recruited 10 patients receiving cancer therapy with known risk for ILD/P, viewed the video tool during each patient encounter, and completed a brief survey. Supported by educational grants from AstraZeneca Pharmaceuticals and Daiichi Sankyo. Nine Nurse Champions completed the video pilot as of Jan 9, 2023. There was a +24% absolute improvement across all clinical topics evaluated from average baseline scores to final post-test scores. Identifying risk factors for ILD/P increased from 33% at pre-test to 78% at post-test. Categories of initial management of ILD/P when suspected and follow-up management of ILD/P if patient worsens increased from 11% to 56% and 44%, respectively. After completion of the video, 100% of patients felt confident in understanding signs/symptoms of ILD/P, found it helpful in determining when to contact their HCP, and helped to understand the importance of early detection. All Nurse Champions plan to continue using the video tool in their clinical practice. These data demonstrate the impact the video tool had on improving knowledge and practice skills needed to identify, monitor, and manage ILD/P in patients with cancer. The data show that a simple educational tool can motivate patients to take action, promptly talk with their care provider, and ultimately remain on treatment.

P384
LESSENING THE LOAD: PERITONEAL AND PLEURAL DRAINS

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Patients suffering from ascites and pleural fluid accumulation frequently have encounters with Oncology nurses. There is a need for increased education in the Oncology nursing field regarding the placement procedure, patient education, and management of patients with pleural and peritoneal drains. The purpose of this discussion is to shed light on the need for increased awareness surrounding peritoneal and pleural drains. In practice, I have accomplished the education of nurses regarding peritoneal and pleural drains by having in-depth discussions about how the drains are

placed. Utilizing hands-on demonstrations for both the nurses and the patient allows them to align together on their understanding of drain placement and management. As there continues to be an increasing need for transitioning care into the home and out of the hospital setting, improved awareness of drain management can assist in driving that change. The Oncology nurse is instrumental in educating patients regarding the safety of peritoneal and pleural drains. There is a lack of evidence based knowledge dissemination on this topic. By creating awareness through discussion of safe practices we can continue to deliver quality nursing care to the Oncology patient population. This discussion will also address where the future of peritoneal and pleural drains could be headed.

P385
BACK TO THE BONE: THE BASICS OF BIOPSY AND ASPIRATION

Elaine Schuessler, MSN, RN, AGACNP-BC, BD, Tempe, AZ

Bone marrow biopsy and aspiration is a procedure many oncology patients undergo. The Oncology nurse needs to be able to articulate to the patient the 'how' and the 'why' behind the procedure. The purpose of this discussion is to teach attendees various methods of sampling, the location of where the biopsy/aspiration may occur, disease states, and procedural preferences. Nurses will also learn the basics of the analysis of the sample, potential complications with sampling as well as what patients can expect post-procedure. Evidence-based literature will be discussed with learners supporting the discussion. We will also discuss some of the innovative medical devices launched in this field and what the future holds for our Oncology patients undergoing bone marrow biopsy and aspiration.

P386
CHANGING THE NARRATIVE: DRIVING NURSE AWARENESS IN INDUSTRY

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The medical device industry is constantly driving innovation to improve the healthcare industry for practitioners and patients. This discussion will showcase Oncology nurse awareness amongst multidisciplinary teams in the industry. I will leverage professional experiences to discuss the importance of nurses speaking up to change the narrative. The purpose of this presentation is to show nursing professionals the significant impact their profession has on medical devices, especially in the Oncology patient population. Interventions: By diving into multiple port projects, I have seen firsthand the need for nurses to be more involved in shaping the future of Oncology care related to ports. Through port education directed at nurses, I will highlight how the narrative has changed from within industry to include nurses. I plan to foster a sense of urgency amongst learners to speak up and have their voices heard. I will highlight real-life situations where nurses' voices mattered and directed outcomes of Oncology projects from within the medical device industry. Innovation is constant in industry; we need to make sure nurses are heard and are the driving factor impacting the Oncology products they utilize to care for their patients

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HUMAN FACTORS VALIDATION STUDY FOR A WEARABLE, SINGLE-USE INJECTOR

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Pegcetacoplan is a C3 inhibitor approved to treat adults with paroxysmal nocturnal hemoglobinuria, a rare disease characterized by life-threatening complement-mediated hemolysis (often leading to anemia) and thrombosis. Pegcetacoplan is self-administered as a subcutaneous (SQ) injection with an at-home infusion pump. A new, more convenient, wearable, single-use automatic injector (Figure), with a hidden needle, was developed to deliver pegcetacoplan 1080 mg in a 20-mL SQ injection in the abdominal area. A human factors usability study was completed to validate the use of the injector for the delivery of EMPAVELI® to be safe and effective for the intended users, utilizations, and usage environments. The purpose was to validate the device is safe and effective for the intended use in the expected settings. Adults with anemia and caregivers attended a 2-hour training session on the use of the injector and reviewed the instructions for use (IFU); a 1-hour learning decay period followed. Healthcare providers (HCPs) were not trained but received the IFU. Participants were tested on the correct placement of the device and delivery of drug mimic, along with the use of the necessary ancillary supplies (syringes, vial adapter, and alcohol wipes). Post test, participants underwent a critical knowledge-based assessment (KBA) and the

potential severity of harm and root cause of use errors were assessed. Overall, 45 people participated in the study: adults with anemia (n=15), caregivers (n=15), and HCPs (n=15). Of these, 44 (97.8%) correctly placed the device. One participant, an HCP who did not review the IFU, failed the use test, but placed the device correctly after reviewing the IFU. All other use errors concerned the ancillary devices used to fill the syringe or prepare the injection site area. Overall, 6 of 28 critical KBA errors were identified. The residual risk posed by the potential use errors was deemed acceptable (ie, severity of harm was below the threshold for additional mitigations and the benefits of the injector outweigh the risk). This study validated that the wearable injector can be used safely and effectively by intended users for prespecified utilizations in expected settings.

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IDENTIFICATION AND MANAGEMENT OF ADVERSE EVENTS ASSOCIATED WITH CILTACABTAGENE AUTOLEUCEL FOR TREATMENT OF MULTIPLE MYELOMA IN CARTITUDE-2

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Ciltacabtagene autoleucel (cilta-cel) is a chimeric antigen receptor-T cell (CAR-T) therapy targeting B-cell maturation antigen (BCMA) that is FDA approved for treatment of adults with relapsed or refractory multiple myeloma (MM) after ≥4 prior lines of therapy (LOT)—including a proteasome inhibitor (PI), immunomodulatory drug (IMiD), and an anti-CD38 antibody—based on previous results (CARTITUDE-1). Data from CARTITUDE-2 may inform the use of cilta-cel in earlier LOT; thus, nurses should understand the safety profile of cilta-cel in these populations, including cytokine release syndrome (CRS), neurotoxicities (eg, immune effector cell–associated neurotoxicity syndrome [ICANS]), and prolonged cytopenias. We describe an updated safety profile of cilta-cel across 3 cohorts in CARTITUDE-2. All patients in CARTITUDE-2 had MM and received a single infusion of cilta-cel. Cohort A had received 1 to 3 prior LOT, including a PI and an IMiD, and were refractory to lenalidomide. Cohort B had early disease progression (≤12 months after autologous stem cell transplant or start of prior LOT) after initial therapy, including a PI and an IMiD. Cohorts A and B were naïve to anti-BCMA therapies. Cohort C had received a PI, an IMiD, an anti-CD38 antibody, and a BCMA-targeting antibody–drug conjugate or bispecific antibody. Incidence and severity of adverse events (AEs) were assessed per CTCAE v5.0, with CRS and ICANS graded per ASTCT criteria. Cohort A median (range) duration of follow-up was 17.1 months (3.3-23.1, n=20); Cohort B, 18.0 months (5.2-26.3, n=19); Cohort C, 18.0 months (0.6-22.7, n=20). Overall response rates were 95% (Cohort A), 100% (Cohort B), and 60% (Cohort C). The most common AEs included cytopenias (Table), most of which recovered to grade ≤2 by day 60 across cohorts. Onset and duration of CRS and ICANS were similar across cohorts. Tocilizumab, corticosteroids, anakinra, or supportive measures were used to treat CRS. The majority of ICANS cases were ≤grade 2 and treated primarily with corticosteroids per protocol management guidelines. Patient-management strategies have decreased the incidence of movement and neurocognitive treatment-emergent AEs across the CARTITUDE program to <0.5% (including one new case [Cohort B] with over 250 patients dosed). The safety profile of cilta-cel in CARTITUDE-2 was generally manageable and similar across cohorts, warranting further cilta-cel evaluation in these populations. Nurses play a crucial role in identifying and managing AEs and educating patients about cilta-cel.

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PATIENT RETENTION AND PHYSICIAN ENGAGEMENT STRATEGIES DURING THE COVID-19 PANDEMIC IN THE PHASE 3 ATLAS STUDY OF APALUTAMIDE ADDED TO ANDROGEN DEPRIVATION THERAPY IN HIGH-RISK LOCALIZED OR LOCALLY ADVANCED PROSTATE CANCER

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The phase 3 ATLAS study (NCT02531516) is investigating if intensification of treatment with addition of

apalutamide to neoadjuvant and adjuvant treatment with gonadotropin-releasing hormone agonist (GnRHa) and external beam radiation therapy (EBRT) improves metastasis-free survival (MFS) in high-risk localized or locally advanced prostate cancer (HRLPC). Patient retention and physician engagement are vital for successful completion of long-term clinical trials. The purpose was to describe the initiatives used to maintain patient and physician participation, noting specific challenges related to patient retention during the COVID-19 pandemic, while maintaining trial integrity. Eligible HRLPC patients (Gleason score [GS] ≥8 or 7; if GS 7, prostate-specific antigen ≥20ng/mL; stage ≥cT2c; ECOG PS 0/1; Charlson Comorbidity Index ≤3) stratified to GS, pelvic nodal status, use of brachytherapy boost, and region were randomized 1:1 to apalutamide or placebo plus GnRHa for 30 (28 d) treatment cycles. Treatment was applied neoadjuvant/concurrent to EBRT with apalutamide 240mg/d vs bicalutamide 50mg/d for 4 cycles; 26 cycles are completed adjuvantly post EBRT with apalutamide 240mg/d vs placebo. The study is fully enrolled, and ongoing. Patients (N=1503) were randomized at 266 sites across 24 countries in North America, Latin America, Europe, Asia. Baseline characteristics of the study population include: median age, 67 yrs; ECOG PS 0/1; 89%/11%; tumor classification at study entry: high-risk, 66%/very high–risk, 34%; median PSA, 6.3ng/mL; cT2, 44%/cT3, 50%; cN1, 13%. In 90% of ATLAS patients, RT used was standard EBRT to prostate/pelvis over 6-8 weeks (cumulative 78-81 Gy). To improve patient retention to the primary endpoint (MFS), ~95% of participating sites are arranging travel reimbursement, reducing travel by coordinating with local labs and onsite radiology, and providing patient newsletters and education; other program participation is varied. For physician engagement, all sites are receiving materials to retain patients and site newsletters. As of this analysis (January 2022), 96% of patients have been retained on the study. The overall dropout rate can be maintained below the expected and statistically acceptable limits with implementation of retention initiatives. Very low rates of protocol (schedule of events) infidelity were observed in the phase 3 ATLAS study despite the COVID-19 pandemic. These initiatives led to high levels of patient retention and physician engagement upon trial enrolment, thus highlighting the importance of nurse leadership for coordinating trial fidelity and education with sponsor, patients, and physician investigators.

P390
IMPROVING PATIENT AND RN CHEMOTHERAPY ADMINISTRATION SATISFACTION-AN INPATIENT QUALITY IMPROVEMENT PROJECT

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Oncology patients requiring inpatient chemotherapy often experience long wait time impacting the time and number of patients who can be admitted on any given day, patient satisfaction, quality and efficiency of care, and increases costs. A root cause analysis was performed identifying the major bottleneck in initiating inpatient chemotherapy is the process difference when releasing chemotherapy orders between the inpatient and outpatient settings. For inpatients, Advanced Practice Clinicians (APCs) release chemotherapy orders, compared to outpatients, RNs initiate the release of chemotherapy orders. This project standardizes the chemotherapy administration protocol across the inpatient and outpatient settings, reducing wait times, decreasing patient length of stay, and improving staff and patient satisfaction. Its purpose is to empower RNs to practice at the top of their license and have chemotherapy treatment started as soon as the patient arrives on the unit. An 8-week pilot project was conducted for all oncology patients admitted to the Medical Oncology unit. One month prior to implementation, all RNs on the Medical Oncology Unit were trained on the established protocols, parameters, documentation, and steps to release chemotherapy orders. A tip sheet and checklist were offered. The Pilot Champion, Nurse Manager and Educator, and Clinical Nurse Coordinator (CNC) provided support. Weekly audits were conducted using the electronic health record (EHR) to compare times and delays before and after the pilot. Implementation of the project was from late October 2022 to December 2022. Weekly audits were conducted using the EHR to determine the changes in wait times. Change statistics were used to measure the average time of admission, start of chemotherapy treatment, and discharges. A post survey was conducted to identify feasibility, usability, and satisfaction of practice change. The change with inpatient RNs releasing chemotherapy orders significantly improved the chemotherapy order release time from two hours to 14 minutes, cutting the inpatient chemotherapy administration process time by half. This project pilot demonstrated that inpatient RNs initiating the release of chemotherapy orders contributed

to their empowerment and promoted collaboration among nurses and APCs, reduced wait times, and decreased patient's length of stay directly affecting patient satisfaction that deeply impacts an organization by improving the efficiency of care, and reducing healthcare cost, significantly impacting patient care.

RESEARCH

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ONCOLOGY NURSING DIPLOMA PROGRAM: IMPACT AND PARTICIPANTS' PERCEPTIONS

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Bachelor nursing graduates skills and knowledge in oncology are scanty and weak. As a result nursing graduates are reluctant to join oncology services. Aiming to overcome this dilemma, multiple clinical training pathways were implemented in different oncology centers to attract nurse graduates to join the specialty. At a national level, and to increase the number of Oncology Specialized nurses in Saudi Arabia, the Saudi commission (SCFHS) for Health Specialties established diploma programs of different specialties aiming to increase the specialized nurses in the national nursing workforce. With unified curriculum developed by experts under SCFHS; these programs were ran in different tertiary hospitals. These training programs were not studied yet to evaluate its effectiveness and whether it served the purpose of its establishment. The aim is to explore the perception of Oncology Nursing Training Participants about the training program and how it impacted on their oncology nursing knowledge, skills, and attitude. A retrospective study approach was used. Data from trainees completed surveys were used as the study quantitative data. After completing each academic year, Oncology Nursing trainees were asked to complete a program evaluation survey. The survey is consisted of six sections that covers; a)biographical data; b) program curriculum, c) program instructors, d) training quality and safety, e) knowledge & competency gained; f) overall satisfaction. By the time of data collection on May 2022, a total of 68 Surveys were recorded in the system. These data were collected and used for analysis. A descriptive analysis approach was implemented to analyze the quantitative data from the 68 surveys. Data revealed that 76% of the trainees were satisfied with the program overall. Around 52% believe that the program was comprehensive but long. Under program instructor section 32% were not satisfied with the instructors' knowledge and attitudes. Most trainees found that the program increased their knowledge and behaviors toward patient safety and quality of care, however, about 39% were not satisfied with their oncology specific skills. Although the study was small, it is still the first to unveil the oncology training program perception and attitude toward the studied program. It helped the authorized body to review and update the program curriculum as well as to set a process to ensure the program instructors awareness and involvement.

