

Evaluation of the Effectiveness of Technology-based Psychosocial Education and Counseling Program for Adolescent Leukemia Survivors: A Randomised Controlled Trial

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Introduction

Depending on treatment exposure and treatment related to physical late effects, adolescent survivors of leukemia face a risk of anxiety and/or depression, social withdrawal or peer conflict, attention problems, and several developmental issues. Therefore, as with all childhood cancers, adolescent survivors of leukemia should receive life-long survivorship care depending on the expected risks. New approaches such as technology-based interventions need to be developed in follow-up care to provide effective psychosocial support because survivors of childhood leukemia have special needs in the physical, psychological, social, and emotional areas.

Aim and Hypotesis

This RCT study aimed to evaluate the efficacy of the technology-based psychosocial education and counseling program on survivors' quality of life, self-efficacy, and coping skills within the scope of health promotion model.

The hypotheses of the study are as follows:

H1.1 There is a significant difference between the quality of life scores of the intervention and control

H1.2 There is a significant difference between the self-efficacy scores of the intervention and control

H1.3 There is a significant difference between the coping skill scores of the intervention and control

Technology-based Psychosocial Education and Counseling Program

The program was created by pediatric nurse specialists and includes 10-week education and counseling on the web which consists of five modules and 3 months of follow-up.

1) Self-knowledge and Goal Development

2) Communication Skills

3) Coping Skills

4) Problem-Solving Skills

5) Awareness Raising and Health Promotion

**5 modules
in the program**

To increase the motivation of adolescents to continue the program, each module has been supported with an interactive activity and audiovisual tools (videos, animation, posters, etc.). At the same time, mobile messages were sent regularly by the pediatric nurse researcher to reinforce and motivate them to practice recommendations in each module. Following the completion, the general evaluation of the module (discussion about its contributions to the adolescent) was made with adolescents.

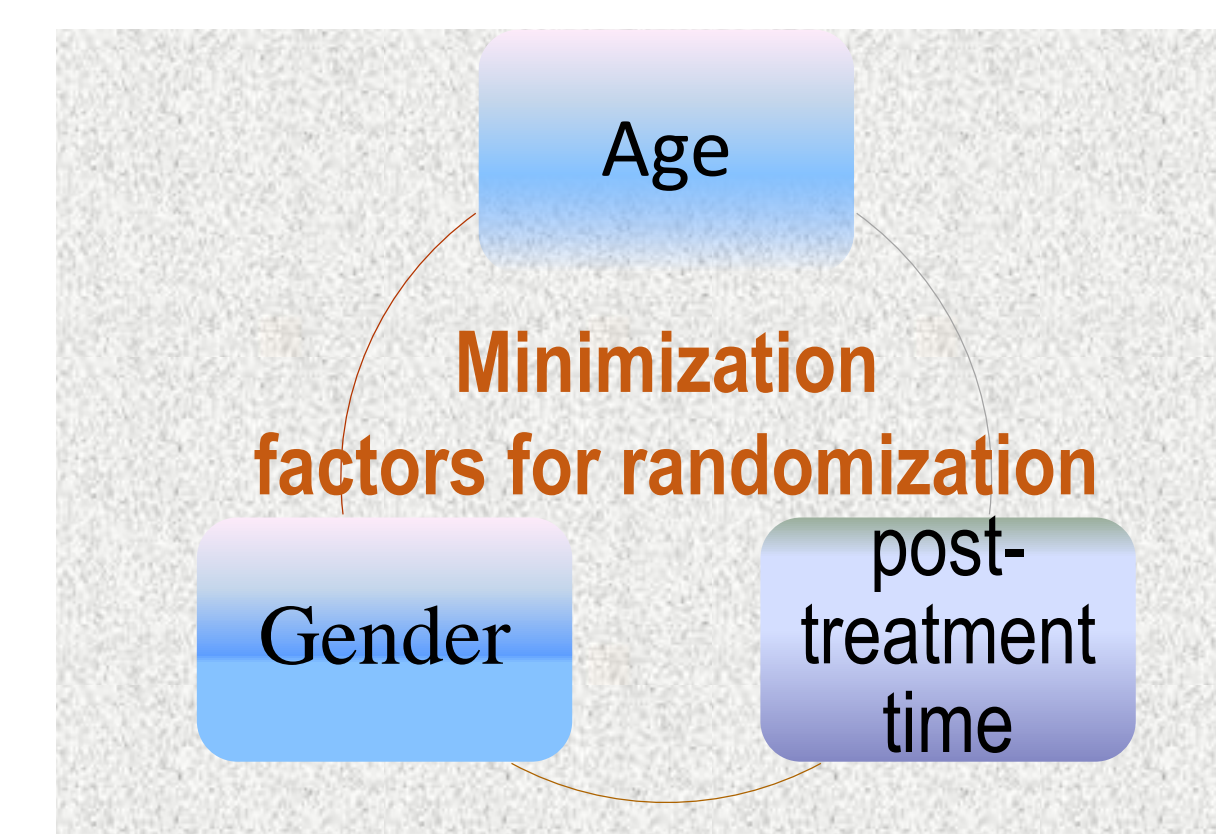
Home page of the Technology-based Program

"Adolescent leukemia survivors journey with gold ribbon"



Methods

The study was conducted with adolescent survivors of leukemia who were between the age of 12-18, have completed treatment at least two years ago, able to use a computer and/or smartphone, able to access the internet and able to speak Turkish. Participants were assigned to intervention (n=24) and control groups (n=31) using stratified randomization with a minimization method.



The study outline conforms to the Consolidated Standards of Reporting Trials (CONSORT) statement guidelines. The intervention group was included in the technology-based intervention (10-week, 5 module program). The routine follow-up care of the control group was continued. Measurements were made at four time-points (at baseline, post-intervention, 1-month post-intervention, and 3-month post-intervention). The Pediatric Quality of Life Inventory™, The Self-Efficacy Questionnaire for Children, The KIDCOPE and Evaluation Questionnaire for Program Effectiveness were used to measurements.

Results

When the differences between the groups in terms of quality of life, self-efficacy and coping skills were examined, the following results were found.

Quality of life	In the intervention group, significant improvements in overall, physical and psychosocial health were apparent at the 4th follow-up the differences were noted between the baseline and 4th follow-up, 2nd and 4th follow-ups, and 3rd and 4th follow-ups for overall and sub-scale scores. The 3-month overall and psychosocial subscale scores of the quality of life of the intervention group were significantly higher than the control group (p<0,05).
Self-efficacy	In the intervention group, survivors' overall self-efficacy scores increased from 3rd follow-up to 4th follow-up and emotional self-efficacy scores increased from the baseline to 4th follow-up and 3rd follow-up to 4th follow-up General self-efficacy was not significantly different in the two groups (p>0,05). The 3-month emotional self-efficacy subscale scores of the intervention group were significantly higher than the control group (p<0,05).
Coping skills	In the intervention group, active coping scores of adolescents were significantly higher and negative coping scores were lower than the control group (p <0.05).

During the program some adolescents received additional counseling about some topics such as; healthy lifestyle, managing emotions, coping with peer bullying, friends-peer relations, self-expression) and setting a specific goal, maintaining goals.

Conclusion

Technology-based psychosocial counseling and education positively affects the quality of life, emotional self-efficacy, and coping skills. H1 and H3 were accepted and H2 was rejected. Adolescent leukemia survivors have satisfied with the program. This program could be integrated into follow-up and used as one of the support methods in providing and maintaining long-term follow-up care by pediatric oncology nurses.

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*The authors declare no conflict of interest