

AYA ONCOLOGY INTERVENTION ARTICLE SUMMARIES

Sansom-Daly, UM, Wakefield, CE, Bryant, RA, Patterson, P, Anazodo, A, Butow, P, Sawyer, SM, McGill, BC, Evans, HE, Cohn, RJ & Recapture Life Working Party. (2019). Feasibility, acceptability, and safety of the Recapture Life videoconferencing intervention for adolescent and young adult cancer survivors. *Psycho-oncology*, 28(2), 284-292. doi:10.1002/pon.4938

AYA cancer survivors (N=61) participated in a RCT that assessed the feasibility and acceptability of the group-based online CBT intervention called Recapture Life. Recapture Life is a psychologist-led online intervention that is comprised of 3-5 AYA cancer survivors and focuses on coping skills to adjust to all aspects of life after cancer, which was compared to a peer support group and a 12-week waitlist. Overall, the study found that the Recapture Life program was acceptable, feasible, and psychologically safe. However, there were some issues with attrition (47% missing data) and frequent difficulties surrounding technology, although the authors reported that the technology issues did not significantly impact participation. Future research investigating online interventions, will help elucidate the extent to which such programs positively impact psychosocial functioning of AYA cancer survivors.

Casillas, J, Goyal, A, Bryman, J, Alquaddoomi, F, Ganz, PA, Lidington, E, Macadangdang, J & Estrin, D. (2017). Development of a text messaging system to improve receipt of survivorship care in adolescent and young adult survivors of childhood cancer. *Journal of cancer survivorship: research and practice*, 11(4), 505-516. doi:10.1007/s11764-017-0609-0

The study is a three-stage cross-sectional qualitative pilot study that developed a text messaging system to facilitate receipt of survivorship care that included sending programmed screening reminders and community resource suggestions. Overall, participants found the messaging system to be acceptable and found the screening reminders, community resource suggestions, and messages prompting feedback regarding the reminders and resource suggestions helpful. The survivors in the study highlighted the overwhelming nature of the traditional list of screen suggestions received at appointments. They expressed benefit from the text reminders to help simplify these lists and preferred that reminders provided concise information about the screening and contact information to set up an appointment. The authors suggest, via recommendations from participants, that a similar text messaging system could be used to deliver other cancer-related information, such as diagnosis, treatment, and risks of late effects from the survivorship care plan and be used to form AYA survivor social networks.

Bradford, NK & Chan, RJ. (2017). Health promotion and psychological interventions for adolescent and young adult cancer survivors: A systematic literature review. *Cancer treatment reviews*, 55, 57-70. doi:10.1016/j.ctrv.2017.02.011

This systematic review included seventeen studies (n=2314 total participants) that involved psychological and health promotion interventions for AYA cancer survivors; the majority (n=15) included childhood cancer survivors and two studies recruited survivors

diagnosed in young adulthood. Studies that specifically included psychological and/or physical activity interventions generally had greater success compared to those that included more general health promotion. Methodology varied widely, including implementation of an intervention via telephone, internet, telephone with workbook, group sessions with peers, and mailed guidebooks with worksheets. Methodological weaknesses across studies were present and although there were positive effects with 11 of the 17 studies, these methodological weaknesses significantly weaken the results. Studies utilizing face-to-face techniques or Facebook were the most effective, while internet-based interventions saw less robust positive results. The review highlights the need for larger and more methodologically sound studies (e.g., RCTs) in this population.

Richter, D, Koehler, M, Friedrich, M, Hilgendorf, I, Mehnert, A, WeiBflog, G. (2015). Psychosocial interventions for adolescents and young adult cancer patients: A systematic review and meta-analysis. *Critical Reviews in Oncology/Hematology*, 95, 370-386. doi:10.1016/j.critrevonc.2015.04.003

This systematic review examined 12 studies from 2007-2014 that assessed interventions aimed to improve mental health for AYA cancer patients. Participants ranged in age from 11-45 and included individual and group interventions. Nearly all studies had difficulty with patient recruitment. The authors highlight the difficulty in determining significant effects of interventions due to small sample sizes, lack of control groups, and less rigorous methodology. This article highlights the need for more evidence-based, age-appropriate interventions for AYAs in the field and more randomized interventions with larger sample sizes and narrower age ranges.

Phillips, C & Davis, L. (2015). Psychosocial interventions for adolescents and young adults with cancer. *Seminars in Oncology Nursing*, 31(3), 242-250. doi: 10.1016/j.soncn.2015.05.004

This systematic review identified only 5 studies (age ranges 9-20) from 2008-2014 that examined psychosocial interventions for AYAs with cancer. The most common interventions included behavioral modification for active/effective coping, self-efficacy, and control. Four of the five studies reported mixed findings across the outcome variables with one that demonstrated positive, significant findings. All measured quality of life as a main outcome variable and there was a wide range of session length, facilitator qualifications, and number of participants. Though the articles reviewed did have some strengths including generally larger sample sizes than previous studies, majority RCTs, greater ethnic diversity, and good feasibility during active treatment, the authors noted the need for continued early development and evaluation of age-appropriate psychosocial interventions for AYAs with cancer.