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MI SLEEP COACH FEASIBILITY STUDY: A MOBILE APP TO ADDRESS INSOMNIA SYMPTOMS AMONG CANCER SURVIVORS

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Sleep disturbance is one of the most common problems among cancer survivors with 20-59% reporting issues with sleep. Sleep disturbances can negatively impact physical health, mental health, and overall quality of life across multiple dimensions. Cognitive behavioral therapy for insomnia (CBTI), an evidence-based psychoeducational intervention, is considered a first-line treatment; however, a lack of access to trained professionals and limited reimbursement for CBT-I services severely limits patient access to this effective treatment. This single arm study aimed to evaluate adherence, usefulness, and satisfaction for the MI Sleep Coach app as an intervention for insomnia in 30 adult post-treatment cancer survivors. The MI Sleep Coach app provided CBT-I strategies (e.g., sleep diary, sleep plan, behavioral strategies for sleep, and dysfunctional sleep beliefs) through a digital mental health agent over 7 weeks. Thirty participants diagnosed with breast (24, 80%), prostate (3, 10%), and colon (3, 10%) cancer were recruited from March 2021 to June 2022. The mean age was 54 years. All 30 participants (100%) completed the entire study and provided data for the Insomnia Severity Index (ISI). Every app feature, excluding patient sleep stories (9 out of 10), was found to be useful by 80 to 93% of

participants. The highest-rated components were keeping a sleep log, getting a personalized sleep plan and reading lessons about sleep. Ninety percent (27 of 30) of participants were satisfied with the app and 93% (28 of 30) would recommend using the app. The mean score on the ISI significantly decreased from baseline (18.5, SD 4.6) to week 7 (10.4, SD 4.2, p=<.001, Cohen's d =1.5). At baseline, all ISI scores ranged (9 to 26) from subthreshold clinical insomnia to severe clinical insomnia. At week 7, 8 (27%) participants scored in the no clinical insomnia range while 18 (60%) scored in the subthreshold range. Six (20%) participants scored in the severe insomnia range at baseline, none scored in the severe insomnia range at 7 weeks. Prescription medication for sleep declined from 26% to 7% at week 7. At baseline, 48% were taking over the counter medications for sleep which decreased to 32% at week 7. The MI Sleep Coach app was found to be feasible, useful, and is a promising easily disseminated insomnia intervention for cancer survivors. Randomized trials are needed.

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IMPROVED NEUROCOGNITIVE FUNCTION WITH AEROBIC EXERCISE IN POSTMENOPAUSAL WOMEN WITH BREAST CANCER, RESULTS OF THE EPICC CLINICAL TRIAL

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Up to 75% of women with breast cancer (BC) experience neurocognitive decline that may persist for years following therapy. Aerobic exercise improves neurocognitive function in healthy older adults, whether this improvement extends to women with BC is not known. The purpose was to determine whether six months of moderate intensity aerobic exercise improves neurocognitive function in women receiving endocrine therapy for BC. This was a blinded, randomized clinical trial in which 153 postmenopausal women within two years of early-stage, hormone receptor positive BC diagnosis were randomized to an exercise intervention (n=77) or usual care (n=76). The community-based intervention was 6 months of > 150 minutes/week of moderate-intensity aerobic exercise. American College of Sports Medicine-certified coaches continuously monitored exercise sessions for intensity and safety. Neurocognitive function was assessed with a multidimensional battery of objective measures at prerandomization (T1) and after the 6-month intervention (T2) and at a comparable time in controls. Covariates including age, years of education, estimated intelligence, chemotherapy (yes/no), and time on endocrine therapy were considered. Using an intention-to-treat approach, data were analyzed using linear mixed-effects modeling with and without covariates. Women were, on average, 62.09 years old, with 16.02 years of education, white (91.5%), with stage I BC (64.1%). The groups did not differ on demographic or clinical characteristics at T1. Significant group-by-time effects were observed for processing speed (p=.041) with marginally significant time effects (p=.11). Processing speed improved in the exercise group (p=.009), but not in the controls (p=.762). Significant time effects were also observed for learning and memory, working memory, attention, mental flexibility, and verbal memory. We found improved learning and memory (p=.020) and working memory (p=.015) in the exercise group with no change for controls (p=.369; p=.275). We saw improved attention in the exercise (p<.0001) and control groups (p<.0002) and improved mental flexibility for both groups, although it was marginally significant for the exercise group (p=.058), controls (p=.006). Controlling for T1 between group differences in verbal memory performance, we observed marginally significant group effects (F=3.32, p=0.071) with the exercise group performing better (= -0.482) than the controls (= -0.676) at time 2. Older age was a significant covariate across multiple cognitive factors. Aerobic exercise may be an effective, low-cost, easily adopted intervention to mitigate neurocognitive decline in women with BC. Additional research is needed to confirm these results.

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IMPROVING ONCOLOGY NURSES' KNOWLEDGE OF COMMON TOXICITY CRITERIA ADVERSE EVENT GRADING

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Monitoring of adverse events (AEs) of anticancer therapy is essential in clinical trials and throughout a patient's treatment. The Common Toxicity Criteria of Adverse Events (CTCAE) is a standardized grading system for laboratory results and AEs in oncology

trials. FDA-approved anticancer package inserts use CTCAE grading to show the most graded AEs reported during clinical trials. However, a literature review revealed multiple gaps in AE knowledge and grading. For a large percentage of oncology nurses and Advanced Practice Providers (APPs), care delivery includes monitoring, managing, and mitigating side effects caused by cancer treatment. In response to the need to be knowledgeable in CTCAE grading to assess, document, and educate patients during their cancer treatment, this Doctor of Nursing Practice (DNP) project aimed to identify oncology nurses' self-reported level of proficiency in CTCAE grading and AEs, provide education on CTCAE grading, and determine the effect of this knowledge on clinical nursing practice. A quantitative, quasi-experimental DNP project was completed, which evaluated knowledge of CTCAE grading. Participants enrolled via a posting on the Oncology Nursing Society (ONS) community page and ONS contact list. After consent, participants completed survey questions on demographics, AE knowledge, and baseline evaluation of knowledge on CTCAE grading via a 6-question pretest. An online learning module on CTCAE grading was provided, which contained background information, a patient example, and package insert illustrations. A posttest evaluated improvement in knowledge. An inquiry was made regarding the unique patients cared for and the perceived clinical impact. There were 48 participants matched for pretest and posttest responses. Results show that the learning module increased participants' knowledge of CTCAE grading ($p = .003$). Participants identified the top five perceived clinical impacts as (1) improved patient assessment, (2) increased knowledge of CTCAE, (3) collaborative reporting, (4) patient education, and (5) awareness of screening for AEs. Oncology nurses play an essential part in a cancer patient's journey. They are heavily involved in many aspects of patient care, from assessment, administration of anticancer therapies, and educating patients on a treatment's known AEs. Increased knowledge of CTCAE grading can impact clinical practice and help to mitigate unfavorable outcomes. In addition, increasing knowledge allows for early recognition of AEs, affecting the quality of life and the patient's overall therapy outcome.

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INCOME LOSS AND LIMITED RESOURCES: FINANCIAL STRESSORS AND WORK ADJUSTMENTS FOR INDIVIDUALS WITH CANCER RECEIVING RADIATION THERAPY AT AN URBAN ACADEMIC CANCER CENTER

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As cancer care costs continue to increase, individuals with cancer may encounter financial stressors while participating in active treatment. Treatment and its subsequent side effects further impact working patients as they make workplace adjustments that can lead to further financial stress. The purpose was to explore participants self-reported financial stressors and workplace adjustments. The qualitative findings presented here are a data subset from an ongoing mixed-methods study exploring the stressors and coping mechanisms for individuals with cancer receiving radiation therapy in a large urban cancer center. Twenty individuals participated in semi-structured telephone interviews between January 2021 and June 2022. Interviews were recorded, transcribed, de-identified and uploaded to Atlas.ti. The first and second authors conducted qualitative analyses using descriptive and in vivo coding. Participants were predominantly female (65%) and ranged in age from 38-84 years old (M=62.3 years old). Cancer diagnoses included breast (25%), prostate (25%), endometrium (25%) and other cancers (25%). Most were retired (40%) or employed full-time (35%) with the remaining providing no data about employment or reporting being unemployed or disabled. Participants were enrolled in Medicare (40%) or Medicaid (20%) or had private insurance (40%). Median household income per participant's zip code ranged from $43,726 to $93,956. Participants from varying median income areas reported diverse financial stressors. All employed participants reported work-related stressors. They reported needing assistance paying bills and lost income due to side effects and treatment schedules (e.g., "I lost my job...and I know it was the situation arise because of my side effects"). Participants also reported stress from depleting allowable time off and/or having to take unpaid time off (e.g., "...stress of worrying about how my bills are going to get paid because I wasn't working, and I didn't have a lot of time on the books at work because I have other medical issues..."). Some also described having to continue working through treatment to pay their bills (e.g., "I got to pay my bills...I didn't really have the luxury to be out for

a long period of time"). Understanding the specific stressors and adjustments required by patients can aid in the design of future interventions to reduce financial toxicity of cancer care. Nurses can advocate for future legislation and policies that ensure flexible workplaces and financial relief policies, especially for patients with lower socioeconomic status.

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RETROSPECTIVE CHART REVIEW STUDY OF THE RELATIONSHIP BETWEEN PATIENT FALLS AND EASTERN COOPERATIVE ONCOLOGY GROUP PERFORMANCE STATUS IN OUTPATIENT ONCOLOGY

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This study explores the relationship between Eastern Cooperative Oncology Group (ECOG) Performance Status scores and patient falls in an outpatient oncology setting. Identifying if or when to reassess fall risk in the trajectory of a patient's cancer treatment may be beneficial. The ECOG scale is commonly used to assess functional status throughout a patient's oncology treatment. Impaired functional status is a recognized risk factor for falls in older people and a predictor of recurrent falls. Research is mixed in the assessment of the relationship between general activities of daily living (ADL) impairment and falls in adults with cancer. Some studies have observed an association between ECOG scores and fall risk. No studies evaluated patients who experienced a change in ECOG score. Screening for fall risk, often at baseline before cancer treatment has started, may fail to identify patients at risk during the progression of disease and treatment. This retrospective chart review included 50 adult patients who experienced a fall between 2017-2021 identified through an event reporting system. Patient characteristics and demographic information was collected (see Table 1). All ECOG scores were collected during the 6 months prior to the fall event. As shown in Table 2 the mean ECOG score from the first two-weeks of encounters (Mean 1) were compared to the last two-weeks of encounters prior to the fall (Mean 2). Four patients with only one encounter and one with no two-week period calculable on either end of the total encounters were eliminated from analysis for a total n=45. Missing data were replaced with the group mean for the corresponding two-week period. The mean difference in ECOG scores between the two two-week periods was significantly different, with a slight, but significantly higher ECOG score prior to the fall [$t(44) = -2.02$, $p=0.049$]. Patients with cancer may receive treatment for months to years and their functional status may change over time. A change in ECOG performance status may inform the point in time when patients should be re-assessed for fall risk. Although this study only analyzed data associated with patients who fell, the findings suggest it would be reasonable to study a matched group of patients without falls to assess changes in ECOG scores across the same period of time.

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MANAGING CYTOKINE RELEASE SYNDROME IN RELAPSED/REFRACTORY MULTIPLE MYELOMA: EXPERIENCE WITH TECLISTAMAB IN THE MAJESTEC-1 STUDY

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Cytokine release syndrome (CRS) is a systemic inflammatory response commonly associated with T-cell engagers. In the MajesTEC-1 study of teclistamab, the first B-cell maturation antigen bispecific antibody approved for the treatment of relapsed/refractory multiple myeloma, CRS was effectively managed with premedication, step-up dosing, and prompt diagnosis and intervention (submitted). As nurses are on the front line of patient care, recognizing CRS and responding with appropriate treatment are critical to mitigate risk of severe/life-threatening CRS. The purpose was to support nurses with guidance on CRS diagnosis, monitoring, and management in patients receiving teclistamab, based on MajesTEC-1 experience. Interventions: A step-up dosing schedule (SUD; 0.06 and 0.3 mg/kg step-up doses before first treatment dose of 1.5 mg/kg subcutaneous teclistamab), requiring premedication with a corticosteroid, histamine-1 receptor antagonist, and antipyretic, was used to mitigate risk of high-grade CRS. Frequent vital sign observations (every 2–4 hours per institutional guidelines) by the inpatient nursing team during SUD were required to monitor for CRS. CRS management was dependent on CRS severity but included tocilizumab (36.4% of patients), intravenous fluids (13.9%), low-flow oxygen (12.7%), steroids (8.5%), single vasopressor (0.6%), and other supportive measures, including

antipyretics. Overall, 72.1% of patients experienced CRS; all events were grade 1/2, except for one grade 3 event which occurred in the setting of an infection. Among patients with CRS, 96.6% experienced CRS during SUD, thus frequent monitoring during this period is critical. As common CRS symptoms (fever, hypoxia, chills, hypotension) can present with other conditions, a differential diagnosis is important to ensure that CRS is properly diagnosed and treated. CRS was monitored inpatient with vital signs checked frequently (every 2–4 hours) or continuously through wearable devices. Partnering with patients and physicians to recognize and report CRS symptoms early allowed for rapid intervention and transfer to intensive care where necessary. As infections can exacerbate CRS, patients should be examined for signs of infection, and all infections should be resolved before initiating teclistamab. In MajesTEC-1, tocilizumab could be considered for grade 1 CRS and was recommended for grade 2 events. At our institutions, tocilizumab was given for grade 1 CRS (either generally or if persistent), and no patient had recurrent CRS. Practical guidance is needed for nurses to recognize and monitor CRS, and to anticipate when treatment and escalation are needed, to ensure successful administration of teclistamab.

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COMBINED ADVANCED PRACTICE PROVIDER AND ONCOLOGY NURSE NAVIGATOR SIGNIFICANTLY IMPROVES DELIVERY OF SURVIVORSHIP CARE PLAN WITH MULTIPLE CANCER TYPES.

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This study evaluated the impact of a focused Survivorship Oncology Nurse Navigator (SONN) combined with the established Advanced Practice Provider (APP) SCP delivery team on improving survivorship care plan delivery in a cancer center serving a large rural population. In the United States, there are more than 15 million cancer survivors who experience late and long-term physical, psychosocial and spiritual effects following initial cancer therapy. Care coordination can improve these effects with cancer survivorship care plans (SCP) helping patients transition to life after cancer and providing important screening and educational recommendations. Nurse navigators can improve SCP visit completion by reducing barriers to care, facilitating timely care access, and improving patient outcomes. We obtained institutional support to provide a SONN and evaluated the impact on SCP visit completion rates, including survivorship education and coordination. We measured the rate of completion for 5 different malignancies (breast, gynecologic, prostate, head & neck, and skin) in the 3 months prior to the SONN and 3 months after comparing rates of SCP visit completion, education, SONN led SCP compared with APP-led SCP visits. We also evaluated the screening rate for Social Determinants of Health and percentage of patients receiving their SCP in their primary language. The SCP completion rate increased 56% (from 70 to 162) with 67 visits provided by the SONN and 95 visits provided by three APPs. Patients with breast cancer received the greatest benefit with SCPs. Increasing by 52% (from 67 to 106); patients who received education prior to their SCP visit were more likely to complete their SCP visit (94%). SDOH rate of screening improved to 89% (0 to 144) and although most patients were primary English speaking, the 7 patients who were not primary English speaking received their SCPs in their translated language. Adding a SONN improved SCP visit completion and education rates reducing barriers to care and improving care coordination. Pre-visit education had the highest impact on SCP completion rate. The hybrid model using both APPs and the SONN to deliver SCPs allowed the top-of-license practice and improved access to care. As the care team continues to provide this hybrid care model, additional research on long term outcomes can give the survivorship program further direction as healthcare delivery moves towards a value-based model.

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PREDICTING ANTI-CANCER TREATMENT-RELATED SYMPTOMS IN PATIENTS WITH HEAD AND NECK CANCER USING A MACHINE LEARNING APPROACH: A SCOPING REVIEW

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Increased treatment intensity has contributed to improved survival among patients with head and neck cancer (HNC) but has also led to higher rates of symptoms. Severe treatment-related symptoms may lead to delayed treatment, treatment interruptions, or dose reductions, all of which have a negative impact on survival and quality of life. Predicting patients at high risk for severe symptoms is a complex task due to the multidimensional interaction among potential predictive factors, frequently requiring personalized risk profiles. Machine learning (ML) has been shown to outperform the traditional linear regression approach for risk prediction and can provide a unique precision tool for this problem as it can help clinicians and researchers predict who is at risk for treatment-related symptoms and mitigate symptoms to improve outcomes and patient satisfaction. The purpose of this scoping review is to summarize the state of the science and identify gaps related to treatment-related symptoms predicted using ML approaches. We followed the guidelines for Preferred Reporting for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews. PubMed was searched for articles, which were included from inception until present. Articles were eligible for inclusion if they included the use of a ML modality to predict symptoms from any anti-cancer therapy for HNC. 331 articles populated from PubMed using a search that captured the intersection of these concepts, their abstracts were screened for eligibility. 30 articles were included in this synthesis. The largest proportion of articles included patients with all HNC types (11), followed by esophageal and nasopharyngeal cancers (9) and laryngeal cancer (1). Radiation therapy was the most common treatment modality explored in relation to symptoms (62%). Only three articles included true external validation of predictive models that used an unrelated dataset and only one analysis was prospective in design. Our synthesis included studies that show that ML models can predict treatment-related symptoms with accuracy that ranges from Area Under the Curve (AUC) of .65 to .85. The most common symptoms predicted included radiation-induced xerostomia, radiation induced temporal lobe injury, and chemotherapy-induced myelosuppression. ML is an important tool to improve prediction of treatment-related symptoms, which could optimize symptom management with an overall goal of improving cancer therapy adherence. Future work to develop prediction models is warranted but should be done using external validation to ensure high prediction capabilities.

