dysregulation such as obesity and insulin resistance. In this novel 16-week pilot study, we examined the effect of a circuit-based aerobic and resistance exercise intervention on self-reported sleep quality in breast, prostate, and colorectal cancer survivors and explored the association between changes in sleep quality and insulin resistance. Methods: Survivors of breast, prostate or colorectal cancers who were sedentary, overweight or obese (BMI>25.0 kg/m2) were randomized to exercise (n=60) or usual care (n=30). The 16-week intervention included supervised moderate-vigorous aerobic (65-85% of VO2max) and resistance (65-85% of 1-repetition maximum) exercise performed in a circuit, interval fashion three times per week. Patient-reported sleep quality and insulin resistance were assessed at baseline and post-intervention using Pittsburgh Sleep Quality Index (PSQI) and Homeostasis Model of Assessment (HOMA-IR), respectively. Mean changes in PSQI score that are negative demonstrate improvements in sleep. Between-group differences were determined using repeated-measures analysis of variance. Associations between changes in PSQI and insulin resistance were computed using Pearson correlations. Results: Participants were 63.2±10.8 years old, obese (87%), female (55%), and completed chemotherapy + radiation therapy (75%). Adherence to the intervention was 92% and the retention rate was 100%. Post-intervention, the PSQI global score improved significantly in the exercise group when compared to usual care (mean between-group difference, -2.7; 95% CI, -4.2 to -0.6). Change in PSQI was inversely associated with change in HOMA-IR (r=-0.91; p<0.01) among the exercise group. Conclusions: A circuit, interval-based aerobic and resistance exercise intervention improved patient-reported sleep quality in breast, prostate, and colorectal cancer survivors. Additionally, this exercise-induced improvement in sleep-quality may result in reduced insulin resistance.

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Multi-Level Factors Are Associated with Uptake of Cervical Cancer Screening in Sexual and Gender Diverse Adults Residing in Arizona

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Introduction: Despite availability of effective screening practices for early detection and prevention of invasive cervical cancer, emerging research suggests lesbian, bisexual, and transgender (LBT) individuals are less likely to undergo routine cervical cancer screening (CCS). Systematically examining factors for low CCS uptake in this population using a socioecological lens is key to designing and implementing effective interventions to reduce cancer-related death and disease. As the first step to this approach, the purpose of the study was to examine multi-level factors associated with CCS in LBT adults residing within the state of Arizona. Methods: Self-identified LBT adults with a cervix between the ages of 18-50 were invited to complete a one-time online survey assessing sociodemographic characteristics, health seeking practices, and CCS behaviors. Results: Of the 273 participants who completed the study; 62.5% identified as cisgender, 28.7% as transgender/gender nonconforming. Over 35% were gay/lesbian, and 30.8% identified as bisexual. Almost a quarter of participants reported never having received a Pap test. Fifty-four percent of all participants reported feeling uncomfortable discussing their health needs with a healthcare provider and over 60% were unsure of proactively asking their primary care provider for a Pap test. While 75% of participants who reported never receiving a CCS were sexually active in the past 12 months (a risk factor for cervical cancer), 53% were not sure if getting a Pap test was important (vs. 10% of those who received a CCS). Compared to those who had received a CCS, those who had never been screened had significantly lower cancer screening self-efficacy scores (t=5.18; p<.001) and were less likely to know someone in their social network who had received CCS (70% vs 38%; p<.001) suggesting that social norms may impact screening behaviors in this population. Conclusion: Interventions to increase CCS in this population may need to target proximal (knowledge, self-efficacy) and distal factors (social support, and strategies to improve provider communication strategies) while taking into consideration community-partnership guided participatory and implementation science approaches.

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Paclitaxel Treatment Effects on Neurofilament Light Chain (NF-L), a Possible Biomarker of Chemotherapy-Induced Peripheral Neuropathy (CIPN)

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Purpose: The purpose of the study was to determine if neurofilament light chain (NF-L), a biomarker of neurologic damage in disease states such as ALS, diabetes, and Parkinson's disease increases with neurotoxic chemotherapy. Methods: Female breast cancer patients (N=21) at two sites (Tucson and Flagstaff. AZ) receiving weekly or biweekly paclitaxel chemotherapy for 3-4 cycles (700-1500mg/m2 total dose) completed blood draws every two weeks. A single molecule array (SiMoA) was used to quantify NF-L levels in serum samples (Quanterix). Patients completed clinical neuropathy grading (CTCAE) and a symptom questionnaire with a neuropathy specific subscale (FACT GOG-Ntx) on day 1 of each paclitaxel cycle and within 30 days of the final treatment to characterize chemotherapy induced peripheral neuropathy (CIPN). The association between cumulative paclitaxel dose and NF-L (log-transformed) or Ntx symptom score (log of score plus one) were tested using linear mixed-effects models, adjusted for site, age, and BMI. The association between cumulative paclitaxel dose and CTCAE neuropathy grade was tested using a multilevel mixed-effects logistic regression model, adjusted for site, age, and BMI. Results: Participants were aged 55.7 ± 11.7 years and with early-stage breast cancer. Serum NF-L increased significantly during taxane chemotherapy: baseline of 38.8 ng/mL; end of study measurement 280.6 ng/mL; p = 0.001. The clinical CTCAE neuropathy grade and self-reported neuropathy symptoms worsened from baseline to end-of-study, with CTCAE of 0.2 ± 0.4 to 1.1 ± 0.6 and Ntx subscale (reversed-scored) of 38.4 ± 6.0 to 30.7 ± 7.6; both p < 0.003. Conclusions: NF-L and CIPN symptoms increased concurrently during taxane treatment. CIPN biomarker qualification is a critical area of survivorship research given the high prevalence of CIPN and the effects of CIPN