rural adolescents' access to mental healthcare. Healthcare providers include pharmacists, physicians, and mental healthcare providers (MHPs). 2) To identify rural high schoolers' barriers and potential solutions towards access to mental healthcare. METHODS/ STUDY POPULATION: Fifteen HCPs will be recruited via email listserv and the snowball method. Perceived barriers of rural adolescents, personal barriers, current practices to address mental health in adolescents, and preferred solutions will be discussed. Twenty student and parent dyads will be recruited using fliers in school systems and will be interviewed individually outside of class time on school grounds or over the phone. Barriers to care and preferred solutions will be discussed. All interviews will be semi-structured, recorded, conducted in person or over the phone, and last for 30 minutes to an hour. Compensation will be $25 for students and parents each, $50 for pharmacists and mental health providers and $100 for physicians. Thematic qualitative data analysis will be performed using Atlas.ti software. RESULTS/ANTICIPATED RESULTS: Data collection is ongoing. Anticipated results for barriers include absence of mental healthcare providers in rural areas, inability to access mental healthcare providers further away, stigma towards mental healthcare, and lack of knowledge of mental health conditions and treatment. Anticipated results for potential solutions may include promoting mobile applications to assist with telehealth and self-care. Other solutions may be collaboration among rural healthcare providers for adolescents with mental health conditions. Preferred solutions may also include pharmacists disseminating knowledge to rural adolescents and their parents or referrals to mental healthcare providers. DISCUSSION/SIGNIFICANCE OF IMPACT: This project will identify barriers and solutions to access to mental healthcare among rural adolescents. These solutions can then be applied towards the creation of programs that address salient issues within rural communities with a greater chance of uptake and use so that rates of depression and suicide will decrease. CONFLICT OF INTEREST DESCRIPTION: Funding through UAB TL1 award.

4129

Understanding Treatment Preferences for Hodgkin Lymphoma (HL) among Physicians, Patients and Caregivers

Anita J Kumar[1], Rachel Murphy-Banks[2], John B Wong[2], and Susan K Parsons[2]
[1]Tufts University; [2]Tufts Medical Center

OBJECTIVES/GOALS: Although their 5-year survival >90%, young patients with HL face tradeoffs between near-term disease control and risk of treatment-related adverse effects decades later, so we seek to understand what patients and clinicians value in HL treatment decisions. METHODS/STUDY POPULATION: Leveraging our access to large cohorts of physicians, HL patients/survivors, and caregivers, we will use adaptive choice-based conjoint analysis (ACBC) to elicit treatment preferences when offered scenarios that incorporate tradeoffs, e.g., would a patient rather live 20 years with 10% risk of second malignancy or live 40 years with 30% of second malignancy. To reduce survey fatigue, prior choice responses limit subsequent scenarios. Through ACBC, we will identify variations in preferences and the importance of disease outcomes, treatment characteristics, and late effects for HL by respondent type. RESULTS/

ANTICIPATED RESULTS: The goal is a final sample of 200 physicians and 200 patients/caregivers. We will collect demographics from physicians (age, type of physician, years practicing, type of practice, gender, and geography) and patients/caregivers (age at diagnosis, time since treatment, race, gender, smoker, education). We will ask questions about values of disease outcomes, late effects (second cancers, cardiac disease, chronic fatigue and neuropathy), and treatment characteristics (uncertainty of late effects, salvageability). Results will include utilities about participants views on disease-control and late effects. We anticipate participants to value disease control over late effects. DISCUSSION/SIGNIFICANCE OF IMPACT: Our study will elicit how physicians and patients/caregivers value treatment tradeoffs for HL. In an era of multiple treatment choices with varying short- and long-term benefits and harms, identifying values and preferences become critical for patient-centered treatment decisions.

4317

Using Failure Modes and Effects Analysis to Guide Adaptation of an Evidence-Based Parenting Program for Mothers with Substance Use Disorders

Elizabeth Peacock-Chambers[1], Peter Friedmann[2], Nancy Byatt[3], Nancy Suchman[4], and Emily Feinberg[5]
[1]Tufts University; [2]UMMS-Baystate; [3]UMMS; [4]Yale School of Medicine; [5]Boston Medical Center

OBJECTIVES/GOALS: To identify possible failures that could occur in the delivery of an evidence-based parenting program for mothers with substance use disorders (SUD) through existing home-visiting services, and to develop solutions to the most significant failures. METHODS/STUDY POPULATION: Using failure modes and effects analysis (FMEA) methodology, we conducted two 2-hour advisory panel discussions with 15 people from a variety of disciplines and life experiences related to SUDs. The intervention delivery process included five steps: (1) Recruitment, (2) Screening, (3) Matching, (4) Enrollment in person, and (5) Intervention delivery. Participants collectively determined possible failures, causes, and consequences. Participants then agreed on three scores (Likert Scale 0-10) for the likelihood of occurrence, detection, and severity of the failure, with 10 being the highest likelihood, difficulty detecting, or severity. A risk priority number (RPN) was calculated as the product of the 3 scores (maximum RPN = 1,000). The group then identified possible solutions for failures with higher RPNs. RESULTS/ANTICIPATED RESULTS: For each step in the process we identified the following number of failure nodes and RPN scores: (1) recruitment: 13 failures; RPN = 800, (2) screening: 102 failures; RPN = 10, (3) matching: 4 failures: RPN = 490, (4) enrollment: 6 failures; RPN = 80, (5) delivery: 11 failures; RPN = 80. The most critical failures related to recruitment and were perceived as being caused by potential development of mistrust in the community. Participants strongly encouraged the use of "strengths-based language," clear referral plans for mothers that did not qualify, and inclusion of mothers that did not have custody of their children. These findings resulted in changes to the screening script, enrollment procedures, and inclusion criterial for the program. DISCUSSION/SIGNIFICANCE OF IMPACT: FMEA methodology was particularly effective in identifying possible failures for the integration of an