P400
IMMUNE-RELATED ADVERSE EVENT MANAGEMENT FOR ONCOLOGY PATIENTS

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Rapid advances in cancer immunotherapy using Immune Checkpoint Inhibitors have led to significantly improved survival of patients. Immunotherapy is also associated with multiple immune-related adverse events (irAE's). The purpose of this research is to determine if reinforced patient education regarding early recognition/management of side effects/adverse events decreases serious immune-related events. It is hypothesized that utilizing a patient education plan may determine if these interventions can manage immune-related adverse events and thereby decrease the severity of these events. Our team reviewed literature addressing follow-up care for Oncology patients receiving Immunotherapy. To promote efficient management of immune-related adverse events several major oncology organizations (including Oncology Nursing Society) have published guidelines for diagnosis, grading, treatment and care of patients receiving immunotherapy. However, follow-up care has not been systematically studied. The results of the literature discussed the importance of patient education, early detection and reporting of side effects as well as continued surveillance after completion of treatment to detect delayed toxicities. From the literature reviewed, it is concluded that early patient reporting of side effects/adverse events demonstrates an increase in resolution and improved management of adverse events during treatment with immunotherapy. However, further studies need to be conducted. The implications of the research inspired our team to pursue development of comprehensive immunotherapy guidelines for telephone triage.

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CANCER-RELATED FATIGUE IN WOMEN WITH EARLY-STAGE BREAST CANCER BEFORE AND AFTER RANDOMIZATION TO AN AEROBIC EXERCISE INTERVENTION: A PRELIMINARY STUDY

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Fatigue is the most common symptom experienced among breast cancer patients. Aerobic exercise is known to reduce cancer-related fatigue (CRF) in women with breast cancer. Many factors may influence CRF mitigation through exercise including demographic, clinical, social, genomic, and epigenomic factors. However, these factors have yet to be fully understood in the context of CRF response to aerobic exercise. The aim of this study is to explore variation of CRF and demographic, clinical and social factors related to CRF in women with early-stage hormone-receptor positive breast cancer randomized to a six-month aerobic exercise intervention. This is a prospective study, benefitting from existing clinical, demographic, and fatigue data from the Exercise Program in Cancer and Cognition (EPICC) study. In N=159 postmenopausal women newly diagnosed with breast cancer prior to initiation of an aromatase inhibitor, n=76 participants were randomized to a moderate-intensity exercise intervention and n=77 had usual care. Using Patient-Reported Outcomes Measurement Fatigue Short Form T-scores, fatigue occurrence and severity will be evaluated in the exercise and usual care groups. Spaghetti plots will be used to visualize trajectories of fatigue measuring within-individuals variability for each group. Change scores will be calculated and Analysis of variance (ANOVA) will be used to identify individual changes in CRF from pretreatment (TP1) over 6 months, when all women began AI therapy and half were randomized to a six-month moderate-intensity aerobic exercise intervention (TP2). To reduce within-group error variance analysis of covariance (ANCOVA) will also be calculated. Covariates will be identified through bivariate analyses of available variables influencing CRF (e.g., age, BMI, social support, caffeine, alcohol use). Findings/Interpretation: Results for this study are pending and are projected to be completed for the ONS Congress meeting. These results could suggest that CRF variability exists among women at TP1, and over time from TP1 to TP2 in both the exercise and usual care groups. If CRF variability is identified this could support further investigation into genomic and epigenomic factors that may help identify cancer patients who are at highest risk of developing CRF, and which patients would benefit the most from an exercise intervention.

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ELABORATION OF AN EDUCATIONAL GAME FOCUSED ON TEACHING ABOUT BREAST CANCER PREVENTION

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Breast cancer, due to its epidemiological magnitude and progressive increase, requires the attention and preparation of health professionals so that they can act in the primary and secondary prevention of the disease. The nurse has more contact with the patient and autonomy in implementing preventive practices, as occurs during the nursing consultation. However, there is evidence of a need for more technical-scientific knowledge about basic concepts and procedures, which are rarely addressed in training during graduation. The game as an educational tool differentiates traditional teaching and translates knowledge dynamically and interactively, being a useful strategy in the health teaching and learning process. Purpose: to describe the development of an educational game as a health education strategy for breast cancer prevention. Method: a methodological study of the development of an educational game, using the stages of analysis, design, and development of the Instructional Design model. Findings and Interpretation: completing the analysis, design, and development stages allowed the development of the educational game, made in a question-and-answer board format. The houses scattered across the board have predetermined guidelines that the players must meet. The player who completes the course first wins the game. The content of the questions and answers was inserted in 59 letters, structured in three different categories of questions for the players: "I think, therefore I answer"; "I practice, therefore I learn"; and "I see, therefore I investigate". Discussion and Implications: in this study we developed an educational method of non-digital games due to the ease of group application. The game allows interaction between different individuals, providing fun, awakening the competitive instinct, and facilitating learning and memorization. The applied methodology allowed the development of an educational game aimed at professionals and students in training in the nursing area, which has the potential to be used as a tool to stimulate knowledge about prevention and health promotion related to breast cancer.

P403
BREAST CANCER'S NEW FOCUS, IMPROVING THE HEALTH LITERACY OF THE BREAST CANCER POPULATION

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Health literacy among breast cancer women can positively or negatively affect the outcomes of their recommended treatment by their medical team. Breast cancer patients with limited health literacy are at an increased risk for developing delayed side effects, disease recurrence, and failure to comply with follow up appointments and post-treatment mammograms. Additionally, this population of patients continues to necessitate routine care from their Primary Care Provider for all other medical conditions, however secondary to the complexity of a breast cancer diagnosis the patient continues to experience impaired health literacy as the patient may not be able to disclose the significant oncologic findings and treatments appropriately. The focused population reviewed was early-stage breast cancer patients in aims to reduce the risk of disease recurrence, emphasizing the understanding of the importance with continued surveillance, and compliance with adjuvant therapy if their disease is hormonal receptor positive. The need to assess one's health literacy at the time of diagnosis is key in the success of their treatment, continued surveillance, compliance, and risk of disease recurrence. Improving the breast cancer population's health literacy not only with the diagnosed patient but also with the Primary Care Provider is also instrumental leveraging their overall risk of disease recurrence. Primary Care Providers offer extended support of the oncology team for the population of hormonal receptor positive disease, as they offer encouraged compliance with adjuvant therapy and assist in managing the side effects of the antihormonal therapy, such as hyperlipidemia. Impaired health literacy among the breast cancer population is ignored and under researched. However, as breast cancer patients are living longer with the enhancement of treatment modalities, it is now more vital than before to improve the level of health literacy among the breast cancer population.

P404
EFFECT OF CAFFEIC ACID PHENETHYL ESTER ON DOXORUBICIN-INDUCED HYPERINFLAMMATION IN PRECLINICAL MODELS OF TRIPLE-NEGATIVE BREAST CANCER

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Tumor-promoting inflammation causes cancer recurrence, chemoresistance, proliferation and metastasis. Chemotherapy induced toxicities are associated with high expression tumor promoting proinflammatory cytokines. Caffeic acid phenethyl ester (CAPE) is a naturally occurring anti-inflammatory compound that has shown cytotoxicity to cancer cells. However, its anti-inflammatory activity and anti-cancer mechanism in TNBC cells are not well defined. A genome interaction tool was used to predict tumor-promoting cytokine associated with NF-kB. Effect of CAPE and doxorubicin on cell proliferation was assessed using the MTT assay. Clonogenic assay and inflammatory markers (IL-6, TNF-alpha, IL-1B) for colony formation was used to assess the effect of CAPE on colony formation and proliferation. Wound healing assay and RT-qPCR for cell migration markers (IL-8, 9, MMP2, MMP9) were used to ascertain the effect of CAPE migration. Cell Membrane integrity was assessed by trypan exclusion test for cell viability and apoptosis was confirm by the expression levels of BCL-2. Effect of CAPE on doxorubicin-induced inflammation was assessed using RT-qPCR. This research revealed that CAPE inhibits the proliferation in preclinical models of TNBCs whilst human TNF-α induced proliferation in preclinical models of TNBCs. However, CAPE inhibited human TNF-α induce proliferation in preclinical models of TNBCs cells, indicating that CAPE is an inhibitor of inflammation induce cancer proliferation. CAPE also suppressed triple-negative breast cancer cell migration and migration markers such as Vimentin, VCAM-1, MMP9, MMP2, and IL8. Furthermore, CAPE inhibited colony formation and colony formation inflammatory markers IL-6, IL-1β, and TNF – α. CAPE also promoted the loss of cell membrane integrity and suppressed the expression of the anti-apoptotic regulator BCL-2 in preclinical models of TNBCs. These results suggest that CAPE targets the NF-kB inflammatory pathway. Doxorubicin which is a standard anti-cancer drug was shown to increase IL-8, IL-6, and IL-1 in preclinical models of TNBCs. However, CAPE significantly inhibited the expression of these proinflammatory cytokines in doxorubicin-treated cells. This further confirms that CAPE targets NF-kB-regulated genes and suppress expression of doxorubicin-induce inflammation in triple-negative breast cancer. CAPE is potential anticancer agent as well as a potent inhibitor of key migratory markers and doxorubicin-induced proinflammatory cytokine

associated with doxorubicin-induced toxicities. Also, this research provides a direct insight and recommendation that suggest CAPE as a possible adjuvant for chemotherapy to help mitigate inflammation associated chemotherapy-induced toxicities such as cardiotoxicity, cardiomyopathy and nephrotoxicity.

P405
FEBRILE NEUTROPENIA: IMPROVING CARE THROUGH AN ONCOLOGY ACUTE CARE CLINIC

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Cancer patients are at risk for oncologic emergencies, including febrile neutropenia (FN). To prevent complications, timely treatment of FN is crucial. Providing this necessary care in the outpatient setting has been shown to be safe and effective. Objectives: To implement and evaluate an outpatient oncology acute care clinic (ACC) for the management of FN in the hematologic patient population. The specific aims were to reduce the time from fever identification to antibiotic administration, decrease emergency department (ED) visit rates, and evaluate patient satisfaction. A pre/post-implementation design was used. The multidisciplinary team was educated on the new process of caring for hematologic patients with FN in the outpatient clinic using a comprehensive algorithm. Findings: A total of 31 patients were included in the data analysis (15 pre and 16 post-implementation). After implementation of the outpatient ACC, time to antibiotic administration significantly decreased from 144.88 to 63.69 minutes, p=0.008. The number of ED visits decreased 73.3%. Overall, patients were satisfied with the ACC. These findings support the use of a dedicated outpatient ACC for care of the FN hematologic patient. Health care systems may consider implementing a similar process to improve patient outcomes. Appropriate and timely management of FN in cancer patients is critical to prevent increased admissions to the emergency department, length of stay, and morbidity and mortality. The gold standard is to administer antibiotics within 60 minutes of an identified fever, which may be effectively managed in the outpatient setting. A dedicated ACC reduced antibiotic administration time from 144.88 to 63.69 minutes and reduced ED visits by 73.3%. Information from this project can be applied to and can affect the clinical care of oncology patients. The ACC was embedded in an established infusion area of the cancer center that provided FN outpatient management to the blood and marrow transplant population. The frontline staff were very knowledgeable regarding the importance of time to antibiotics and were engaged in providing the same standard of care to the hematologic patient population. Whereas this project focused on FN, this type of clinic could benefit other oncologic-related complications, such as shortness of breath, pain management, dehydration, nausea, vomiting, and constipation. In addition, adding additional symptoms to be managed in the ACC would allow for increased productivity and efficiency in treating these symptoms.

P406
USING COLLABORATIVE NETWORK DATA TO RECRUIT RURAL RESIDENTS FOR PARTICIPATION IN PROSPECTIVE CANCER SYMPTOM RESEARCH: A PILOT STUDY

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Rural residents experience barriers in access to cancer clinical research resulting in underrepresentation of their experiences in the literature. Collaborative research networks such as Oncology Research Information Exchange Network (ORIEN) and TriNetX that use blanket consents, cohort identification, and structured data models can be leveraged to recruit underrepresented populations for symptom management research. ORIEN's use of a blanket consent in which new patients seeking cancer care are approached about participating in research including permission to be re-contacted about studies for which they eligible as their diagnosis and treatment plan unfolds. With IRB approval, this consent framework creates a resource for researchers to identify and invite research participants more efficiently. The purpose of this pilot study is to evaluate the feasibility of using collaborative research networks to recruit rural residents

to a cancer symptom management study. Our goal is to recruit 50 participants. Inclusion criteria were developed by the investigators and a TriNetX data specialist to identify potential participants, specifically >=18 years, diagnosis of cancer (using ICD codes), received treatment within past 6 months. The identified cohort was then cross-mapped to the list of individuals who signed the blanket ORIEN consent. The final list of potential participants was then securely passed to the research team via REDCap. Finally, rural-urban commuting area codes were added, allowing us to target recruitment to individuals living in rural communities. (Figure 1.) Recruitment emails were automatically sent via REDCap to 405 potential participants on 12/30/2023. The email consisted of a brief description of the study and screening questions. Interested individuals clicked the REDCap link directing them the e-consent. Once the e-consent was completed, REDCap then provided the baseline questionnaires (e.g. demographics, symptom burden) using a completely "touchless" process. Within 6 days of the email 43 of 405 individuals completed the consent and baseline questionnaires with zero follow-up contacts representing a 10% response rate and 86% of our planned sample. TriNetX cohort identification tools allowed us to precisely identify individuals likely to meet inclusion criteria. The ORIEN blanket consent streamlined the process such that only people who previously indicated interest in participating in research. The recruitment rate is promising given the timing and "touchless" approach. This pilot demonstrates that network research resources can be highly effective in recruiting underrepresented populations for symptom management research.

P407
THE EFFECT OF ORAL CRYOTHERAPY ON ORAL THERMAL HYPERALGESIA FOR PATIENTS RECEIVING OXALIPLATIN

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The objective was to determine if oral cryotherapy during oxaliplatin infusions will decrease the duration and severity of OTH in participants who have never received platinum- based chemotherapy. Oxaliplatin is a platinum-based chemotherapy used in combination with other chemotherapy as first line treatment for gastrointestinal malignancies. There are many side effects of chemotherapy, but unique to oxaliplatin is oral thermal hyperalgesia (OTH). While the exact prevalence is unknown, a review of the literature has shown anywhere from 65-98% of patients experience OTH which is cold exaggerated neuropathic pain as early as the first cycle. These symptoms impact the patient's quality of life and are a dose-limiting side effect that may delay treatment. Cryotherapy has been used to prevent other chemotherapy induced side effects, however there is a dearth of literature on the effect of cryotherapy on OTH. For this replication study, Participants were randomized to either the intervention or control arm. Prior to Cycle 1 Day 1of oxaliplatin, participants completed a demographic questionnaire followed by a baseline pre-treatment questionnaire developed by Bauman et al. (2019). Prior to the initiation of each subsequent infusion, participants in both arms completed the same treatment questionnaire evaluating their symptoms since the prior infusion. During each oxaliplatin infusion participants in the intervention arm were given frozen items and tracked how long they were able to tolerate the oral cryotherapy. Intervention arm participants then completed an additional questionnaire prior to leaving the unit about the amount of time they tolerated oral cryotherapy and rating their level of discomfort. Participants were followed for 4 cycles of oxaliplatin. A total of 33 participants were enrolled in this study, 16 participants were randomized to the intervention arm and 17 participants to the control arm. Oral symptom severity scores and symptom duration increased significantly in both treatment arms during the study period. The was no statistically significant difference between either arm. While the data was not statistically significant, it was clinically significant. As there was no difference between treatment arms, we can put less of an emphasis on cold avoidance while receiving oxaliplatin and focus on the preference of individual patients. While this study has had an impact on our patient population, there is an ongoing need for more research regarding the use of oral cryotherapy to decrease OTH.

