

Self-Determination Focused Acceptance Bibliotherapy (SAB) in Telemedicine on the Symptoms of Depression Among Adolescents

Joseph S* and Guzman R

Department of Psychology, University of Santo Tomas, Philippines

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***Corresponding author:** Sherin Joseph, Department of Psychology, The Graduate School, University of Santo Tomas, Manila, Philippines

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Abstract

Adolescent depression is an area of growing concern worldwide. Depression is a prevalent and severe mental health problem in adolescents. It frequently leads to suicide, school dropout, antisocial behavior, drug abuse, cognitive vulnerability, and severe disability, leading to poor psychological well-being. Self-determination-focused Acceptance Bibliotherapy (SAB) has been shown to reduce the symptoms of depression and improve adolescents' psychological well-being in previous studies. This study recommends that telemedicine adopt the SAB in addressing the symptoms of depression. The SAB was developed and tested efficacious using a sequential exploratory research model and randomized controlled experiment. BDI-II and Ryff's Scale of Psychological Well-being (RSPW) was used to measure the severity of depression and psychological well-being of the experimental and control groups. Statistical analysis using MANOVA on the experimental group's post-test mean scores on depression and PWB revealed a significant difference, suggesting that the SAB is effective in reducing depression and improving psychological well-being in selected adolescents.

Keywords: Adolescents; Depression; Psychological Well-Being; Self-Determination Focused Acceptance Bibliotherapy (SAB); Telemedicine

Abbreviations: SAB: Self-determination-focused Acceptance Bibliotherapy; RSPW: Ryff's Scale of Psychological Well-being; WHO: World Health Organization; ACT: Acceptance and Commitment Therapy; USAID: US Agency for International Development; DIF: Demographic Information Form

Introduction

Depression is a severe mental illness that has a negative impact on social functioning, family connections, and academic achievement in adolescents [1]. Adolescence is a transitional stage in life when a person goes through physical, psychological, and developmental changes from puberty to adulthood [2]. The World Health Organization revealed that various physiological, neurological, psychological, and social changes could occur in an individual's life during adolescence. This period is particularly vulnerable due to potential changes in schooling and social life [3]. Adolescents represent approximately 21% of the Indian population, and 40 percent of adolescents suffer from depression [4]. A recent study conducted by Sinha and his colleagues [5] found that the prevalence of depression has been alarmingly high in India and has become one of the most severe national illnesses. Studies have shown that depression has a significant negative impact on the psychological well-being of adolescents. In other words, an increase in depression contributed to a decrease in psychological well-being [6]. A study conducted by Pervin & Ferdowshi [7] found that depression affects an individual's motivational factors, including a lack of desire to continue the tasks, loss of ambition, spontaneity, personal life, family life, work, and social life. It also affects health, such as sleeping and eating habits. Grant and his colleagues [8] revealed that having more severe depressive symptoms is linked to a lower sense of well-being. In particular, the study found that individuals who reported lower baseline well-being showed substantial increases in symptom scores of depression over time. A research study suggested that it is essential

to integrate culturally relevant psychological interventions into preventing and treating depression in school-aged adolescents [9]

Theory of Self-determination [10], addressing basic psychological needs enhanced motivation, which addressed the three universally important and psychological aspects of autonomy, competence, and relatedness. Adolescents' well-being improved as their motivation strengthened. The inability to meet psychological needs adequately often reduces motivation and increases the risk of depression [11]. Acceptance and Commitment Therapy (ACT) is a model that encourages flexibility and improves the skills needed to effectively reduce depression symptoms and enhance adolescents' PWB [12]. Bibliotherapy incorporates CBT's basic concepts and includes exercises to assist readers in resolving unpleasant emotions [13]. It provides relevant and practical solutions for preventing and decreasing the participants' depressive moods [14]. The "Self-determination focused Acceptance Bibliotherapy" (SAB) was developed to fill the gaps in the ongoing research for

an effective intervention program to address depression. Its main goals were to reduce the symptoms of depression and improve the psychological well-being of selected adolescents in India. Experts evaluated the eight-module intervention program (Table 1), which was efficacious and well received by participants in the pilot and experimental studies. This proved that the modules created for the program that combined the three theories, Self-determination, theory, Acceptance, and Commitment Therapy model and Bibliotherapy, were reliable, feasible, and effective when tested on a large group of adolescents at risk of depression. The following are some of the hypotheses that were established during its development and efficacy testing:

- i. Negative cognition affects psychological well-being,
- ii. Depression predicts poor psychological well-being, and
- iii. The SAB as an intervention program is effective in improving psychological well-being.

Table 1: SAB modules and objectives.

Module	Objectives
Module 1	Determining to Know Each Other
Introductory session	Introduce SAB to participants; establish rapport with them; explore expectations; provide information regarding the importance of the SAB program, attend every session, structure, and norms; educate participants about depression and its consequences; introduce the techniques to improve their psychological well-being.
Module 2	Identify the Irrational Thoughts
Determining to reframe dysfunctional thoughts	To assist the participants in attaining mastery over their dysfunctional thoughts through cognitive diffusion such as willingness to let go of the attachment and identification with thoughts; to teach the participants about how thought affects their mood. To explore and modify the positive cognition and help them transform destructive self-talk into positive talk; help them bring their attention to the moment and allow distracting thoughts to move away; to restructure the distressing thoughts with positive activities and ideas.
Module 3	Learning to Identify the Emotions
Determining to accept one's own emotions	Recognize and become aware of the depressive symptoms; to relieve or outlet their repressed emotions through reading literature; to monitor the specifics of their responses, to identify their emotional expression, and increase the self-acceptance; focus on their unpleasant feelings, become aware of their emotional states and recognize negative emotions.
Module 4	Target on My Strengths
Determining to promote self-acceptance	Build positive self-esteem; become self-reliant, and make self-decisions based on set individual values. Manage the opportunities for fullness and be independent to make decisions. Make their feelings of self-worth and self-like brightening up their life. Practice positive self-perception and boost self-esteem
Module 5	Empower with Choices
Determining to enhance self-autonomy	Participants were able to learn how to make decisions without relying on others and be independent; they were able to evaluate self by personal standards includes providing choices, meaningful rationales for learning activities, granting participants feelings, and lessening stress and control; to giving emotional support, a sense of hope, and emotional understanding; participants able to be independent and enhancing autonomy includes providing choice and meaningful rationales for learning activities.
Module 6	New Encounter with Relationships
Determining to build competence and relatedness	Participants are able to accept more responsibility for their learning, provide freedom, and identify what they want. Includes providing structured guidance, provide optimal challenges and positive and constructive feedback; participants become more insightful to clear about self-acceptance capacity and to build a positive relationship with others; promote and nurture effective and active teacher learning communities; able to approach problems optimistically and objectively, to learn interpersonal skills; to help the participants to establish and maintain healthy satisfying relationships.
Module 7	Emerging Confidence and Positive Vibes
Determining to foster personal insight	To enhance self-understanding by valuing personhood and increasing self-perceptions knowledge and accuracy; to help the participant to recognize and find new solutions for the problems they are confronting; to help them focus on what is good, speak encouraging words to themselves, and be mindful of how they carry themselves; participants were ready to enrich and empower within them; able to understand their inner strength; participants able to restructure the distressing thoughts with positive activities and thoughts; to identify the strengths and uniqueness of the respondents.

Module 8	Dare to be Strong
Determining to succeed	Participants are capable of persevering in the face of adversity to achieve a challenging goal; to enable participants to form a clear vision and strong determination occurs before achieving their goals and motivate behavior that will assist them in achieving their goal. At the end of the session, participants made a prosperous and hopeful thought in their minds.