evidence-based parenting program into existing home-visiting services as they related to the psychological safety of mothers with SUDs. The process resulted in direct changes to procedures for the anticipated program integration and study.

4276

Validation of Ototoxicity Prediction Model for Patients with Head and Neck Cancer

Brian Deutsch[1], Dorina Kallogjeri, and Jay Piccirillo[1]
[1]Washington University in St. Louis, Institute of Clinical and Translational Sciences

OBJECTIVES/GOALS: To validate the previously developed ototoxicity prediction model for objective (i.e., audiometric-defined) hearing loss from cisplatin-based and radiation treatments in a new cohort of head and neck cancer patients treated from 2018 to 2019. METHODS/STUDY POPULATION: This study will use a cohort of 106 patients undergoing treatment for head and neck cancers at a single institution to temporally validate a model for post-treatment ototoxicity. We are interested in understanding if this model will be able to predict ototoxic risk (calibration) and if this model can differentiate high- and low-risk patients (discrimination). Observed and predicted values for audiometric hearing loss will be calculated and then compared using a calibration curve available in SAS v9.4, while the c-index (area under the receiver-operator curve) will be used to assess discrimination. The implementation of this model will be assessed in a clinical setting. RESULTS/ANTICIPATED RESULTS: The validation cohort is generally similar in age (61 years) and sex-mix (23% female) to the original cohort. However, there seems to be a different case-mix the types of treatments with more patients receiving cisplatin overall (59% vs. 43%), but fewer getting induction and high-dose cisplatin (1% vs. 13%). The original model showed good calibration and fair discrimination in the validation cohort with and area under the curve of 0.700. This concordance statistic suggests possibly-useful discrimination and the calibration curve suggests the model is well-calibrated. DISCUSSION/SIGNIFICANCE OF IMPACT: This project can improve clinical treatment paradigms, enhance patient education, and reduce healthcare costs. Our model allows oncologists to weigh the risks of hearing loss with the benefits of treatment on an individualized level *before* treatment, facilitating informed treatment decision-making.

4397

Virtual Reality Meditation for Acute Post-Operative Pain of Inpatient Adults: Preliminary Results

Nathan J. Dreesmann[1], Hilaire J. Thompson[2], Diana T. Buchanan[2], Hsin Yi (Jean) Tang[2], Sam R. Sharar[3], Stephen C. Rayhill[3], and Thomas A. Furness III[4]
[1]University of Washington; [2]University of Washington, School of Nursing; [3]University of Washington, School of Medicine; [4]University of Washington, College of Engineering

OBJECTIVES/GOALS: This study's goal is to examine the feasibility and acceptability of using VRM to impact the APP of adults in the inpatient setting. Aims include examining the: 1) feasibility of VRM for APP management; 2) acceptability of using VRM for APP managment; and 3) experience of VRM for APP management. METHODS/STUDY POPULATION: To comprehensively examine participants' experience of using VRM for APP, this study will employ a convergent mixed-methods design in which living kidney donors (N = 45) will be recruited to serially use VRM during their hospital stay. Feasibility and acceptability will be evaluated using descriptive and inferential statistics evaluating patient-reported outcome (PRO) measures taken pre-, post- and 1-hour post-VRM, PRO measures extracted from the participant's electronic health record and data on VRM use. Semi-structured interviews will allow formulation of inferences based on participants' experience of VRM for APP management and their insights on content, deployment, and clinical use of VRM. RESULTS/ANTICIPATED RESULTS: This in-process study expects: 1) an adequate sample of participants undergoing living kidney donor surgery who agree to enroll with retention of >90% of participants (Aim 1); 2) participants to report VRM as an acceptable and suitable treatment, feel "present" and interested in the VR environment, and feel comfortable using VRM in the hospital (Aim 2); and 3) to provide insight into participants' experience of VRM for APP, understanding of extended VRM use for APP analgesia, examination of key variables affecting participants' experience of VRM for APP and feedback about VRM procedures and protocol to inform future VRM use for APP management (Aim 3). DISCUSSION/SIGNIFICANCE OF IMPACT: Results of the proposed study will inform future clinical testing and deployment of VRM, guide future use of VRM as an adjunct for inpatient APP management, and provide insight into inpatients' experience of VRM for APP analgesia.