P408
THE FIREFIGHTER CANCER INITIATIVE'S MOBILE CLINIC: A HEALTHCARE DELIVERY MODEL FOR CANCER SCREENING AND PREVENTION IN THE FIRE SERVICE

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Increased cancer incidence and mortality have been identified in firefighters. According to the National Institute for Occupational Safety and Health (NIOSH), firefighters have a 9% greater risk of cancer diagnosis and a 14% higher mortality rate. Recently, the International Agency for Cancer Research (IARC) classified occupational exposure as a firefighter as a group 1, "carcinogenic to humans." The National Fire Protection Association (NFPA) has set Standards on Comprehensive Occupational Medical Program for fire departments. However, due to barriers such as cost and logistics, these guidelines have yet to be implemented consistently. In response, the clinical team of the University of Miami, Sylvester Comprehensive Cancer Center's Firefighter Cancer Initiative (UM SCCC FCI) aimed to create and implement a screening program providing a convenient and evidence-based approach to cancer prevention screenings and education. Mobile clinics have been used in community settings as a cost-effective way of increasing access to care. Therefore, the UM SCCC FCI, with funding from the State and philanthropy, created a mobile clinic to provide care onsite at local fire departments. The mobile clinic provides annual examination and cancer screenings according to the NFPA and additional screenings per firefighter cancer research. The program was piloted with a local South Florida fire department. Participation was voluntary and the clinical team consisted of a nurse practitioner, nurse navigator, and remote collaborating physician. 151 of 219 (~70%) firefighters were screened from January through June 2022. 95% of completed visits were new patients with a >200% increase in patient volume/utilization. Most patients were male (91%), of white race (74%) and of Hispanic ethnicity (64%) Age ranges were 17% ages 20-29, 25% ages 30-39, 27% ages 40-49, 26% ages 50-59, and 4% ages 60-69. All patients seen were screened for thyroid, hematological, bladder/renal, and oral-pharyngeal cancers and given education regarding cancer prevention and screening. Over half of the patients seen met criteria for colon cancer and prostate cancer screening. Firefighters seen reported a 96.5% overall satisfaction rate. These results demonstrate that the UM SCCC FCI mobile clinic is an innovative and effective model for care delivery in the fire service and can serve as a mean to decrease barriers to care and increase care accessibility and utilization in the fire service.

P409
ASSOCIATIONS BETWEEN THE HEALTHY EATING INDEX (HEI) AND AGE OF DIAGNOSIS IN PANCREATIC CANCER

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The risk of pancreatic cancer (PC) has been shown to increase with age, but many factors influencing the age of diagnosis remain unknown. While alcohol intake and smoking status increase rates of earlier onset PC, it is not well-established that overall dietary quality prior to diagnosis may affect the risk of developing PC. The Healthy Eating Index (HEI) is a tool that may be useful in dietary quality assessment by measuring how closely eating habits align with current Dietary Guidelines for Americans. Diet quality measured by the HEI may provide information on the effect of diet on the age of onset of PC; however, this association is unknown. This study investigates associations between HEI scores prior to PC and the age of PC diagnosis. Design: secondary data analysis of de-identified data from the Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial. Inclusion criteria: patients with HEI scores who were later diagnosed with PC. Measurements: demographics, age at diagnosis, diet quality, smoking status, daily alcohol intake. HEI scores (0-100) reflect diet quality based on the 2015-2020 Dietary Guidelines for Americans. Higher scores indicate greater adherence. Analysis: simple regression and t-tests were conducted. Of the 421 patients, 89.5% were Caucasian and 58.4% were male, with a mean age at diagnosis of 72.7 years old (ranges: 57-86 years). The mean HEI score was 66.4 (ranges: 38.4 – 88.6) and alcohol intake was 10.9 g/day. Smoking status showed 42.8% 'never', 15.4% 'current', and 41.8% 'former' smokers. Age of PC diagnosis was significantly associated with HEI score ($p=0.0186$) and smoking status ($p=0.0002$), but not sex ($p=0.258$) or daily alcohol intake ($p=0.848$). Dietary quality prior to diagnosis is associated with the age of onset in PC. Results show greater adherence to dietary guidelines is associated with later age of diagnosis for those who develop PC. Considering that PC has one of the lowest 5-year survival rates among all cancer types, the

late onset of cancer development is groundbreaking to increase the number of cancer-free years prior to diagnosis. Further studies are warranted to 1) replicate the study for further validation, 2) examine if diet modification may affect PC diagnosis for those at increased risk of developing PC, and 3) explore treatment outcomes and overall survival.

P410
TOWARDS AN EQUITABLE CERVICAL CANCER SCREENING APPROACH: UNDERSTANDING CERVICAL CANCER SCREENING BARRIERS AND FACILITATORS AMONG BLACK IMMIGRANT WOMEN

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Black women in the United States (US) include native-born women (African Americans), and Black immigrant women (BIW) from Africa, and English-French-and Dutch speaking countries in the Caribbean. An emerging body of literature identifies differences between African American women and BIW that may contribute to their cervical cancer risk, such as 1) a lack of a comprehensive cervical cancer screening program with their native countries, and 2), BIW experiencing more structural barriers (lack of health insurance, less timely contact with healthcare system) that impede access to screening in the US. Yet, few studies examine culturally-oriented strategies for promoting cervical cancer screening among BIW. The purpose of this study was to qualitatively examine the cervical cancer screening beliefs and practices of Black immigrant women in Massachusetts. A qualitative descriptive approach, and the PEN-3 cultural model was used to examine factors influencing the cervical cancer screening beliefs and behaviors of N=25 BIW in Massachusetts (MA). Inclusion criteria were women who identified as a) Ghanaian, Kenyan, Ugandan, or Caribbean b) English speakers, c) Foreign-born, and d) between ages 25-65 years old. Recruitment strategy was informed by an academic-community partnership with The African Bridge Network, Uhai for Health, and Rosette Serwanga, a community development specialist for the African immigrant community. Participants were asked a series of questions regarding their experiences with cervical cancer screening in their native country and in Massachusetts. Content analysis and constant comparison technique were used to analyze data. Themes identified as barriers to cervical cancer screening included: Navigating a new identity as a black immigrant and perceived racism and discrimination this new identity brings, concerns related to their accent and language barrier, navigating health insurance system, experiences of racism and discrimination by self or others, and cost of transportation. Facilitators of cervical cancer screening were having knowledgeable network members to support identifying a doctor, receiving a doctor recommendation, and having student health insurance. Findings from this study can offer culturally oriented approaches for promoting cervical cancer preventive interventions within this population. Innovative: Reaching a hard-to reach population. The sampling approach in this study is innovative to capture the experiences of BIW from 4 different ethnic groups not often included in research studies. Also, a Culturally oriented theoretical framework, the PEN-3 Cultural Model informed the study conceptualization and analysis.

P411
COPING STRATEGIES AND DISTRESS IN ETHNICALLY DIVERSE AND ECONOMICALLY DISADVANTAGED PATIENTS WITH CANCER RECEIVING RADIATION THERAPY: A MIXED METHODS STUDY

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Up to 60% of patients with cancer experience significant distress which is linked to diminished survival and quality of life. Understanding coping strategies for distress may improve outcomes. The purpose was to describe coping strategies and distress for patients with cancer receiving definitive radiation therapy. This is an ongoing prospective convergent mixed methods IRB approved study. Patients completed the Brief Cope (BC) and Distress Thermometer (DT) prior to radiation therapy (RT). Semi structured interviews were conducted post RT. We examined relationships between BC (coping strategies) and DT (distress). Pearson correlation tests were used to assess relationships between DT and BC. Interviews

explored stressors and coping strategies and were recorded, transcribed then entered into Atlas.Ti for descriptive and in vivo coding. Forty patients enrolled between 4/2021 and 2/2022. Eighteen completed the BC, DT and a post treatment interview. Most patients were female (72%) and minority (Black 50%; Hispanic 38%). Mean age was 63. Cancer types were endometrial (28%), breast (22%), prostate (22%), various cancers (17%) and gastrointestinal (11%). DT data revealed 55.6 % were clinically distressed (M= 4.39, SD = 3.72). There were strong correlations between DT and BC of self-distraction (r = .620, p = 0.010), active coping (r = .627, p = 0.005), substance use (r = .551, p = 0.018), behavioral disengagement (r = .554, p = 0.020), positive reframing (r = 0.467, p = 0.050), planning (r = .665, p = 0.004) and acceptance (r = .682, p = 0.004). Qualitative analysis revealed themes matching significant correlations. Patients reported distraction strategies (e.g., "I just work, get distracted and it helps me"). Active coping, acceptance and positive reframing was expressed as self- determination and reliance on self (e.g., "I told myself I'm going to handle it"). Patients expressed behavioral disengagement as isolation (e.g., "I've kind of shut down from my community"). Substance use was not reported as a coping strategy. Patients expressed multiple coping strategies aligning with BC. They reported coping strategies which were not significantly correlated with DT (e.g., religion as a source of acceptance and strength (religion, r= -.319, p=0.213) and employment was a source of distraction). Nurses need to engage in the utilization of DT for patient assessment, as well as develop coping interventions, such as engaging with employers and clergy to improve quality of life for patients.

P412
PHYSICAL ACTIVITY INTERVENTION CHARACTERISTICS AND EFFECTS ON BEHAVIORAL AND HEALTH-RELATED OUTCOMES AMONG ADOLESCENT AND YOUNG ADULTS LIVING WITH CANCER: A SYSTEMATIC REVIEW

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Participation in physical activity (PA) during and after cancer treatment is safe and beneficial in the adolescent and young adult (AYA) cancer population (ages 15-39 at diagnosis). PA can positively impact behavioral, physiological, and psychological outcome domains. However, participation remains low for AYAs living with cancer. This systematic review synthesizes characteristics of effective PA interventions for AYAs living with cancer and the available evidence for behavioral and health-related outcomes of PA interventions. This review followed PRISMA guidelines and was registered with Prospero (CRD42022365661). PubMed, CINAHL, and Scopus databases were searched for randomized control trials (RCT) and non-comparative, non-randomized intervention trials with repeated PA measures through the last search date of September 25, 2022. Study selection and data extraction were completed by two independent researchers. Data extracted included participant demographic information, PA intervention characteristics, and behavioral and health-related outcomes. Studies were assessed using Joanna Briggs Institute Critical Appraisal Tool, and findings were synthesized to identify the most common characteristics of PA interventions and outcomes reported across studies. Initial database searches identified 5,201 studies. After duplicate removal and eligibility assessment, 22 studies were included: global (13) and United States (9). There were 14 RCTs and 8 non-comparative, non-randomized intervention trials with sample sizes ranging from 18 to 212 participants. These interventions included supervised PA (9), using a wearable device (8), weekly goal-setting sessions with the research team (5), or residing within a facility during the intervention (2). Nineteen out of 22 studies reported statistically significant improvements to behavioral (9), physiological (13), and/or psychological (12) outcomes, such as improving participation in PA activities, reducing pain and fatigue, or increasing quality of life and sleep, for intervention versus control groups or post versus pre-test. Most studies reported adherence to the PA intervention (13), and some reported follow-ups on behavioral and health-related outcomes beyond the intervention period (10). PA interventions can potentially improve behavioral outcomes and health-related quality of life for AYAs living with cancer. Efficacious PA design characteristics included using a wearable

device as part of the intervention, some level of supervision during the intervention, and/or goal setting with a member of the research team. Understanding and implementing specific PA intervention characteristics can potentially improve aspects of life for AYAs living with cancer.

P413
AN EDUCATIONAL MANUAL FOR CANCER PATIENTS WITH TOTALLY IMPLANTED VASCULAR ACCESS DEVICES

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Peripheral catheters are progressively being replaced by totally implanted vascular access devices (TIVAD). This device is widely used in patients who are undergoing treatments that require intravenous therapy for a long period of time. Patients with TIVAD often report doubts specially related to catheter care at home, especially when it is used for home chemotherapy infusion. The present study aimed to develop an educational manual for cancer patients with TIVAD. This is a descriptive methodological research. The research was developed in four steps: (1) Bibliographic survey; (2) Textual elaboration of the educational manual; (3) Selection of images and figures to illustrate the manual; (4) Manual formatting and configuration. The educational manual was prepared based on essential information for cancer patients who have an indication for catheter implantation and who will undergo both chemotherapy performed on an outpatient basis, as well as in a hospital or home environment. Regarding the general structure of the educational manual, it was made up of extratextual (cover), pre-textual (cover page, summary and presentation), textual elements, with four chapters that present: (1) general notions about the TIVAD referring to the surgical implantation procedure, clinical indication and use of the device; (2) infectious and non-infectious complications related to the use of the TIVAD; (3) postoperative care with the TIVAD and (4) home chemotherapy, involving home care with the TIVAD, as well as with an elastomeric pump and post-textual elements (bibliographical references). Counting thirty-five pages. Providing guidance through educational technologies with simple and assertive language increases safety and adherence to treatment, which constitutes a fundamental principle of patient-centered care. Though, health education and training of patients, family members and/or caregivers, through educational materials, are essential to preserve the safety and guarantee the effectiveness of chemotherapy treatment, minimize adverse events and reduce visits to the hospital that result from insufficient knowledge of the patient or caregiver in solving problems that are easy to manage at home. This study identified pertinent issues related to the TIVAD and home chemotherapy treatment that should be addressed in the health education process. This educational technology was designed using simple terminology and accessible to all levels of education, as well as illustrations to facilitate the teaching-learning process and make it more welcoming and attractive.

P414
SYMPTOM BURDEN EXPERIENCED BY PATIENTS LIVING WITH ADVANCED BREAST CANCER DURING AN APRN LED NAVIGATION VISIT

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The Advanced Breast Cancer (ABC) Program Navigation clinic aims to improve quantity and quality of life for people living with ABC. The symptom burden of early-stage breast cancer is well-described, whereas limited literature describes the symptom burden of people with ABC. Due to the lack of cure and need for ongoing anti-cancer treatment, an understanding of the real-time symptom burden experienced by those living with ABC is needed. Patients were referred by treating clinician or self and seen in the Advanced Practice Registered Nurse (APRN) led ABC Navigation clinic between June 2018 and March 2022. Patients completed the MD Anderson Symptom Inventory – Breast Cancer (MDASI-Br), which consists of 21 symptom severity items and 6 symptom-related interference items measured on a 0-10 scale. Data were analyzed descriptively. All participants were female (n=90) with a diagnosis of ABC and a mean age of 54 years (SD 10.34); 78% self-identified as white and 11% as black. Histologic subtypes distribution was:

66% ER+/PR+, 19% ER-/PR-/HER2-, and 16% HER2+. The majority (83%) of patients had invasive ductal carcinoma. Twenty-four percent of patients were diagnosed with de novo metastatic disease and 76% with recurrent metastatic disease with their status as 37% newly diagnosed and 52% newly progressed. Prior therapies received included: 46% hormonal therapy (46%), neoadjuvant chemotherapy (37%), adjuvant chemotherapy (28%), surgery (74%), and radiation (49%). Seventy-seven percent of patients had an ECOG status of 0 or 1. At the time of MDASI-Br completion women reported multiple symptoms, with the most severe being fatigue (mean 4.46, SD 3.06), sleep disturbance (mean severity 3.82, SD 3.08), distress (mean 3.16, SD 3.02), drowsiness (mean 3.12, SD 2.88), and sadness (mean 2.87, SD 2.96). Women reported their symptoms interfered with work (mean 4.63, SD 3.69), activity (mean 4.35, SD 3.39), enjoyment of life (mean 3.67, SD 3.19), walking (mean 3.56, SD 3.32), mood (mean 3.38, SD 3.12), and relationships with other people (mean 2.46, SD 2.93). People living with ABC experience multiple symptoms related to disease and treatment and report interference with functioning related to these symptoms. Longitudinal studies are needed to fully describe the symptom burden, identify risk factors for severe symptoms, and explore the impact of navigation and specific supportive measures on the symptom experience in ABC populations.

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BARRIERS AND GOALS OF CARE EXPRESSED BY PATIENTS LIVING WITH ADVANCED BREAST CANCER DURING AN APRN LED NAVIGATION VISIT

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Advanced Breast Cancer (ABC) is incurable with a limited life expectancy. The ABC Program aims to improve quantity and quality of life for patients living with ABC. Barriers to care and goals of care are well-described among individuals with early-stage breast cancer or under survivorship care, but there is very little information for people living with ABC. Barriers to care and goals of care were collected as part of an ABC Advanced Practice Registered Nurse (APRN) led Navigation clinic at every visit between June 2018 and March 2020. Patients were referred by treating clinician or self. Data were analyzed utilizing descriptive statistics. All participants were female (n=90) with a diagnosis of advanced (metastatic) breast cancer and a mean age of 54 years (SD 10.34); 78% self-identified as White and 86% as Non-Hispanic. Twenty-three percent were diagnosed with ABC within the past year, 53% were diagnosed one to five years ago, 16% were diagnosed five to ten years ago, and 8% more than 10 years ago. Most participants were married (73%) and employed outside the home full time (30%), unemployed (22%), or disabled due to illness (23%). Sixty-three percent of participants lived at least 75 miles from the cancer center. Barriers identified by ABC patients: knowledge deficit (93%), coordination of care (89%), financial concerns (23%), housing concerns (17%), transportation concerns (13%), and cultural needs (3%). Life goals expressed were family time (41%), maintaining quality of life (36%), and living a life with meaning (17%). Treatment-related goals of care included receiving coordinated care (9%), aggressive care (9%), symptom management (25%), and high quality of life care (9%). At each visit, 15-20 minutes was devoted to addressing specific barriers to care including care coordination, psychosocial support, and education. For 74% of visits, between 60 and 69 minutes was spent assessing and addressing barriers to care. ABC patients have unique and significant barriers to care, necessitating additional time at routine visits to assess and address these barriers. Longitudinal studies are needed to further describe these barriers and better articulate goals of care. APRN-led navigation allows for time to address barriers to care and promote the patient's goals of care for inclusion in their treatment plan.