It has a long-term impact in lowering the level of depression and enhancing adolescents' psychological well-being. The SAB, an eight-module intervention program designed to be completed in six weeks (three hours per module, twice weekly), was then put through an experimental study to see how effectively the modules performed.

Process of Developing SAB

Researchers looked at existing related literature and the current situation to analyze the issue's relevance, effect, and potential. Following the discovery of a link between depression and psychological well-being and a thorough analysis of its dimensions, the SAB intervention program was created by combining the concepts of three cognitive theoretical models: Self-determination theory, Acceptance, and commitment therapy model and bibliotherapy. The intervention aims to reduce adolescent depressive symptoms and improve their psychological well-being to function productively at home, in school, and in other aspects of their lives. Self-determination theory indicates that for a person to feel an enduring sense of integrity and well-being. Competence, autonomy, and relatedness are the basic needs and to be fulfilled across the individual's life span [15]. Self-determination also predicts numerous positive outcomes, including reduced depression. Acceptance Commitment Therapy highlighted unique learning skills, such as decreasing experiential avoidance, increasing cognitive defusion, acceptance, and interaction with the present moment [16]. The acceptance and commitment therapy model will aim to improve adolescents' behavioral capacity by modifying how they respond to distressing symptoms by slowly increasing their ability to open and stay present to thoughts, feelings, and body sensations [17]. Bibliotherapy encourages and empowers the patient as they go through the book and help explain any questions or concerns that the patient might have [18]. It uses a self-help book to direct and inspire people to challenge unhelpful thoughts and behaviors, resulting in better self-management rather than simple information being given [19].

With SAB's use, the researcher attempts to explain the theories that described the possible approaches and skills such as enhancing positive attitudes, beliefs, and feelings, being aware of their recent experiences, recognizing their present thought, reducing stress-related problems. This can make them happy and accept the reality of life. Self-determination-focused Acceptance Bibliotherapy (SAB) was developed to enhance positive mental health, positive emotions, and character development that predicts well-being. The intervention program focuses on the optimal functioning and well-being of adolescents. Thus, the integration of Self-determination theory, the Acceptance and Commitment Therapy model, and

Bibliotherapy became instrumental in reducing depression and improving adolescents' psychological well-being. A pilot study was conducted, with the results indicating that an experimental investigation should be conducted. The depression and PWB measures' mean scores and standard deviation values, pre-test vs. post-test, indicated a decrease in depression and a rise in PWB, signifying a reduction in depressive symptoms and increased psychological well-being after the feasibility study. The 'Wilcoxon signed-rank test was employed to examine the adolescents' pre and post-test results for statistical analysis. The results revealed a substantial difference between the pre-test and post-test depression levels and PWB.

Furthermore, feedback from participants during the pilot test phase was gathered in order to improve SAB before this experimental study was conducted. The program was well appreciated by the participants, who expressed satisfaction and appreciation. They said they had fewer symptoms from depression, increased attention, connect with others more and looked forward to their future goals. The SAB was assessed for inter-rater reliability and content validity by six mental health experts who were not part of the focus group discussions. The expert's employed standard evaluation guidelines, which were an adapted version of a technique created and used by the US Agency for International Development (USAID). After a proper evaluation, the experts unanimously assigned the program an 'A' grade, indicating that the SAB is sound, relevant, and feasible. The SAB was shown to be consistent and reliable in an interrater reliability test of expert ratings. Inter-rater consistency was calculated as a coefficient of 0.78.

The experts' validation assured that the program is reliable and has a high likelihood of being effective in bringing about positive changes. Prior to the start of the experimental validation, expert comments and recommendations on technical and conceptual elements were taken into account when constructing the program structure. The experts recommended reducing the time spent on each module from three and a half to three hours to keep the momentum going and prevent the participants from becoming tired from too much exercise. The study's findings revealed that the intervention program's modules are reliable, practicable, and effective when tested on a larger group of adolescents at risk of depressive symptoms. The field of telemedicine was established in the 1960's with the merging of advances in information technology, electronic communications technology, telecommunications, computers, and mobile technology with medicine. With the rise of new health issues that necessitate fast diagnosis and treatment, the internet facility now plays an essential role in communication and providing these services to patients in real-time.

