change in TL related to MBSR(BC) participation; however, there was a sustained increase in TA at least six weeks after the conclusion of the intervention. **RESEARCH IMPLICATIONS:** Further investigation of clinical benefits related to increased TA would significantly enhance the application of these findings. **CLINICAL IMPLICATIONS:** Telomerase repairs DNA and thus increased telomerase may reduce the likelihood of cancer recurrence; however, the clinical implications of increased TA have not been thoroughly investigated at this time. **FUNDING:** This work was supported by the USF Established Researcher Grant Award and in part by the National Cancer Institute, Grant Number 1R01CA131080-01A2.

**P2-22**

**Improvements in Subjective and Objective Sleep Quality Due to Mindfulness-Based Stress Reduction for Breast Cancer Survivors**

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**PURPOSE:** The purpose of this study was to determine if participation in a six-week MBSR(BC) program would improve subjective and objective sleep quality in post-treatment breast cancer survivors (BCS). **METHODS:** A R01 trial subset of 79 BCS participants (Stages 0-III) were assessed at baseline and randomized into the MBSR(BC) program (n = 38) or a Usual Care (UC) control group (n = 41). MBSR(BC) participants attended six weekly two-hour classes involving mindfulness and meditation techniques. Sleep quality was measured subjectively using the Pittsburg Sleep Quality Index (PSQI) and objectively with actigraphy using the Actiwatch®-Score (MiniMitter, Bend, OR). Data were collected at baseline, 6, and 12 weeks. ANCOVA was used to analyze changes between groups; Spearman correlations coefficients examined associations between type of practice and sleep quality. **RESULTS:** The mean age was 57 years. The majority (73.4%) were White Non-Hispanic and had Stage I or II breast cancer (68.4%). BCS had undergone a variety of treatment options: mastectomy (57%), radiation (28%), chemotherapy (12.7%), and combination radiation and chemotherapy (29.1%). ANCOVA results trended toward improved subjective sleep quality at six weeks, with lower average PSQI scores in the MBSR(BC) group (–0.18 MBSR(BC) vs. 0.05 UC, p = 0.09). For MBSR(BC) participants, objective sleep quality measurements significantly improved for 1) “time to fall asleep” from baseline to 12 weeks (27.9 minutes MBSR(BC) vs. 43.2 minutes UC, p = 0.04); and 2) from 6–12 weeks sleep efficiency significantly improved for the MBSR(BC) group (78.2% MBSR(BC) vs. 74.6 UC, p = 0.04) along with “fewer wake times” (93.5 MBSR (BC) vs. 118.6 UC, p = 0.01) and “less activity during rest periods” (40.4 MBSR(BC) vs. 60.4 UC, p = 0.01). Spearman correlation coefficients showed no relationship between minutes practiced and sleep quality measures. **CONCLUSIONS:** MBSR(BC) effectively improved objective measures of sleep quality and trended towards improved subjective sleep quality among BCS. **FUNDING:** This work was supported by the National Cancer Institute, Grant Number: 3R01CA131080-02S1.

**P2-23**

**Design and Delivery of a Home-Based Mindfulness-Based Stress Reduction for Breast Cancer Program for Breast Cancer Survivors via an Innovative iPad Approach**

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**PURPOSE:** The purpose of this study was to pilot the delivery of the Home Based Mindfulness-Based Stress Reduction for Breast Cancer (MBSR(BC)) program via a new technological method using an iPad. **METHODS:** The Home Based MBSR(BC) was designed to deliver the weekly 2-hour sessions for a period of 6 weeks and formatted for use on the iPad allowing participants to complete the 6-week intervention at home. MBSR(BC) is a standardized stress-reducing intervention that combines sitting and walking meditation, body scan, and yoga adapted for BC survivors. This study uses a single group pre-post design delivered among female BC patients (stages 0-III) who completed treatment. Data were collected on self-report measures of psychological, physical symptoms, and quality of life at baseline and 6-weeks after program participation. Daily practice was monitored by diaries completed on the iPad. Using Apple’s iBooks Author for iMac, the iPad study was designed and customized with embedded audio and video presentations for each class. Final data analyses and evaluation is in progress. **RESULTS:** Preliminary results show 15 participants were enrolled, 13 completed with 2 lost to follow up, one related medical reasons and other a family emergency. The mean age was 58 years. Of the total 15 enrolled, 1 or 6.7% reported Black Non-Hispanic and, 14 or 93.3% reported White Non-Hispanic. Sixty percent reported having a Mastectomy and 53.3% reported having radiation and chemotherapy as treatment, with 13.3% reported no chemotherapy or radiation. **CONCLUSIONS:** This study
was designed to meet the unmet needs of survivors, and decrease subject burden for those who could not participate in a traditional weekly intervention. The few patients lost to follow-up, indicates it may be a viable mode of delivery. Evaluation is continuing on analyses of outcomes and ease of use. RESEARCH IMPLICATIONS: This study is of high importance for delivering effective interventions to cancer survivors through technology thus decreasing the stress, cost and time burden for traveling to class. Although patients want to enroll in an intervention, they declined study participation due to scheduling or other commitments, such as work. CLINICAL IMPLICATIONS: This method of delivery offers participants flexibility to receive the benefits of Home Based MBSR(BC) without requiring attendance to regularly scheduled intervention sessions. FUNDING: This work was supported by the University of South Florida (USF) Research Incentive Award.