P416
FEASIBILITY OF A VIRTUAL REALITY INTERVENTION TARGETING DISTRESS AND ANXIETY IN PRIMARY BRAIN TUMOR PATIENTS AT THE TIME OF CLINICAL EVALUATION: INTERIM ANALYSIS OF A PHASE 2 CLINICAL TRIAL

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People with cancer commonly experience distress and anxiety (termed "scanxiety") when undergoing imaging studies to monitor treatment or assess for recurrence, yet these symptoms are not always appropriately identified or well-managed in clinical practice. This interim analysis of a phase 2 clinical trial explored feasibility of a virtual reality (VR) relaxation intervention to address psychological symptoms at the time of clinical evaluation for primary brain tumor (PBT) patients. English speaking, adult PBT patients with previous reports of distress and upcoming neuroimaging were recruited between March of 2021 and March 2022. Exclusion criteria include recent surgery or seizures, anxiety disorders, nausea, or visual deficits. The primary intervention was a brief VR session done within 2 weeks prior to neuroimaging with patient-reported outcomes (PROs) collected before and immediately post-intervention, as well as 1 week and 4 weeks later, with self-directed VR use over 1 month. Feasibility metrics included enrollment, eligibility, attrition, and device-related adverse effects, with satisfaction assessed via qualitative phone interview. Fifty-five patients were screened and approached with 40 (73%) responding to initial reach-out and 20 (50%) ultimately enrolling (9 declines, 11 screen fails). Decline reasons included: no distress/anxiety (30%), treatment-related toxicities (11%), and unknown (59%). Seven (64%) failed screening due to exclusionary anxiety disorders (36% GAD, 18% PTSD, 9% claustrophobia). Of those enrolled, 65% were £ 50 years, 50% were male, 90% were White/non-Hispanic, 85% had good KPS (> 80), 65% had high-grade tumors, and most were on active treatment. All enrolled patients completed the VR intervention and participation period, PRO questionnaires, weekly check-ins, and qualitative interview. Most patients (90%) reported frequent VR use with 7 mild adverse effects reported (headache, dizziness, nausea, neck pain). At least 90% of patients found VR use worthwhile, would use VR again, and would recommend VR use to other patients prior to clinical evaluations. VR is an innovative platform that is being increasingly used in clinical populations to target unpleasant symptoms, provide distraction from medical procedures, and promote psychological well-being. This phase 2 study, as the first in the field, confirmed the feasibility and acceptability of a VR intervention to target distress and anxiety symptoms in a PBT population at the time of clinical evaluation. Enrollment will continue to assess for intervention effectiveness and future studies will explore VR use in other cancer populations.

P417
EXPLORING CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY SEVERITY PATTERNS AMONG YOUNG ADULT WOMEN WITH BREAST CANCER RECEIVING WEEKLY OR DOSE DENSE PACLITAXEL

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Paclitaxel-induced peripheral neuropathy (PIPN) is characterized by numbness and tingling in the hands and feet. PIPN symptoms may limit activities of daily living, the ability to return to work, and quality of life in the years after paclitaxel treatment. Prior research suggests that weekly paclitaxel dosing leads to significant neuropathy among women with breast cancer. However, little is known about PIPN patterns among young adult women with breast cancer. The purpose of this secondary analysis was to explore PIPN severity patterns among young adult women with breast cancer receiving weekly or dose dense paclitaxel regimens. Young adult women with breast cancer (18–39 years) beginning cancer treatment with dose dense (175 mg/m2 every 14 days) or weekly (80 mg/m2) paclitaxel completed the four numbness and tingling items of the QLQ-CIPN20 prior to beginning paclitaxel (T1), after receiving ~350 mg/m2 paclitaxel (T2), and after receiving 700 mg/m2 paclitaxel (T3). Numbness and tingling severity scores (0 – 100, higher scores=worse severity) were described and compared at T3 between women receiving paclitaxel 175 mg/m2 every 14 days and women receiving paclitaxel 80 mg/m2 weekly using a Wilcoxon-rank sum test. Women (N=39) were an average of 34.4 years old at T1, White (77%), and diagnosed with Stage II breast cancer (56%). Among women receiving paclitaxel 175 mg/

m2 every 14 days (n=27, 69%), median QLQ-CIPN4 scores increased from 0 (Range=0-66.67) at T1 to 12.5 (Range=0–58.53) at T3, while among women receiving paclitaxel 80 mg/m2 weekly (n=12, 31%), median QLQ-CIPN4 scores at T1 and T3 were 0 (Range=0–16.67), respectively. Overall, numbness and tingling severity was worse at T3 among women receiving dose dense paclitaxel than weekly paclitaxel (W=197.5, p=0.05). Results demonstrated that at the same cumulative dose of paclitaxel, dose dense paclitaxel delivery produced worse neuropathy severity than weekly paclitaxel delivery among young adult women with breast cancer. Given the negative effects of PIPN on physical function and chemotherapy dosing, it is important for nurses to understand PIPN patterns to initiate timely neuropathy management for young adult women with breast cancer. To our knowledge, this is among the first analysis to compare PIPN patterns among young adult women with breast cancer receiving weekly or dose dense paclitaxel regimens, two of the most common paclitaxel-based adjuvant regimens.

P418
DEVELOPING AND IMPLEMENTING A TRANSITIONAL CARE TELEHEALTH CLINIC TO IMPROVE POST HOSPITAL DISCHARGE ONCOLOGY PATIENT OUTCOMES

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Hospital admissions for oncology patients often require higher acuity care due to the complicated nature of their disease and complex treatment regimens resulting in adverse effects. Length of stay in the hospital may be longer in these patients as they require not only specialized treatment for their acute issue, but care for their underlying cancer as well (Suda et al, 2006). Many of these patients have ongoing issues well after their hospitalization and do not have adequate follow up care arranged to address these issues. A review of the 30-day readmission rates for oncology patients at the subject cancer center showed steady increase for the years 2020 (11.35%), 2021 (12.21%) and 2022 (13.60%). The Transitional Care Clinic (TCC) was developed as a Nurse Practitioner (NP) driven clinic to bridge the hand-off period between the inpatient and community setting for oncology patients discharged from the hospital. The NP developed a template to document in the hospital's electronic medical record (EMR) and created an EMS referral request for the Hospitalist to request follow up TCC appointments. The TCC referral prompt was incorporated into the hospitalist discharge order set so that every discharged patient is evaluated for follow up with the TCC. See Figure 1 for follow up algorithm. A thorough chart review and consultation with the discharging physician is completed prior to the visit. TCC telehealth interventions addressed at each visit as listed.

- Medication compliance
- Review pending diagnostic tests
- Education and support for caregivers
- Prescribe medications and outpatient diagnostic tests
- Arranging home care and referrals to other subspecialties
- Referral to hospital based urgent care for immediate evaluation if needed

As we are in the initial phases of gathering data and assessing the impact this clinic has on our oncology patients, we are hopeful it will translate into improved patient outcomes focused on connected care. 80 high risk for readmission patients were evaluated in the TCC in 2022 with 69% of those seen avoiding 30 day readmission. This innovative initiative aims to reduce hospital readmissions for high risk oncology patients through close follow up and early interventions to improve patient outcomes.

P419
UNDERSTANDING QUALITY OF LIFE CONCERNS FOR EARLY PHASE CLINICAL TRIAL PARTICIPANTS AT TIME OF ENROLLMENT

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The purpose was to explore and describe what is important to adults with advanced cancer enrolling on early phase oncology clinical trials (EP-CTs). EP-CTs represent a critical component of drug development and provide important information regarding treatment safety and potential efficacy. A better understanding of tumor biology has transformed the development of novel treatment options and led to the use of more personalized, targeted agents that have resulted in improved response rates, decreased toxicity, and extended survival for individuals with cancer. Despite the sense of hope that accompanies EP-CTs, patients participating in these trials often have

advanced stages of illness and frequently experience uncertainty regarding their potential clinical outcomes. There is limited understanding about concerns at time of enrollment. A secondary qualitative analysis of 51 structured interviews was conducted. Adults (>18 years) with cancer who consented to an EP-CT were approached to participate in the parent study. Data were collected through semi-structured interviews a large academic medical center from 05/2021 – 11/2021 at the time of enrollment on an EP-CT. Data were drawn from interviews about hopes and worries of participants at time of enrollment. Analysis was conducted using the NVivo software program. Fifty-one adults (median age = 57.9 years [range 31.8-80.1 years]) completed interviews. More than half were female (n=31, 60.8%) and 98.0% had metastatic cancer. The most common cancer types were gastrointestinal (47.1%), breast (23.5%), and lung (7.8%). Half (51.0%) had received three or more lines of prior therapy at the time of enrollment to the EP-CT. Quality of life was an important concern for EP-CT participants at enrollment. Four subthemes were identified. Findings provide an understanding of the importance of quality of life at the time of enrollment on an EP-CT and encompass physical, social, psychological, and temporal dimensions. This study is innovative in seeking to understand patient concerns and contributes important insights about what is important to EP-CT participants at enrollment. Findings provides an understanding of the multiple dimensions of quality of life for EP-CT participants at enrollment. Even for those who respond favorably, most EP-CT participants will experience disease progression (sometimes rapidly), thus, understanding and enhancing quality of life is an important concern. This study provides important insights and implications for psychosocial support, as well as a foundation for future research to inform interventions.

P420
THE EFFECTS OF PROACTIVE CRITICAL CARE NURSE ROUNDING WITH HIGH-RISK PATIENTS IN A DEDICATED CANCER HOSPITAL

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Oncology patients are most frequently admitted for complex procedures, chemo and biotherapies, treatment related complications, and symptom management. With an increased aging population and the shift towards ambulatory care, admitted patients have an increasingly higher acuity. This coupled with significant comorbidities results in a population that is high risk of acute deterioration during their inpatient stay. In addition, factors affecting the nursing population have resulted in a more novice workforce. Over the past decade rapid response teams have resulted in improvements in safety, yet there remains a need for additional evaluation and management of at-risk patients. The development of a new nursing role was piloted over a seven-month period to assess its effect on the number of inpatient emergencies at a 142-bed dedicated cancer hospital. The "SWAT" nurse is a critically care trained nurse whose role was obtained by funding an increase in critical care nursing staffing by 12 hours daily. The role was focused on proactive rounding of at-risk patients. This RN proactively rounded daily to each unit and identified, through discussion with the unit's staff, any patient at high risk of clinical deterioration or that had been discharged from critical care in the past day. The SWAT nurse performed assessments and collaborated with the interdisciplinary team including having direct access to the critical care provider. We compared the number of rapid responses and codes outside of the critical care unit seven months prior to and after the initiation of the SWAT role. Prior to initiation of the role the average number of rapid responses was 4.5/ 1,000 patient days compared to 3.5/1,000 patient days post-implementation ($p < 0.05$). Similarly, there was a decrease in codes outside of critical care from 0.48/1,000 patient days to 0.16/1,000 patient days ($p < 0.05$). There was no significant difference in overall medical codes. The introduction of dedicated proactive rounding and early assessment of at-risk patients was correlated with a decrease in rapid responses and codes outside of critical care. This role results in early intervention and/or care escalation reducing the "emergency" factor, resources, and disruption caused by rapid responses and codes. Future evaluation will analyze critical care re-admission rates, resource utilization, and attempt to correlate with timing of goals of care.

P421
TELEHEALTH AS A NURSING STRATEGY FOR MONITORING PATIENTS IN AN AMBULATORY ONCOLOGY PHASE 1 CLINICAL TRIAL UNIT: A PILOT STUDY

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The purpose was to evaluate feasibility, acceptability, satisfaction, and effectiveness of telehealth on early identification and mitigation of adverse events (AEs) during cycle one of Phase 1 clinical trials (C1-P1-CT). Patients with cancer are expected to call to report AEs while on Phase 1 clinical trials (P1-CTs). They often defer reporting AEs until next clinic visit. This practice heightens risk of unrelieved AEs requiring dosage reduction of study medication(s), emergency department visits or hospital admissions. An evidence-based practice project completed pre-COVID revealed that telehealth is effective at decreasing AEs in patients undergoing cancer treatments. There were no studies of the effect of telehealth on AEs during C1-P1-CTs. Quasi-experimental study of weekly telehealth visits was conducted using single-group repeated measures design during C1-P1-CTs. After approval by an Institutional Review Board, adults with cancer participating in P1-CTs at a large academic medical center were enrolled between August 2021 – March 2022. Telehealth visits were conducted by trained study nurses. Baseline surveys related to demographics, co-morbidities (Charlson Comorbidity Index [CCI]), and patient-reported outcomes (Patient-Reported Outcomes-Common Terminology Criteria for Adverse Events [PRO-CTCAE]). At each visit, PRO-CTCAE was completed. Common Terminology Criteria for Adverse Events used to grade AEs. Acceptability (Acceptability of Intervention Measure), and feasibility (Feasibility of Intervention Measure) were assessed at study completion by participants and study team. Descriptive statistics were calculated using Statistical Package for Social Sciences (V.28.0). Of 21 patients enrolled, 17 completed the study (mean age: 61.4 [range 43.0-80.0], 52.4% female, 90.5% white, 85.7% non-Hispanic). Most common cancer types were gastrointestinal 8 (38.1%) and breast 5 (23.8%). Patients had an average CCI of 8.46 (range 8.0-12.0). Weekly incidence of AEs: pain-31%-70%, constipation-31%-80%, nausea-23%-46%, dyspnea-29%-38%. Of all graded AEs, equal number were Grade 1 (n=34, 45%) and Grade 2 (n=35, 46%) with few Grade 3 (n=7, 9%). Almost one-third (31.0%) reported worsening symptoms triggering provider referral. The majority (93%-100%) reported high acceptability and satisfaction. Almost all participants (94%) wanted to continue after cycle one. Findings demonstrate telehealth facilitated timely identification and mitigation of AEs. This study is innovative in pursing telehealth as a resource to increase efficiency and ease of patients' access to professional consultation, enhancing safety for P1-CT participants. This study provides evidence that telehealth can be used as a nursing resource to monitor and support patients while on P1-CTs.

P422
EFFECTS OF COMBINED EXERCISE AND GAME-BASED COGNITIVE TRAINING ON CANCER THERAPY-RELATED COGNITIVE IMPAIRMENT IN JAPANESE BREAST CANCER SURVIVORS

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Cognitive impairment is a common side effect of cancer therapy. Effective treatment and management of cognitive impairment has not been established. The purpose of this study was to evaluate the effects of a combined exercise and game-based cognitive training intervention on cancer therapy-related cognitive impairment in patients with breast cancer. This international collaborative study between the U.S. and Japan used a mixed methods approach including randomized controlled trial and semi-structured interviews. Results of the quantitative analysis of Japanese data are reported here. Eligibility criteria were: diagnosed with stage I-III breast cancer, ≤20 to 75 years old, within 6 months to 5 years after chemotherapy, and reporting symptoms of cognitive changes. Sample size was estimated thirty participants in each group in both countries. The intervention involves playing two arithmetic games via tablet while pedaling a Bluetooth-connected portable exercycle. Pedaling speed adjusts the speed at which the games progress. Main research variables were cognitive function measured by the Functional Assessment of Cancer Therapy-Cognitive Function version 3 (FACT-Cog) and the Trail Making Test (TMT) Parts A and B. FACT-Cog includes four subscales: Perceived cognitive impairments (CogPCI), Comments from others (CogOth),

Perceived cognitive abilities (CogPCA) and Impact of perceived cognitive impairments on quality of life (CogQOL). Higher scores of FACT-Cog indicate better cognitive function. Data were collected at three time points (baseline: T1, post 4-week intervention: T2, and 16 weeks from baseline: T3). Data were analyzed using descriptive statistics to describe the sample. T-test was used to address the primary outcome of mean change scores on cognitive assessments from T1 to T2. Repeated measures ANOVA was used to examine change over time from T1-T3 (response profiles) in cognitive assessments. Twenty-nine (96.6%) women in the intervention and thirty (100.0%) women in the control completed the study. Women in this study were on average 55.4±10.3 years old in the intervention and 51.0±12.2 years old in the control arm. Marginal significant improvements were demonstrated for CogPCI and CogPCA from T1 to T2 for the interventional and control groups (p=0.072, p=0.056, respectively). Marginal significant improvement over time (T1-T3) for CogPCI was demonstrated in the intervention versus control arms (p=0.085). Findings suggest that the intervention was acceptable (low to no attrition) and may improve perceived cognitive function in Japanese breast cancer survivors. Further research with a larger sample is warranted.