Lyon, ME, Jacobs, S, Briggs, L, Cheng, YI & Wang, J. (2014). A longitudinal, randomized, controlled trial of advance care planning for teens with cancer: Anxiety, depression, quality of life, advance directives, spirituality. *The Journal of adolescent health*, 54(6), 710-717. doi:10.1016/j.jadohealth.2013.10.206

Feasibility and acceptability of the Family-Centered Advance Care Planning for Teens with Cancer (FACE-TC) was evaluated among 30 adolescents (ages 14-20) with cancer

and family dyads, and compared to treatment as usual (receipt of advanced care planning brochure),. Families randomized to the FACE-TC came to all sessions, 93% completed post-intervention follow-up, and the majority of adolescents and family members thought the sessions were worthwhile. Further, adolescent anxiety and depression scores significantly dropped from baseline to 3-month follow-up for teens in the FACE-TC group compared to no significant drop in the control group. All adolescents in the FACE-TC group completed the Five Wishes advance directive with their families compared to no completion in the TAU group. Future directions include replicating this study in a larger, multisite, randomized controlled trial.

Masterton, KJ & Tariman, JD. (2016). Effective Transitional Therapy for Adolescent and Young Adult Patients With Cancer: An Integrative Literature Review. *Clinical journal of oncology nursing*, 20(4), 391-396. doi:10.1188/16.CJON.391-396

The authors examined 22 studies that focused on the transitions of AYA from active cancer treatment to survivorship, with four of the 22 studies specifically examining empirical interventions. The data from the four empirical studies (dynamic group therapy, online CBT, online forum, and a cancer retreat) found some positive impact after completion of the intervention, most often including decreased distress and feelings of isolation. The authors highlight that the varied structure of these interventions as well as the mixed results suggest that there is single best therapy for AYAs transitioning from active cancer therapy to off-therapy, and eventually survivorship; rather, interventions should be tailored to the individual experiences and preparation for transition should begin at diagnosis.

Rabin, C, Simpson, N, Morrow, K, & Pinto, B. (2011). Behavioral and Psychosocial program needs of young adult cancer survivors. *Qualitative Health Research*, 21(6), 796-806. doi:10.1177/1049732310380060

AYA cancer survivors (ages 18-39) were interviewed to improve understanding of behavioral and psychosocial interventions that might benefit physical and/or emotional well-being of AYA cancer survivors. All survivors endorsed physical activity and relaxation interventions as being potentially helpful, and several shared that emotional support, cancer-related, and nutrition/weight loss interventions would be helpful as well. Several participants also reported that it was specifically important to participate in programs/interventions with other same-age cancer survivors, have more information on infertility, and they expressed interest and comfort with utilizing internet-based interventions. Importantly, participants also indicated concern about barriers such as limited time, difficulty scheduling, lack of motivation due to existing mental health concerns, lack of awareness of programs, and health-related late effects such as fatigue. The sample population was fairly homogenous (i.e., White and female, several participants had a thyroid cancer diagnosis); therefore, similar interviews in more ethnically, gender, and diagnosis diverse populations is recommended.

Rabin, C, Simpson, N, Morrow, K., & Pinto, B. (2013). Intervention format and delivery preferences among young adult cancer survivors. *International Journal of Behavioral Medicine*, 20, 304-310. doi:10.1007/s12529-012-9227-4

The study examined qualitative interviews with 20 AYA cancer survivors (*M* age = 33.5 years) specifically focused on the type of intervention format preferred by young adult cancer survivors. Overarching emergent themes for interventions were the need to focus on how to balance personal needs, work demands, and familial demands, and the important role of social support. Several participants identified that the convenience of online or in print formats is especially appealing. Further, many participants emphasized the importance of interventions building in a social component, as they believed that social support was particularly important to facilitate behavior change. The sample population was homogenous (i.e., White and female, several participants had a thyroid cancer diagnosis); therefore, similar interviews in more ethnically, gender, and diagnosis diverse populations is recommended.

Valle, CG, Tate, DF, Mayer, DK, Allicock, M, & Cai, J. (2013). A randomized trial of a Facebook-based physical activity intervention for young adult cancer survivors. *Journal of Cancer Survivorship*, 7, 355-368. doi:10.1007/s11764-013-0279-5

This RCT assessed the feasibility and preliminary efficacy of a Facebook-based intervention (FITNET) that aimed to increase moderate to vigorous physical activity (n=45) in young adult cancer survivors compared to a Facebook-based self-help comparison condition (n=41). All participants had to have been diagnosed with cancer after 18, have completed cancer treatment, and be between 21-39. The FITNET group demonstrated a significantly greater increase in light physical activity and significantly more minutes spent in overall physical activity compared to the control group. Overall, the FITNET group reported high acceptability of the program, that it was easy to access, and overall enjoyment in participation. The data that this Facebook-based program is acceptable, feasible, and resulted in significant increased physical activity; however, due to the relative homogeneity of the participants (e.g., 91% White and female) this study should be replicated in a larger, more diverse population.