Methods

Design and participants

To determine the efficacy of the intervention program, a fundamental experimental research approach with two independent groups as subjects were adapted. Prior approval was obtained from the UST Graduate School Ethical Review Committee to support the observance of ethical standards during the conduct of this study. Of those who met the inclusion criteria, forty (40) adolescents were chosen. Each of the experimental and control groups received twenty (20) adolescents at random. The participants were selected based on the following criteria for inclusion:

- i. Adolescent students from the southern part of India who is studying in higher secondary schools and has a moderate level of depression (as measured by the BDI-II) and low psychological well-being (as measured by the RSPW);
- ii. Adolescent boys and girls between the ages of 14 and 18;
- iii. Adolescents currently enrolled in schools in the state of Kerala, India;
- iv. Adolescents who are staying/living with biological parents/guardians

Measures

Demographic Information Form/Personal Data Sheet (DIF): The researcher utilized a researcher-made Personal Data Sheet/DIF to compile the following socio-demographic profile of the respondents: age, gender, and education level. The personal data sheet/demographic questionnaire also includes an informed consent question.

Instruments

Beck Depression Instrument II (BDI-II): The Beck Depression Instrument II (BDI-II) is a 21-question multiple-choice self-report inventory designed by Beck to assess the severity of depression. It examines the significant symptoms of depression as defined by the DSM-IV (Rehm, 2010), including sorrow, pessimism, loss of pleasure, guilt, suicidal thoughts, self-dislike, worthlessness, indecisiveness, and physical symptoms tiredness, weight loss, and lack of appetite. Internal consistency for the BDI-II ranges from .73 to .92 and internal consistency with alpha coefficients of .85 and .81 for psychiatric and non-psychiatric populations, respectively [20]. In the general population, 1-10 scores were considered average, 11-16 mild mood disorder scores, 17-20 borderline clinical depression scores, 21-30 moderate depression scores, 31-40 scores indicate severe depression, and scores in excess of 40 extreme depression.

Ryff's Scale of Psychological Well-being (RSPW): The Ryff's Scale of Psychological Well-being (RSPW) contains 42 statements that reflect the six categories of psychological well-being: autonomy, environmental mastery, personal growth, positive interpersonal relationships, life purpose, and self-acceptance (Ryff, 1989). On a scale of 1 to 6, respondents score the statements, with 1 indicating significant disagreement and 6 indicating strong agreement. Higher scores on each scale imply greater happiness in that area (Ryff &

Keyes, 1995). The internal consistency values with co-efficient alpha for each dimension ranged from 0.86 to 0.91, confirming the scale's good reliability [21].

Procedure

Pre-experimental, experimental, and post-experimental data were obtained for this research. Adolescents were chosen from among students who met the inclusion requirements using the purposive sampling technique. Participants were informed of the study's confidentiality and requested to sign an informed permission form, which included their parents/legal guardians, as well as complete the depression and PWB scales. Interviews and focus group discussions were conducted to attain valuable information for this study. The individuals chosen for the experimental phase were divided into experimental and control groups and given an overview of the intervention program SAB before it was implemented. The intervention program SAB was not given to the control group. The program was finished in six weeks, and the control group received the same treatment following the post-test for ethical reasons. The scores before and after the intervention were subjected to statistical analysis for evaluation in the post-experimental phase. Table 2 shows the effect of SAB on subjects utilizing variance analysis in MANOVA. The considerable difference in post-test scores between the experimental and control groups is due to the intervention program's effect, indicating that the SAB effectively reduces depressive symptoms ($p=.001$; $F=596.64$) and enhances adolescents' psychological well-being ($p=.001$; $F=5373.624$). The SAB's efficacy after post-test in lowering the level of depressive symptoms and increasing the psychological well-being of the experimental group was measured using Cohen's d test.