P423
A RANDOMIZED CONTROL TRIAL EVALUATING CRYOTHERAPY TO PREVENT PERIPHERAL NEUROPATHY IN PATIENTS RECEIVING PACLITAXEL.

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Chemotherapy induced peripheral neuropathy (CIPN) is a serious side effect of taxane chemotherapy which may result in numbness, tingling, and burning in the hands and feet, adversely affecting patients' quality of life. Several small studies have demonstrated positive outcomes with cryotherapy related to taxane drugs. According to recent clinical guidelines, no recommendations were made for the use of cryotherapy for the prevention of CIPN. The purpose of this randomized control trial was to reduce subjective symptoms of CIPN. Breast cancer patients receiving weekly paclitaxel (80mg/m2 for 1 hour for 12 treatments) were randomized to cryotherapy versus standard of care. The study was conducted across five infusion centers in a mid-size integrated healthcare system. Patients in both groups completed the Patient Neurotoxicity Questionnaire (PNQ) at baseline, before each treatment, and one-week post completion of cycle 12. Patients randomized to the cryotherapy intervention were provided frozen gloves and socks 15 minutes prior to the taxane administration. After 45 minutes, the gloves and socks were replaced with a second frozen pair until 15 minutes after the completion of the taxane therapy. The total sample size was N=58, n= 39 in the intervention and n= 19 in the standard of care group. Demographic analysis showed both groups were equivalent at baseline. The primary endpoint was self-reported incidence of CIPN, using the PNQ, with a grading scale of no neuropathy to severe neuropathy. The first and last PNQ score for hands and feet were compared between the two groups using Wilcoxon/Mann Whitney test. The self-reported CIPN were clinically and statistically significantly lower in the cryotherapy group compared to the standard of care group for hands (p=0.002); feet (p=0.019), and overall score (p=0.005). Oncology nurses are at the forefront of implementing evidence-based interventions to prevent side effects of chemotherapy. This nurse driven research study utilizing a patient reported assessment tool adds to the existing body of knowledge supporting the use of cryotherapy to prevent CIPN and provides a framework for successful implementation of the assessment tool and the intervention.

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KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING PICC SELF-MANAGEMENT IN DAILY LIFE AMONG ONCOLOGICAL OUTPATIENTS: A CROSS-SECTIONAL STUDY

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Peripherally Inserted Central Catheter (PICC) provides an effective vascular line for infusion of

intravenous therapy in oncological patients, which can lead to complications, many due to incorrect PICC self-management in daily life. Self-management skills come from patient's knowledge, attitude and practice (KAP) and are more developed as much as the patient gets more educational interventions from the nurses. High PICC self-management skills reduce anxiety and fear of coping with the disease condition in the daily life. It is a priority to investigate the outpatient oncology patient's KAP to understand the tailored and patient-centred nursing educational interventions to be implemented to improve PICC self-management, reduce complications and ensure quality of life. Aim was to assess KAP regarding PICC self-management in daily life among oncological outpatients and to explore the association between the KAP level and patients characteristics, investigating both the area of technical skills and awareness of the importance of adherence to nursing educational interventions for effective PICC self-management. A cross-sectional study was conducted from September to October 2022, including patients with PICC line in oncological outpatient follow-up. An ad hoc structured questionnaire was used to measure patients KAP level on PICC self-management. Face and content validity were evaluated through a panel of experts and a pilot test. Explorative and Confirmatory Factor Analyses and Cronbach's alpha were performed to test instrument reliability and validity. Descriptive statistics, Kruskal-Wallis and Mann–Whitney U-test were performed to identify significant effects of sample characteristics. 70 oncological outpatient participated in the study. KAP mean scores showed low knowledge about monitor the outer length of the catheter to determine whether the catheter has shifted and practice in the daily performance of arm functional exercise, high attitude to contact nurse in case of catheter rupture. Female and patients with formal caregivers scored significantly higher about knowledge, the younger about practice and graduate patients about knowledge, attitude and practice. Knowledge was good, despite gaps on complications. Although attitude was high, practice showed a wide range of fluctuations in adherence. These findings, with statistical significance of sample characteristics, support the need for targeted educational interventions through a KAP-based systematic process of identification, design and evaluation. Evidence-based and customized educational pathways play a key role in optimizing both PICC self-management and patient empowerment, thus improving the patient's quality of life.

P425
DEMOGRAPHIC INFLUENCES ON BODY IMAGE AT BASELINE OF EARLY-STAGE BREAST CANCER CHEMOTHERAPY

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Women diagnosed with early-stage breast cancer (ESBC) will undergo physical and emotional body image changes manifesting by weight change, hair loss, self-consciousness about dressing, as well as changes to feelings of femininity, and sexual attractiveness. In order to personalize the assessment and symptom management for these issues, it is important to understand how the concerns of body image alteration vary according to Social Demographics of Health (SDOH) among ESBC populations. This study explores these issues according to age, race, and neighborhood deprivation status at chemotherapy start. This was a descriptive, comparative correlational design using data from the baseline time point of a multi-site, longitudinal study comparing the symptom experience, management, and chemotherapy dose intensity among Black and White women receiving ESBC. Sample inclusion criteria were as follows: female, self-reported Black and White race, 18 YOA or older and prescribed chemotherapy for a diagnosis of ESBC. Instruments /Scoring: Independent Variables: Age-Chart Review, dichotomized median score; Race-self report, Area Deprivation Index (ADI) as per patient address and dichotomized according to median score Dependent Variables: Ten item Functional Assessment of Cancer Therapy – Breast (FACT-B) Breast Cancer Subscale (BCS) measured total score, and single items measuring level of "bother" by weight change" and hair loss, self-consciousness about dressing, femininity, and sexual attractiveness. A total of 182 women were included. Age: Median age – 54 yoa. There were no differences between younger (45.1%, n=82) and older (54.9%, n=100) patients in alterations of body image. ADI: Median score – 63. ADI- 46.2% (higher, more deprived) vs. 53.8 % (lower, less deprived). Higher ADI (more deprived) - felt more sexually attractive than lower ADI ($p=0.015$, $p<0.05$). Race: 62 % (n=111) white and 38% (n=68) Black. Compared to White patients, Black patients felt more sexually attractive ($p=0.009$, $p<0.05$). There are no differences between patients in higher and lower ADI areas or Black and White patients for weight changes, hair loss, self-consciousness about dressing, and femininity. SDOH including age, race, and ADI can have implication for patient

reported feelings at the start of ESBC chemotherapy. Black patients and patients living in areas of more deprivation felt more sexually attractive than White and less deprived patients. Considering SDOH will help to personalize support during ESBC chemotherapy.

P426
IMPACT OF A PROACTIVE PATIENT ASSISTANCE PROGRAM FOR DIVERSE AMBULATORY ONCOLOGY PATIENTS: A RETROSPECTIVE COHORT STUDY

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Significant differences persist in cancer incidence, survival, morbidity, and mortality among populations in the US. Individuals of lower socioeconomic status (SES) suffer disproportionately from cancer and other disease burdens compared to individuals with higher SES. Financial hardship is increasingly common, with many cancer survivors reporting difficulty paying medical bills, high financial distress, and delaying or forgoing care because of cost. Cancer patients reporting financial hardship are more likely to have psychosocial distress1. Guidelines are needed to identify and mitigate financial distress among cancer patients, with the goal of improving psychological well-being and overall cancer survivorship care. Financial distress has been linked with several clinically relevant patient outcomes including quality of life, symptom burden, compliance, and survival. An NCI designated comprehensive cancer center has ambulatory oncology settings with a diverse racial, ethnic, and linguistic patient population. My Wellness Check (MWC) program assesses and triages patients experiencing emotional, physical, practical, and social concerns. Among 4,117 MWC patient responders representing 43.1% of eligible patients during October 2019 - February 2022, 801 patients (19.5%) with 976 supportive or practical needs alerts were triggered to social workers where 68.4% of the alerts were acted upon within 72-hour window5. For patients identified by MWC as having financial toxicity, internal Social Workers were leveraged to identify available resources to assist with patients' out-of-pocket costs. In July 2022, the cancer center launched a Patient Financial Assistance Program which included proactive screening of all patients receiving systemic therapy administered at one of SCCC's infusion centers. Patient Advocates identified eligible patients and after obtaining consent, enrolled them into philanthropic foundations and pharmaceutical assistance programs. A third-party partner, was contracted to provide patient advocates and technology augmenting the EHR. A retrospective analysis (July-October 2022) was performed for patients receiving philanthropic medical financial aid consisting of copay assistance and grants sponsored by drug manufacturers and diagnosis based non-profit foundations. This study has identified an unmet need in a cohort of commercially insured patients that are often overlooked. A proactive patient financial assistance program can reduce financial distress for patients with cancer, especially those residing in high & medium high Social Vulnerability Index (SVI) counties. Leveraging the expertise of a third party helps mitigate financial toxicity in the short term and can help drive more equitable cancer outcomes.

P427
INTERVENTIONS TO SUPPORT INFORMED DECISION MAKING ABOUT GERMLINE GENETIC TESTING FOR PATHOGENIC BRCA 1/2 VARIANTS: A SCOPING REVIEW

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Pathogenic BRCA1/2 variants are highly actionable and may inform hereditary breast and ovarian cancer (HBOC) treatment and prevention. However, rates of germline genetic testing (GT) in people with and without HBOC are suboptimal. Individuals' knowledge, attitudes, and beliefs may influence GT decisions. While genetic counseling (GC) promotes informed decision making, the supply of genetic counselors is insufficient to meet demand. Accordingly, there is a need to develop and test novel interventions to support informed BRCA1/2 testing decisions. The purpose was to characterize the existing literature on novel interventions to promote informed BRCA1/2 testing decisions in people with and without HBOC. We identified articles in PubMed, CINAHL, Web of Science, and PsycINFO using search terms related to HBOC, GT, and decision making. First, we screened titles and abstracts to identify peer-reviewed articles that described interventions to facilitate informed BRCA1/2 testing decisions. Next, we reviewed full texts and excluded studies that lacked

statistical comparisons or enrolled previously tested individuals. Finally, we extracted study characteristics and findings into a table. Two authors performed each step independently; decisions were tracked in Rayyan and discrepancies were resolved through discussion. Of 2,089 unique citations, 25 met eligibility criteria. Articles were published between 1997-2021 and described randomized trials (23/25, 92%) and non-randomized, quasi-experimental studies (2/25, 8%). Most studies tested GC models (8/25, 32%) and educational interventions (10/25, 40%), nearly half (11/25, 44%) of which were designed to complement traditional GC. Intervention formats included one or more of the following: written materials (9/25, 36%); interactive software and decision aids (6/25, 24%); and telephone (6/25, 24%), individual (4/25, 16%), or group GC (3/25, 12%). Of the interventions compared to GC, 6/9 (67%) increased or had a noninferior effect on knowledge, 5/6 (83%) decreased or had a noninferior effect on decisional conflict, and 4/7 (57%) decreased GT uptake. Novel interventions may promote informed decision making, but many were developed to complement traditional GC. Further trials comparing novel interventions to GC are warranted. Our ability to compare findings across studies was limited by differences in outcome measures and changes in BRCA1/2 testing guidelines over time. Nevertheless, our findings highlight promising strategies for promoting informed decision making in people considering BRCA1/2 testing.

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USE OF LIPOSOMAL GEL AND CHAMOMILE LIPOSOMAL GEL FOR PREVENTION OF SEVERAL RADIATION DERMATITIS IN HEAD AND NECK CANCER PATIENTS

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Head and neck cancer patients frequently develop radiation dermatitis (RD) during radiotherapy. Severe radiation dermatitis can negatively show the interruption of radiotherapy. In this study, we compared liposomal gel with and without chamomile for prevention of several RD in head and neck cancer patients undergoing radiotherapy. Double-blind randomized clinical trial. Sixty participants undergoing radiotherapy for head and neck cancer were recruited. This study was performed at the Unit of High Complexity Oncology of the University Hospital of Brasília, Brazil. The occurrence of moist desquamation (several RD) and the cumulative dose of ionizing radiation at the first occurrence of moist desquamation were evaluated. The skin were evaluated at every radiotherapy session by GRAL - Graduação da Radiodermatite Aguda Scale. In addition, participant's self-reported symptoms were evaluated weekly. Moist desquamation occurred in 34.6% of participants in the chamomile liposomal gel group and in 51.9% in the liposomal gel group (p=0.32). The media cumulative dose of ionizing radiation when moist desquamation occurred was 63.3 Gy in the chamomile liposomal gel group and 60.7 Gy in the liposomal gel group. Fewer symptoms were reported in the chamomile liposomal gel group compared to liposomal gel group. Severe grades of RD in head and cancer patients depend on multiple factors, including smoking and chemoradiotherapy, in this study, the two groups were balanced on those characteristics. No statistically significant differences in outcomes were found between the chamomile liposomal gel and liposomal gel. The results show lower occurrence of moist desquamation compared to literature, which needs to be further investigates in confirmatory studies. This study provides important evidence that both products should be investigated in future studies of several RD in head and neck cancer patients.

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ASSOCIATIONS AMONG MACRONUTRIENTS (PROTEIN, FAT, CARBOHYDRATE), INFLAMMATORY MARKERS, AND QUALITY OF LIFE

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Hematopoietic cell transplantation (HCT) is a potentially curative therapy for many hematologic cancers, such as leukemia, lymphoma, and multiple myeloma. Survival rates are improving for people receiving donor transplants as protocols improve. With increases in survivorship, there is a growing concern about short- and long-term consequences and impaired quality of life (QoL). Complications including dysgeusia, mucositis, diarrhea, constipation, nausea, and

vomiting are reported among HCT survivors, increasing the risk for malnutrition noted as a significant problem and one of the leading factors in decreased energy in improper nutrition intake. The impact of macronutrient (carbohydrate, protein, and fat) intake and digestion has been discussed as a modulator of inflammation, which is measured by inflammatory biomarkers such as (interleukin [IL]-6 and C-reactive protein [CRP])and QoL. This knowledge is critical for providing a foundation for considering the development of a targeted dietary self-management intervention to ameliorate inflammation and provide a basis for obtaining and maintaining optimal QoL for HCT recipients. This current investigation used an existing data set to examine the relationship between inflammatory biomarkers (IL-6 and CRP) and macronutrients. Dietary information was collected using the Automated Self-Assessment 24-hour Dietary Assessment Tool (ASA-24) developed by the National Cancer Institute. QoL was measured using the Functional Assessment of Cancer Therapy-General (FACT-G). Blood samples were obtained at each study visit. Inflammatory marker values were log-transformed, and Bayesian analysis for the path model direct (DE), indirect (IE), and 95% credibility intervals (CI) were performed using MPLUS. The mean age for the 46 participants was 56.8 (±14.64). Results supported the presence of an inverse DE for fiber on CRP at days 0 and 100 and positive DE for protein at day 0 for IL-6, an inverse DE for IL6 on QOL was supported at day 100 probabilities of direction (PD) of .90 or greater, suggestive of associations, were identified for protein on CRP at day 100, CRP on QOL at day 30, fiber on IL6 at days 0 and 100 Indirect effects (IE) with PD of .90 or greater were identified for fiber to QOL through IL6 at day 100. This longitudinal study identified the beneficial effects of fiber on selected inflammatory markers and QOL. Further investigation using larger, independent samples, with an examination of other inflammatory biomarkers and QOL-related factors, is needed to explicate the full communication among the diet-inflammation-QOL network.