Rosenberg, AR, Bradford, MC, McCauley, E, Curtis, JR, Wolfe, J, Baker, KS & Yi-Frazier, JP. (2018). Promoting resilience in adolescents and young adults with cancer: Results from the PRISM randomized controlled trial. *Cancer*, 124(19), 3909-3917. doi:10.1002/cncr.31666

This phase 2 RCT included AYA (ages 12-25, N = 92) young adults with cancer to examine efficacy of the Promoting Resilience in Stress Management (PRISM) intervention (N = 48) versus treatment as usual (TAU; N = 44). PRISM consists of four one-on-one sessions that focuses on stress management: mindfulness skills, goal setting, planning steps toward goal achievement, and preparing for roadblocks. PRISM participants demonstrated significantly greater patient-reported resilience and cancer-related quality of life and decreased psychological distress compared to the TAU group. Further the PRISM group demonstrated high retention (90%), suggesting a high degree of feasibility. Future studies are needed to examine the duration of PRISM's efficacy as well as strategies for dissemination and implementation.

Donovan E, Martin SR, Seidman LC, Zeltzer LK, Cousineau TM, Payne LA, Trant M, Weiman M, Knoll M, Federman NC. (2019). A Mobile-Based Mindfulness and Social

Support Program for Adolescents and Young Adults With Sarcoma: Development and Pilot Testing. JMIR Mhealth Uhealth 7(3):e10921. Doi: 10.2196/10921

Semistructured interviews were conducted with AYAs (N = 10) diagnosed with sarcoma (active treatment or survivorship), parents (N = 5), and health care providers (N=6) to explore opinions about a mobile-based mindfulness and social support program for AYA sarcoma patients. Participants discussed anxiety about disease reoccurrence, openness to mindfulness-based interventions, and a desire to connect with other patients. The second portion of the study was a pilot intervention (Mindfulness for Resilience in Illness Program and Facebook Social Support Group) and included AYA sarcoma patients (N = 20) and health care providers (N = 6). Participants reported that they enjoyed using the app, would continue to use the app, and would very likely recommend the app to others. Additionally, participants found the Facebook group somewhat helpful, reported that they would recommend this type of online social group to patients and felt that online social support was a crucial but often absent part of their cancer experience. Future studies should utilize this intervention with AYA sarcoma patients in a RCT.

Schwartz, L. A., Psihogios, A. M., Henry-Moss, D., Daniel, L. C., Ver Hoeve, E. S., Velazquez-Martin, B., . . . Szalda, D. (2019). Iterative development of a tailored mHealth intervention for adolescent and young adult survivors of childhood cancer. *Clinical Practice in Pediatric Psychology, 7(1)*, 31-43.

The authors outline the development of a tailored mHealth intervention for AYA cancer survivors that is comprised of a Survivorship Care Plan document, allows for two-way tailored messages for survivors, and Texting Health Resources to Inform, Motivate and Engage (THRIVE). The development and evaluation of the intervention involved three steps: 1) engaging providers and AYA volunteers to assist in development and modification of the intervention, 2) conducting focus groups with AYAs, and 3) pilot testing. The article focuses on the challenges consistent with a technology-based intervention (e.g., syncing to other technologies, perfecting app components), the process the team took to address challenges, and the importance of acceptability and user experience.

Murnane, A, Thompson, K, Mancuso, SG, Lewin, J, & Orme, LM. (2018). Exploring the effect of exercise physiology intervention among adolescent and young adults diagnosed with cancer. *Rehabilitation Oncology, 37*, 55-63. Doi: 10.1097/01.REO.0000000000000134

AYA (ages 15-25 at time of diagnosis, N = 51) diagnosed with cancer (either on-treatment or 2-8 weeks off-treatment) participated in an 8-12 week individualized moderate-intensity exercise program. Participants were prescribed home exercise programs and also participated in at least 1 supervised exercise session per week at the hospital gym. For both patients on-treatment and off-treatment, participation in the individualized exercise program was beneficial. For those on-treatment, they demonstrated a maintenance of functioning, limited treatment-related side effects, and prevention of deconditioning. For

those off-treatment, they demonstrated a return to normal everyday activities and a restore to functional capacity. Without a control group, it is unknown if the participant improvement reflected the normal recovery process; therefore, future studies should investigate use of individualized exercise physical therapy programs in a RCT with a larger and more diverse participant sample.