Table 2: MANOVA results from the post-test scores of the experimental and control groups in terms of BDI-II and PWB.

Variables	Experimental		Control			
	Mean	SD	Mean	SD	F-value	P-value
BDI-II	11.2	1.4	23.2	1.6	596.64	0.001
PWB	132.7	5.22	78.11	4.74	5373.624	0.001
AUTO	23.5	1.14	13.5	1.18	730.769	0.001
ENV	22.35	0.67	13	1.27	832.056	0.001
PG	20.75	1.29	13	1.16	490.642	0.001
PR	22.9	1.11	13.05	0.05	1060.965	0.001
PL	22.85	0.81	13.11	0.91	1291.368	0.001
SA	20.35	1.22	12.45	1.05	479.107	0.001

Source: SD: Standard Deviation; BDI-II: Beck's Depression Inventory-II; PWB: Psychological Well-being; PR: Positive Relations; AU: Autonomy; EM: Environmental Mastery; PG: Personal Growth; PL: Purpose in Life; SA: Self-Acceptance.

Result

The goal of this study was to see if the intervention program would lead to a significant reduction in depression symptoms and an increase in psychological well-being. Interviews and focus group

discussions were conducted with those who completed the need assessment questionnaire and fulfilled the inclusion and exclusion criteria. In semi-structured interviews, 40 adolescents shared their problems, allowing the researcher to better understand the subjective experiences of adolescents who experience depressive symptoms. According to the post-test scores, the study resulted in a significant change in the participants' behavior.

The low score in depression and high score in PWB measures among the adolescents in the experimental group only shows that some symptoms of the disorder have been reduced in the level of depressive behavior and psychological well-being has improved. During the pre-test, it was found that both the experimental and control groups' mean depression scores were high and nearly identical. Both groups' pre-test means scores on PWB measure also reflected to be at almost the same low level. Remarkably, the post-test on mean scores and standard deviation values for the experimental group revealed a significant decrease in depression (Exp: $M=11.2$, $SD=1.4$) and an increase in PWB (Exp: $M=132.7$, $SD=5.22$). During the post-test, the control group's mean scores and standard deviation values for depression and PWB measures remained relatively constant (BDI-II- Ctrl: $M=23.2$, $SD=1.6$) and PWB-Ctrl: $M=78.11$, $SD=4.74$) is at the time of the pre-test. The overall result of the MANOVA test on the difference between the experimental and control groups' mean scores and standard deviation values during the post-test indicates significant differences.

Conclusion

The researcher created an effective, relevant, and suitable intervention program called Self-determination-focused Acceptance Bibliotherapy to assist adolescents in reducing depressive symptoms, improving psychological well-being, and preventing them from developing a higher level of depression (SAB). When adolescents' depression symptoms are reduced, they become a more productive and better concentrate on their education and everyday activities. Because depressed symptoms and psychological well-being are linked, individuals who are free of depressive symptoms have a sense of well-being within themselves. It had a significant effect on reducing the level of depression and improving the psychological well-being of adolescents. This further affirms that the Self-determination focused Acceptance Bibliotherapy (SAB) program was largely effective for adolescents. This study recommends that Telemedicine adopt the SAB in addressing depression. Telemedicine provides a new perspective in treating adolescents with depressive symptoms, considering the person's well-being, preventing serious consequences in daily life, and its mission to ensure that patients receive the best health care service available in real-time whenever possible. The study's findings indicated substantial differences in both depression symptoms and psychological well-being after implementing the eight modules of SAB. The study's findings revealed that Self-determination-focused Acceptance Bibliotherapy is an effective

intervention tool for reducing depressive symptoms and improving psychological well-being.

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