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PERCEIVED COGNITIVE FUNCTIONING IS ASSOCIATED WITH ADHERENCE TO AN AEROBIC EXERCISE INTERVENTION FOR WOMEN WITH EARLY-STAGE BREAST CANCER

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Perceived cognitive problems are frequently reported during endocrine therapy for early-stage breast cancer (ESBC). In healthy older adults, aerobic exercise has been shown to enhance cognitive function and may be beneficial for women treated for ESBC. The purpose was to test the efficacy of moderate-intensity aerobic exercise to improve perceived cognitive function over a 6-month period of endocrine therapy in women with ESBC. Employing a blinded, pre-test, post-test randomized controlled design in the Exercise Program in Cancer and Cognition Trial (EPICC; NIH R01CA196762; NCT02793921), postmenopausal women (N=153) within two years of hormone-receptor positive ESBC diagnosis were randomized to either aerobic exercise (n=77) or usual care (n=76). The exercise intervention consisted of ≥150 minutes of moderate intensity aerobic exercise weekly, delivered in a community setting over 6 months. Coaches, certified by the American College of Sports Medicine, supervised exercise intensity. Perceived cognitive function was measured using the total score from the Patient Assessment of Own Functioning Inventory (PAOFI) at pre-randomization and at intervention completion with similar timing for usual care participants. Higher PAOFI total scores indicate poor perceived cognitive functioning. Adherence to the exercise intervention was defined as mean percentage of recorded minutes to the prescribed 150 minutes per week. Linear mixed-effects modeling was applied to test the efficacy of aerobic exercise on perceived cognitive function following an intention-to-treat approach and considering the adherence to the exercise intervention. Participants were on average(±SD) 62.1±8.2 years of age, white (91.5%), well-educated (mean±SD: 15.9±3.0 years) and had stage I breast cancer (64.1%). Treatment groups were balanced on baseline demographic and clinical characteristics and PAOFI total score (p≥.05). Intention-to-treat analyses revealed no significant group by time interactions or main effects for group and time for the PAOFI total score (p≥.05). Although the exercise group was on average adherent to the intervention (mean±SE: 101.3±6.8%), 42.7% had <100% adherence. When considering exercise adherence, PAOFI total scores were on average negatively associated with exercise adherence

(b= -0.043; p=.040), with greater adherence associated with lower PAOFI total scores and intervention participants with ≥100% adherence having the lowest scores (p=.046). Aerobic exercise may improve perceived cognitive function in women treated for ESBC, especially if adherence to an exercise intervention is maintained. Further research is needed to explore the treatment efficacy of aerobic exercise on the specific domains of perceived cognitive function.

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IMPACT OF HEMOGLOBIN ON ONCOLOGY PATIENT FALLS

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The Agency for Healthcare Research and Quality indicates that approximately 700,000 to 1 million falls occur in US hospitals annually. On average, there are 3 to 5 falls per 1000 patient days. In oncology, disease, treatment, and treatment side effects place a patient at a greater risk of fall. Treatment can lead to decreased hemoglobin. Not all oncology patients who have a low hemoglobin fall. A literature review did not identify studies in the oncology patient population that examined the impact of hemoglobin on fall rates. The purpose of the study was to determine clinical factors impacting hospitalized oncology patients with a low hemoglobin that fall versus hospitalized oncology patients with a low hemoglobin that do not fall. A retrospective chart review was performed. The study population consisted of a convenience sample of oncology patients hospitalized on three inpatient oncology units from July 2019 through June 2021. All oncology patients that fell during the identified time frame were included in the sample. A group of patients that did not fall during the same time frame served as a comparison group. 168 patients were evaluated (56 in fall group; 112 in comparison group). Hemoglobin and fall risk were evaluated on admission and within 24 hours of the fall. Additional variables included age and length of stay on day of fall. Treatments that patients underwent during admission included: allogeneic transplant (5.95%), autologous stem cell transplant (10.71%), chemotherapy (50%), no treatment (29.7%). 72.02% of the sample were admitted for hematologic disease while 27.98% had solid tumors. No significant difference was found between groups and comparison variables (treatment type, ethnicity, gender, disease [hematology versus solid tumor], race or hemoglobin on admission). In the fall group, a statistical difference was not detected between admission hemoglobin and hemoglobin on day of fall. In a population that consists largely of hematology patients, most are admitted with or develop a low hemoglobin. Not all patients who have a low hemoglobin fall. Although a significant difference was not found based on variables evaluated, future studies should consider including details on mobility and stratification by hemoglobin (which was not possible due to sample size of fall group).

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CUTANEOUS TOXICITIES WITH AMIVANTAMAB FOR NON-SMALL CELL LUNG CANCER (NSCLC) WITH EXON 20 INSERTION MUTATION (EX20INS): A PRACTICAL GUIDE AND BEST PRACTICES FOR MANAGEMENT

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Amivantamab, an EGFR-MET bispecific antibody, is an approved treatment for patients with ex20ins advanced NSCLC post platinum chemotherapy. These patients have few other treatment options. Cutaneous toxicities including rash and paronychia are known on-target effects of EGFR inhibition. Rash is a grouped term for various types of skin inflammation that can occur during treatment with amivantamab. In patients receiving amivantamab at the recommended phase 2 dose in the CHRYSALIS trial ((N=380), data cutoff March 2021 with 9.9-month median follow-up), rash and paronychia were reported in 75.8% (2.9% Grade 3) and 43.2% (1.8% Grade 3), respectively. No Grade 4 events occurred. Median first onset of rash was 14 days and 67 days for paronychia. Many patients experienced multiple dermatologic toxicities during treatment varying in type and severity. Rash and paronychia infrequently required treatment modifications (dose reductions in 5.5% and 2.6%; treatment discontinuation in 0.3% and 0.5% of patients, respectively). To mitigate rash, patients received ≥1 of the following medications: topical or systemic antibiotics (13.2%; 64.9%), topical or systemic corticosteroids (41.3%; 45.8%), emollients (8.0%), anti-acne preparations (5.9%), and others. Nurses and advanced practice providers (APPs) provide comprehensive support

and play critical roles in the education of patients and caregivers in the prevention and management of cutaneous toxicities. Rash and paronychia can cause physical discomfort and emotional distress for patients. However, these may not be prioritized by patients among other concerns regarding their cancer treatment. Since cutaneous toxicities can occur soon after treatment initiation, preventive measures include referring patients to a dermatologist specialized in cutaneous toxicities, advising patients to inform their dermatologist that they will start an EGFR inhibitor, educating on minimizing sun exposure, and administering antibiotics. Rash may be mitigated during treatment by advising patients on methods to prevent dry skin and nail bed infections along with topical treatments. Treatment can be escalated to oral antibiotics and/or systemic steroids when necessary, and dermatology consultation is strongly recommended for patients not responding to initial treatments. Scalp rashes can also occur during treatment with amivantamab but are managed differently than other cutaneous toxicities with various topical treatments. In summary, cutaneous toxicities are commonly observed adverse events with EGFR inhibitors including amivantamab and can be effectively managed with the support and guidance of nurses and APPs throughout the treatment journey.

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CANCER-SPECIFIC HEALTH EQUITY INTERVENTIONS AND METRICS: A SCOPING REVIEW

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Health disparities in cancer care persist, and in some cases are growing, despite decades of research aimed at achieving equal outcomes for all Americans. There is growing consensus that reducing disparities will require a shift from aiming to provide care that is equal, to aiming to provide care that is equitable. The current landscape of metrics and interventions that move beyond equality (i.e., care provided equally to all patients) and towards equity (i.e., care provided variably and justly such that patients achieve equal outcomes) have not been characterized systematically. The aim of this scoping literature review was to identify cancer-specific health equity metrics and interventions, and to explore current gaps in this field. Interventions: We searched four databases for studies published in English between 2012 and 2022 that implemented a metric to identify or an intervention to address cancer care inequities in the United States. All procedures followed the PRISMA scoping review guidelines. Included articles were abstracted to ascertain and characterize health equity metrics and interventions. The search returned 36,724 unique articles, of which 22,620 (62%) were excluded following title review, and 14,064 of the remaining articles (37%) were excluded following full text review. Only 40 articles (1%) included an intervention to advance health equity. Interventions included local programs (e.g., targeted community cancer screening) as well as national initiatives (e.g., expanded access to cancer care under the Affordable Care Act). Metrics included timeliness of screening and treatment, receipt of goal-concordant care, and survival. The vast majority of articles (n=34,729, 95%) were cross-sectional or cohort studies that described health disparities using one or more outcome metrics. Gaps identified included research on receipt of guideline concordant care, interventions addressing multiple levels of structural and social determinants of health, and studies including children and families. The vast majority of published literature on equity in cancer care remains descriptive. We identified few interventions aimed at addressing equity. Current metrics to evaluate equity in cancer care are largely focused on timeliness of care and clinical outcomes across the continuum. Metrics have not included patient-reported outcomes or other sources of data that could provide insight into factors that mediate disparities and help inform interventions to advance equity.

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SOURCES OF CANCER-RELATED DISTRESS IN ADULTS WITH CANCER: A SYSTEMATIC REVIEW

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Severe cancer-related distress (CRD) is experienced by over one-third of all people with cancer and is associated with poor outcomes including increased

symptom burden, psychological comorbidity, decreased adherence to treatment, disease progression, and poor quality of life. Despite effort devoted to screening, CRD often goes untreated due, at least in part, to the wide variety of causal factors and limited resources to adequately address them. For example, versions of the National Comprehensive Cancer Network's Distress Thermometer's Problem List (PL) have included 34 or more sources of CRD in categories such as: family problems, emotional problems, physical problems, and others. Many studies have described patient-reported sources of CRD, yet systematic inferences regarding common reported sources are lacking. The purpose of this systematic review is to identify the most common reported sources of CRD in adults with cancer and relationships between sources of CRD and demographic and clinical factors. CINAHL, PsycINFO, PubMed, and Scopus databases were searched from inception to January 2023 for empirical studies meeting the following inclusion criteria: participants 18 years or older, diagnosed with cancer, screened for CRD with the PL or similar measure to collect patient-reported causes of CRD. A total of 2324 unique articles were identified and screened; 53 met criteria for inclusion. Text review and quality assessment for risk of bias is ongoing. This abstract reports preliminary results from review of 34 of the 53 total articles. Frequency of reported sources of CRD were calculated using weighted grand means across articles. Reported relationships between sources of CRD and demographic and clinical factors were summarized. The top five most frequently reported sources of CRD were fatigue (51%), worry (50%), sleep (45%), pain (42%), and fears (41%). Fourteen articles reported relationships between specific sources of CRD and participants' age, gender, marital status, race, and education. Findings will be updated following review of the remaining 19 articles. Understanding the most common reported causes of CRD could improve practice by allowing healthcare organizations to prioritize appropriate resources to support patients experiencing CRD. Findings from this systematic review will advance science by providing preliminary data for further investigation of sources of CRD, including developing and testing interventions targeted to specific sources of CRD.

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THE EXPERIENCE OF PERIPHERAL NEUROPATHY SYMPTOMS IN BREAST CANCER SURVIVORS WITH TYPE 2 DIABETES

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Diabetes (type 2) is a risk factor for developing and/or exacerbating peripheral neuropathy (PN) symptoms in breast cancer survivors (BCS). In quantitative studies, PN symptoms have been associated with deficits in physical functioning (PF) and quality of life (QOL), but more information is needed about the effects these symptoms have on the everyday lives of BCS and diabetes. Understanding the experiences of BCSs with diabetes, in their own words, is an important first step to elucidating the challenges associated with having comorbid conditions. The purpose of this study was to explore how BCS with diabetes experience PN symptoms in their daily lives. This secondary study was part of a larger study examining factors associated with cancer-related cognitive impairment in cancer survivors. A qualitative descriptive approach was used. Purposive sampling was used to select participants from the larger study who had early-stage (Stage I–III) breast cancer, diabetes and PN symptoms. Semi-structured interviews were conducted that queried participants about the effects of PN on their PF and QOL. Participant narratives were summarized using standard content analytic techniques. Eleven BCS were interviewed. The BCS described PN symptoms that were varied, often persistent, and had troublesome effects on their PF and QOL. BCS said their PN symptoms "felt like frostbite, pins and needles, jolts of electricity, and skin rubbing against sandpaper." The BCS provided rich descriptions of how the PN symptoms impaired their mobility, interfered with their sleep, and affected their ability to do daily tasks and carry out work responsibilities. Symptom management included prescription and over-the-counter medications and self-management strategies. Some BCS felt that having both cancer and diabetes exacerbated the PN symptoms and complicated symptom management. PN symptoms may be more pronounced in BCS with diabetes and cause unique concerns for this population. Although BCS managed their symptoms with an assortment of strategies, the symptoms nonetheless affected their PF and QOL, in some instances to significant degrees. Our findings suggest that BCS with diabetes may need ongoing education about the nature and trajectories of PN symptoms and support for the self-management of acute

and persistent symptoms. Oncology practitioners should conduct baseline and ongoing assessment of PN symptoms, discuss how the symptoms affect persons' day-to-day lives, provide evidence-based treatments for PN, and support self-management strategies.

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THE EFFECTS OF SHORT-TERM CALORIE REDUCTION ON INSULIN RESISTANCE DURING CHEMOTHERAPY: A PILOT RANDOMIZED CONTROLLED TRIAL

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Due to several risk factors, including chemotherapy, cancer patients are at high risk for malglycemic events, even they did not have preexisting diabetes mellitus. Malglycemia needs to be prevented or controlled earlier as it is associated with poor patient outcomes. Evaluating and managing insulin resistance status may be one of the strategy to prevent malgycemia and its negative consequences. While evidence supports that intermittent fasting has positive effects on blood sugar and insulin resistance, it is not clear if short-term calorie reduction (SCR) is feasible and has therapeutic effects on insulin resistance in patients with cancer undergoing chemotherapy. Study Purpose. The aim of this study was to examine the SCR impacts on insulin resistance during chemotherapy for patients with non-Hodgkin's lymphoma. Methods and Interventions. This pilot, randomized controlled study recruited non-Hodgkin's lymphoma patients undergoing R-CHOP chemotherapy from 2021 to2022 at a medical center in Northern Taiwan. Participants were randomized to experimental or control group. While the control group received standard care, the experimental group performed a 48-hour SCR along with every cycle of chemotherapy. Insulin and blood glucose levels were measured before and after each cycle of chemotherapy to calculate homeostasis model assessment-estimated insulin resistance (HOMA-IR). Nutritional status (i.e., pre-albumin and weight) and adverse events were also closely monitored before and after each chemotherapy cycle. Descriptive statistics and generalized estimating equations were used to analyze the data. Findings and Interpretation. Fourteen patients with seven in the experimental group and seven in the control group were included. All patients in the experimental group successfully completed the SCR with stable nutritional status. No adverse events were reported. The mean value of HOMA-IR was 3.37 at baseline. The results showed that SCR has positive effects on HOMA-IR ($p<0.001$). Comparing to the control group, the level of HOMA-IR of the experimental group is lower after the first ($p<0.05$) and last cycle of chemotherapy ($p<0.001$). Discussion and Implications. To the best of our knowledge, this is the first study exploring the effects of SCR on insulin resistance in cancer patients receiving chemotherapy. SCR may be a feasible and an effective strategy to manage or prevent insulin resistant and malglycemia during cancer treatments. Large randomized controlled trails with long-term follow up are needed to confirm SCR's short-term and long-term impacts on glucose metabolism and regulation.

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THE USE OF ADJUVANT ZINGIBER OFFICINALE (GINGER) THERAPY AND CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV) IN ADULT ONCOLOGY PATIENTS

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Untreated CINV is associated with treatment discontinuation, decreased quality of life, dehydration, electrolyte imbalances, decreased treatment success, and increased costs of care. Despite significant progress in CINV prophylaxis with standard treatment, approximately 70-80% of patients with cancer still experience CINV. Different types of CINV (i.e. anticipatory, acute, delayed, breakthrough, and refractory) need to be managed. Ginger consists of bioactive compounds which antagonize 5-HT3-receptors in the nausea/vomiting pathway that is also targeted by ondansetron (Zofran). Adjunctive ginger therapy has demonstrated benefits in CINV via different routes and formulations including oral powder, oral capsules, sublingual fresh slices, oral liquid tea, moxibustion, aromatherapy, dry inhalation, and direct inhalation. The purpose was to review the current published research on the efficacy of different formulations and routes of administration for adjuvant ginger therapy in adult oncology patients with chemotherapy-induced nausea and vomiting (CINV). Different formulations and routes of administration for adjuvant ginger therapy including oral powder, oral capsules, sublingual fresh slices, oral liquid tea, moxibustion,

aromatherapy, dry inhalation, and direct inhalation are compared to standard antiemetics for CINV. Current evidence supports ginger therapy for acute CINV in various formulations and routes of administration in adult cancer patients. However, route and dosing have not been standardized for the different types of CINV. Few to no adverse effects were reported in the literature. Ginger is a promising adjunctive CINV therapy. Evidence for ginger CINV adjuvant therapy is equivocal due to clinical heterogeneity, confounding factors, small sample size, detection bias, performance bias, and high attrition risk. Current studies didn't have standardized dosing and route strategies. There was variability in ginger dose, routes, products, and standard antiemetics. Additional rigorous clinical trials aimed at reliable outcomes and standardization of ginger routes and doses are needed to minimize bias. There is a published protocol for the SPICE trial that investigates the efficacy of a standardized adjuvant ginger supplement in decreasing the incidence and severity of CINV quality of life in adults undergoing emetogenic chemotherapy. Secondary outcomes of this study also assess adjuvant ginger therapy on nutrition, anticipatory CINV, acute CINV, delayed CINV, fatigue, depression and anxiety, global quality of life, healthcare costs, adverse events, and adherence. Results are pending; however, this is a promising trial for adding evidence to the current literature on adjuvant ginger CINV therapy.