P2-24
Genetic Variations Moderate Mindfulness-Based Stress Reduction for Breast Cancer-Based Reduction in Post-Chemotherapy Cognitive Impairment
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PURPOSE: Many breast cancer survivors suffer cognitive impairment (CI) during and after chemotherapy, which may persist up to 10 years. The purpose of this study was to investigate whether genotype may moderate the level of benefit received by Mindfulness Based Stress Reduction for Breast Cancer (MBSR(BC)) treatment. METHODS: Cognitive function of 33 MBSR(BC) participants with stages 0-III BC were assessed at baseline and after the MBSR(BC) program using the Measurement of Everyday Cognition (ECog). MBSR(BC) involved six weekly two-hour classes of mindfulness and meditation techniques. Data were collected at baseline, 6 weeks, and 12 weeks. DNA samples from participants were screened for the presence of 10 SNPs in genes involved with cognitive function: ANKK1 (rs1800497), APOE (rs429358), BDNF (rs6265), COMT (rs4680), DRD2 (rs6277), HTR2A (rs6314, rs4941573), MTHFR (rs1801133) and SLC6A4 (rs16965628) by TaqMan assay using the ABI Prism 7900HT sequence detection system (Applied Biosystems), according to the manufacturer’s instructions. Wilcoxon rank-sum tests were used to compare increased cognitive function following MBSR(BC) between different genotypes. RESULTS: The mean age was 61 years. The majority (73%) was White Non-Hispanic, 69% had Stage I or II BC. Forty-six percent of participants had undergone a mastectomy; other treatments included radiation (69%), chemotherapy (33%), with some participants having received both radiation and chemotherapy (30%). Significant improvement on five out of eight ECog scales were observed in recessive model (GG vs. AA or AG) of both SNPs in the ANKK1 (rs1800497) and SLC6A4 (rs16965628) (p < 0.05). These differences also were clinically meaningful, with three out of eight mean differences greater than 0.5 SD for the ANKK1 SNP and seven out of eight differences greater than 0.5 SD for the SLC6A4 SNP. CONCLUSIONS: Benefit by MBSR(BC) on cognitive function may be contingent on individual’s genetic background. RESEARCH IMPLICATIONS: These results could be used to determine the impact of genetic profile on CI after chemotherapy and may be applied in determining the efficacy of cognitive improvement interventions for the individual patient. CLINICAL IMPLICATIONS: Integration of genotype analysis as a predictor of intervention efficacy may help tailor individualized treatment plans for patients. FUNDING: This work was supported by the University of South Florida (USF) Research Incentive Award and the USF Established Researcher Grant Award.

P2-25
Examining Common Process Themes in Advanced Cancer Patient Counseling Groups
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PURPOSE: Past research has highlighted the unique content of terminally ill cancer patients in psychotherapy groups. Identifying common themes and eliciting feedback from patients regarding their experience will allow clinicians to gain a deeper understanding of the needs of advanced cancer patients participating in group programs. METHODS: As part of a randomized controlled trial, patients with advanced cancer (Stage III/IV; n = 253) received 8 group sessions (1.5 hour weekly sessions) of either Supportive (SGP, n = 121) or Meaning-Centered Psychotherapy (MCGP, n = 132). Patients completed the Post-Intervention Questionnaire (PIQ) in the assessment after the final session (n = 125). Developed by the investigators, this faced-valid questionnaire assessed for a patient’s group preferences, adherence, and highlighted qualitative data on aspects of the group patients found to be most and least helpful. A content analysis conducted of the qualitative questions on the PIQ revealed common themes in the responses. RESULTS: Patients in both groups reported the group was most helpful in making them feel less alone and giving them a place to share experiences and express feelings. Interestingly, additional themes varied slightly between the two arms, with MCGP patients identifying existential program specific content to be helpful, and SGP patients citing coping with their