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IMPACT OF ACCREDITATION REQUIREMENTS ON THE DISTRIBUTION OF SURVIVORSHIP CARE PLANS

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The 2005 Institute of Medicine report From Cancer Patient to Cancer Survivor: Lost on Transition detailed unmet needs of U.S. cancer survivors. The panel recommended that every patient receive a treatment summary and survivorship care plan (SCP), which would contain information to help survivors and primary care providers improve the care of these individuals1. In 2015 the Commission on Cancer (CoC), which accredits approximately 1,500 cancer programs, required a 3-year phased implementation of providing SCPs to survivors in accredited practices2. Healthcare providers (HCPs) had many challenges in meeting this standard. In 2020, the updated CoC Standards "recommend and encourage" the distribution of treatment summaries and SCPs, but do not require them2. This study examines the impact of changes in accreditation requirements on rates of SCPs created using a free online tool from 2017-2021. We examined data from SCPs generated using the OncoLife tool. Variables analyzed by year include number of SCPs created by HCPs versus patients, type of HCP completing plan, and most frequent cancer types using OncoLife. The OncoLife SCP has been used to create over 130,000 SCPs since 2007. In 2017 there were 8,607 SCPs created by healthcare providers (HCPs). This number increased to 11,067 in 2018, but decline was noted in 2019 (9,629), 2020 (7,912) and 2021 (7,151). During this same timeframe, SCPs created by patients had a smaller decline (1,222 in 2017, 1,478 in 2018, 1,213 in 2019, 1,171 in 2020, 1,055 in 2021). The type of cancer patients receiving SCPs remained consistent, with breast cancer accounting for half of all SCPs each year. From 2018 to 2021, we observed a decrease in the total number of SCPs across all cancer types. Most frequent types decreased: breast 26% fewer; prostate 26%; lung 48%; colon 55%; head & neck 20%, and lymphoma 54%. During the study period, HCP users were primarily nurses (42%) and APNs (37%), followed by PAs (13%) and MD/DOs (2%). In 2018, number of SCPs peaked, just as CoC requirements matured. As requirements declined to recommendations in 2020, we saw a consistent decline in use by HCPs. This study demonstrates that regulatory requirements encourage the delivery of SCPs and without these standards in place, patients are less likely to receive needed survivorship information. The decrease in SCPs occurred across all cancer types, but some were more severely affected.

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IMPLEMENTING THE NYU ELECTRONIC PATIENT VISIT ASSESSMENT (EPVA) TO IMPROVE PATIENT OUTCOMES IN HEAD AND NECK CANCER

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Patients with head and neck cancer (HNC) experience severe symptoms and associated functional limitations during the cancer treatment. The NYU Electronic Patient Visit Assessment (ePVA) was developed for early detection and interventions for uncontrolled

symptoms in HNC. This randomized, non-blinded, phase 0/I study assessed the feasibility of conducting a large randomized clinical trial to evaluate the efficacy of the ePVA to improve pain management and Health-Related Quality of Life in patients with HNC. Methods: The study was conducted at an NCI -Designated Comprehensive Cancer Center in the Northeastern United States. 32 Participants were randomized to: 1) ePVA intervention or 2) usual care. The intervention consisted of participants completing the ePVA every other week during radiation therapy (RT), then weeks 4, 12, and 24 after end of RT. Automated reports of ePVA data, including pain reports and patient-reports of pain medications, were sent to providers to inform their clinical decisions. Because of COVID-19, the study team converted all study procedures to remote telehealth. Potential participants were contacted 5 to 7 days before starting radiation therapy, and informed consent was obtained using REDCap e-consent. The study team met accrual goals by enrolling 32 participants, with a recruitment rate of 68%. The primary reason that potential participants did not enroll in the study was their feeling overwhelmed with the diagnosis and start of treatment. Participants' mean age was 60, and the study population was primarily male (69%), white (81%), and non-Hispanic (81%). The two study groups' gender, race, cancer stage, and treatment were balanced across study arms. 88% (28 of 32) of participants completed 6 of 7 planned data time points, meeting feasibility criteria for a large multi-site randomized clinical trial. On average, the ePVA arm had non-significant trends toward less pain and mildly better HRQoL than patients with usual care. These findings indicate the feasibility of conducting a large randomized clinical trial of a digital remote monitoring system. Other findings include encouraging but non-significant trends toward better pain control and HRQoL in this small sample size, but generalizations of this study data are limited because of the small sample size.

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EXAMINING OCCUPATIONAL EXPOSURE RISKS AND THE EFFICACY OF TOILET SEAT COVERS AND ROUTINE DISCHARGE CLEANING IN MINIMIZING ANTINEOPLASTIC DRUG CONTAMINATION

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Antineoplastic drug (AD) exposure remains a significant concern for healthcare workers. Even at low levels, exposure to ADs can cause acute toxicities, reproductive problems, and an increased risk for cancer. Our prior work on the inpatient bone marrow transplant unit at Duke University Hospital (DUH) showed the highest levels of AD contamination in patient rooms were on toilet seats, which supports concern about AD contaminated excreta as a source of exposure. Surprisingly, we also found the presence of drugs not administered to the patient occupying the room in 26% of the samples (n=9/34), suggesting the presence of residues leftover from a prior patient (Walton et al., 2020). In this study we aimed to: 1. Test whether plastic backed pads over the toilet while flushing (experimental condition) are more efficacious than regular flushing (control condition) in minimizing AD contamination on toilet seats and on other bathroom surfaces, 2. Explore and test the efficacy of the current discharge cleaning method and agents to remove AD contamination from toilet seats and other bathroom surfaces. conducted this study on DUH's inpatient bone marrow transplant unit. We utilized a cross-over design whereby the entire unit was randomly assigned to either the control or experimental condition for a two month period, followed by a one month washout period, and then assignment to the opposite condition. To maximize our analytic sampling we repeated the cross-over approach a second time after another one month washout period. Rooms of patients who received cyclophosphamide or etoposide in the following 48 hours were eligible for recruitment into this study. Three surfaces (toilet seat, wall beside toilet, and floor in front of toilet) in the patient bathroom were swabbed at three time points; prior to chemotherapy administration, between 24-72 hours after administration, and after discharge cleaning. The swabbing followed a standardized procedure for surfaces that approximate 200 cm2. All samples were stored in the Duke Pharmacokinetics and Investigational Chemotherapy Core Lab and analysis is underway now. Liquid chromatography/mass-spectrometry will be used to analyze the samples. Quantifiable detection of AD exposure and the development of ways to reduce exposure to ADs is an important cancer control strategy for healthcare workers as well as for the families of patients receiving these drugs.

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PATIENT EXPERIENCE OF IMMUNE CHECKPOINT INHIBITOR THERAPY FOR NON-SMALL CELL LUNG CANCER

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Non-small cell lung cancer (NSCLC) is the leading cause of cancer-related mortality in the United States. Agents that inhibit immune checkpoint activation by tumors has increased the 5-year median overall survival in advanced NSCLC from 2% to 16%. While immune checkpoint inhibitors (ICPIs) are often well tolerated, they are not without significant side effects. There has been little research on the patient experience during ICPI therapy. The purpose of this study is to characterize the experience of patients with NSCLC receiving ICPI therapy. English-speaking patients, 18 years of age or older, with a diagnosis of NSCLC, and having received ICPI therapy for at least 3 months in the last year were eligible for the study. All patients were treated at a comprehensive cancer center in the southcentral United States. Purposive sampling was used based on age, gender, race/ethnicity, IT drug received, and toxicities experienced. After giving human subjects' research-approved consent, each patient was qualitatively interviewed about the treatment experience by trained research staff using an interview guide. Interviews were digitally audio recorded and transcribed verbatim for analysis. Analysis was performed by experienced qualitative researchers using a thematic descriptive exploratory method. Interviewing continued until no significant new themes or concepts were identified in three consecutive interviews. Twenty-two patients were interviewed. Mean patient age was 66.5 years (standard deviation 9.76), 55% were male, and 96% were white. 36% received nivolumab/ipilimumab, 27% pembrolizumab, 14% atezolizumab, 14% nivolumab, and 9% durvalumab. Six main themes were identified: ICPI symptoms, ICPI interference with daily life, NSCLC symptoms, symptoms from other treatments, ICPI benefits, ICPI drawbacks. The most common ICPI symptoms were fatigue (reported by 64%), skin changes (64%), lack of appetite (27%), and shortness of breath (23%). ICPIs most often interfered with general daily activities. Fatigue and pain were the most common NSCLC symptoms. The most frequent benefit of ICPIs was NSCLC control followed by improvement in NSCLC symptoms and better toleration than chemotherapy. Drawbacks of ICPIs included bothersome symptoms, frequent intravenous administration, and cost. While patients experience symptoms from ICPIs, they recognize the benefits of disease control and report fewer symptoms. More research is needed to quantify the experience of ICPI therapy so that patients' quality of life can be maximized during and after treatment.

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ASSOCIATION OF SOCIAL DETERMINANTS OF HEALTH AND COVID-19-RELATED BEHAVIORS WITH CERVICAL CANCER SCREENING IN HISPANIC WOMEN

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While cervical cancer is highly preventable through early detection, Hispanic women are 40% more likely to develop cervical cancer and 20% more likely to die from the disease compared to non-Hispanic Whites (NHWs) in the U.S. Specifically, the COVID-19 pandemic resulted in decreased screenings due to safety concerns; however, very limited information is available to evaluate the COVID-19 disruptions on cervical cancer screenings among Hispanics. This study investigated the association of social determinants of health (SDOH) and COVID-19-related behaviors with cervical cancer screening among Hispanic women. The National Institutes of Health (NIH) All of Us data was utilized, in which Hispanic (N = 37,253), NHW (N = 75,756), and non-Hispanic Black (NHB; N = 32,325) women aged 21 to 65 years were included. Within- and between-group characteristics were analyzed using descriptive statistics. Differences in measured variables between Hispanic and NHW women were investigated by performing Wilcoxon test/Student's t-test for continuous variables and Pearson chi-square/Fisher's exact test for categorical variables. Logistic regression models were used to estimate nonadherence to cervical cancer screening. Data analysis was performed in R using Jupyter Notebook in the All of Us research workbench. The rate of cervical cancer screening averaged 2-3% for

all ethnic groups, with Hispanic women consistently averaging lower than NHB and NHW women in 2017-2020 (p<.05). There was a noticeable drop in cervical cancer screening rates (0.92-1.03%) in 2021. Among the women adherent to cervical cancer screening, Hispanics demonstrated non-optimal SDOH and poorer general health status and lifestyle habits, as well as tended to be obese compared to NHWs. In Hispanics, social distance-related stress was significantly associated with adherence to cervical cancer screening during COVID-19 (p=.034). In the adjusted regression model with demographics, health status, and COVID-19 factors, the age group of 41-50, higher income, human papillomavirus (HPV) vaccination, and more social distance-related stress were associated with lower odds of nonadherence. Better general health status and 2nd COVID-19 vaccination were associated with higher odds of nonadherence. Our results suggest that SDOH and COVID-19-related behaviors are associated with cervical cancer screening in Hispanics. The knowledge gained could provide new insights into outreach efforts to prevent Hispanic individuals at risk from suffering the consequences of delayed screening and diagnosis and later-stage presentation of cervical cancer. The findings will inform future public health guidelines for planning Pap and HPV screening.

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QUALITY OF LIFE ACCORDING TO RACE AND AREA DEPRIVATION IN PATIENTS WITH EARLY-STAGE BREAST CANCER: THE SEMOARS PROJECT

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While race is known to be a factor in breast cancer outcomes, little research has examined area deprivation (AD) and its impact on QoL among patients with early-stage breast cancer (ESBC). Our study aimed to examine the relationship between race, AD, and QoL over the chemotherapy course among patients with ESBC. This Symptom Experience, Management, and Outcomes According to Race and Social Determinants of Health (SEMOARS) during Breast Cancer Chemotherapy project recruited a sample of Black and White women with ESBC receiving chemotherapy. The baseline sociodemographic questionnaire recorded the national area deprivation index (ADI) percentile calculated from home address (possible range 0-100, higher scores=greater deprivation). Functional Assessment of Cancer Therapy–Breast (FACT-B) (possible range 0-148, higher scores=better QoL) was captured in accordance with a patient's chemotherapy prescription (4-8 treatment cycles), 1-2 days before each chemotherapy cycle. Linear mixed modeling - Days of completing chemotherapy as a continuous-type predictor examined the relationship between FACT-B scores and race and ADI (participants categorized by sample median) over the chemotherapy period. A total of 53 (35.6%) Black and 96 (64.4%) White women with ESBC were recruited: mean age was 54.0 years (SD=12.1), median ADI percentile was 59.0 (Q1=35.0, Q3=83.0), and average chemotherapy cycles were 6.2 times (SD=1.6) and 110.3 days (SD=34.1). The mean total score of the FACT-B was 112.7 (SD=20.2) at baseline and 99.6 (SD=22.7) before the last chemotherapy cycle. Regarding racial comparisons, Black women lived in areas of significantly higher ADI percentile (M=76.2, SD=24.5) than White patients (M=48.9, SD=22.4). The main effect of race trended toward Black women experiencing lower FACT-B (worse QOL) than White women throughout the chemotherapy period (p=.08) in the linear mixed model, but not for the main effect of the ADI (p=.64). These findings underscore a racial difference in QoL among patients with ESBC throughout chemotherapy. Future research must specifically include patient experience of racism instead of only race, and the associations between other social determinants of health and QoL in patients with ESBC. This will ultimately assist in proactive interventions.

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DIGITAL HEALTH PSYCHOSOCIAL INTERVENTION IN ADULT PATIENTS WITH CANCER AND THEIR FAMILIES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Patients with cancer and their families often experience significant distress and deterioration in their quality of life. Many psychosocial interventions were examined to address patients' and families' psychosocial needs. Digital technology is increasingly utilized to deliver psychosocial interventions to cancer patients and their families. A systematic review and meta-analysis were conducted to review the characteristics and effectiveness of digital health interventions on psychosocial outcomes, across different delivery modes in adult patients with cancer and their family members. Databases (PubMed, Cochrane Library, Web of Science, Embase, CINAHL, PsycINFO, ProQuest Dissertations and Theses Global, ClinicalTrails.gov) were searched for randomized controlled trials (RCTs) or quasi-experimental studies that tested a digital intervention on psychosocial outcomes (e.g. depression, anxiety). The Joanna Briggs Institute critical appraisal checklist for RCTs and quasi-experimental studies was used to assess quality. Standardized mean differences (i.e., Hedges' g) were calculated to compare intervention effectiveness. Sixty-five studies involving 10,361 patients and 1,045 family members were included in the systematic review. Of these, 32 studies were included in a meta-analysis of the effects of digital health interventions on quality of life, anxiety, depression, distress, and self-efficacy. More than half (n=38, 58.5%) did not identify a conceptual or theoretical framework. Psychoeducation and cognitive-behavioral strategies were commonly used. Most interventions were delivered via the Internet (n=40, 61.5%). The median number of intervention sessions was six (range 1-56). The frequency of the intervention was highly variable, with self-paced (n=26, 40%) being the most common. The median duration was eight weeks. The meta-analysis showed that digital psychosocial interventions effectively improve patients' quality of life with a small effect size (g=0.05, 95% CI [-0.10, 0.12]; I2=48.2%, p=.00). Moderate effect sizes were found on anxiety and depression in patients measured by Hospital Anxiety and Depression Scale (g=-0.72, 95% CI [-1.89, 0.46]; I2=97.59%, p=.00). This study demonstrated the effectiveness of digital health interventions on quality of life, anxiety, and depression in patients. Future large, high-quality research with a clear description of the methodology to enhance the ability to perform meta-analysis is needed. Moreover, this study provides preliminary evidence to support the integration of the existing digital health psychosocial intervention in clinical practice. The study reviews the literature by applying a comprehensive search strategy, rigorous data abstraction, and appropriate meta-analytic approaches.