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Effectiveness of Time Perspective Therapy on Adolescent Suicidal Ideation in the Outbreak of Covid-19

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Abstract

The purpose of this study was to evaluate the effectiveness of time perspective therapy on adolescent suicidal ideation in the outbreak of Covid-19. This research was quasi-experimental (pre-test, post-test and follow-up with control group). The statistical population of this study consisted of all girls' students from 7th to 12th grades in Rasht city, Iran. The statistical sample consisted of 24 adolescents with suicidal ideation who were randomly assigned in experimental and control groups. Beck's Suicidal Ideation Scale (BSIS) was used to collect data. The experimental group received time perspective therapy (Sword et al., 2014) for 8 sessions, one 90-minute session per week. Analysis of variance with repeated measure and Tukey post-hoc tests were used for data analysis. The results showed that time perspective therapy was effective in reducing suicidal ideation of girls' adolescents ($p<0.05$). Based on the results, time perspective therapy has an effect on suicidal ideation and time perspective therapy is suggested to reduce adolescent suicidal ideation in conditions such as covid-19 pandemic.

Keywords: adolescent, Covid-19, suicidal ideation, time perspective therapy.

Introduction

Covid-19, which started in China in December 2019 and rapidly spread throughout the world, in addition to the risk of death from infection, also brings unbearable psychological stress (Cao et al., 2020; Benjamin et al., 2021). The spread of this disease and serious measures to control it, including school closures, have had an impact on the psychological problems of adolescent students (Ma et al., 2021; Daniunaite et al., 2021; Ariaooran & Khezeli, 2021). As an example, the results of a study showed that 70.7% of adolescents aged 12 to 16 years experienced psychological problems during the outbreak of Covid-19 (Daniunaite et al., 2021). Given that adolescence is a risk period for the onset of problems such as suicide (Romanelli et al., 2022; Massing-Schaffer et al., 2022), adolescents may experience suicidal ideation during the outbreak of Covid-19.

Suicidal ideation (SI) is a broad term used to describe a range of thoughts, wishes, and preoccupations with death and suicide (Harmer et al., 2022). Studies have shown that the prevalence of SI in adolescents was between 24% (Romanelli et al., 2022) and 46.3% (Massing-Schaffer et al., 2022). A study showed that during the outbreak of Covid-19, the rate of SI and intentional self-harm among adolescents was 44% and 32%, respectively (Turner et al., 2022). Among adolescents in 59 low-income countries, the rate of SI was 16.9%, suicide plans were 17%, and suicide attempts were reported at 17% (Uddin et al., 2019). In Iran, 20.8% of people reported SI in the outbreak of Covid-19 (Lin et al., 2022). Before covid-19, among Iranian adolescents, the rate of SI was 1.4% (Ziaei et al., 2017). Considering the relationship between SI and suicide attempts (Kino et al., 2022), It is important to examine psychological therapies to reduce SI of adolescents in the outbreak of Covid-19.

One of the psychological therapies to which the attention of psychologists has increased in recent years is the time perspective therapy; From the perspective of Zimbardo and Boyd (1999; cited in Borisenkov et al., 2022), time perspective is "a personal attitude that each person has towards time; In other words, it is the process by which the continuous flow of existence is placed into temporal categories that help order, coherence, and give meaning to human life. Time perspective therapy focuses on people's perceptions of the past, present, and future (Sword et al., 2014); This therapy is a time-based approach and offers 5-time perspectives that focus on people's perception of the past, present, and future: positive past, negative past, present hedonistic, present fatalistic, and future (Mirzania, Firoozi, & Saberi, 2021). According to this therapy, when a person is oriented from the negative past and negative present to a positive present and a positive future, his psychological problems, including anxiety and depression, are reduced; Therefore, people who receive this therapy recognize negative self-talk and create time balance in themselves by focusing on the positive aspects of past, present, and future events (McKay et al., 2019). This therapy helps to solve psychological problems by weakening negative attitudes towards the past and present fatalistic, improving positive past, present hedonistic, and future and creating a balanced time (Boniwell, Osin, & Sircova, 2014).

Until this research, only one research has been conducted on the effectiveness of time perspective therapy on adolescent SI; the results of that research conducted in Spain showed that time perspective therapy was effective in reducing SI of adolescents aged 15 to 19 years and its effectiveness was 41% (Oyanadel et al., 2021). In addition, researches

have confirmed the effectiveness of this treatment on adolescent anxiety (Hosseini, Arefi, & Sajjadian, 2019) and depression (Shahraki et al., 2016; Mousavi et al., 2018). Despite the lack of research on the effectiveness of time perspective therapy, the relationship between time perspective dimensions and SI has been investigated in correlation studies; For example, the correlation between positive past orientation and SI was negative (Nikolaeva et al., 2021). It was also shown that negative past orientation among people with high SI and positive past orientation among people without SI was more; In other words, past negative orientation has been associated with SI (Shahnaz et al., 2019). In another study, it was shown that there was a negative relationship between positive past and future orientations with SI, and a positive relationship between negative past orientations and SI (Ariapooran, Rajabi, and Goodarzi, 2016).

Based on the researches of psychopathology, balanced time perspective (Wu et al, 2019) has a significant role in psychological problems, especially SI (Nikolaeva et al., 2021; Shahnaz et al., 2019); Therefore, it can be said that interventions based on time perspective can play a role in reducing adolescent SI. Therefore, considering the increase of psychological problems including SI among adolescents in the outbreak of Covid-19 (Turner et al., 2022), it is important to investigate the effectiveness of psychological therapies, including time perspective therapy, to reduce SI among adolescents. In addition, the results of this research will help therapists who work in the field of psychological problems of children and adolescents; they can use time perspective therapy to reduce psychological problems of adolescents, especially SI during the outbreak of epidemic diseases such as Covid-19. Therefore, the aim of the present study was to investigate the effectiveness of time perspective therapy on adolescent SI during the outbreak of Covid-19. Therefore, the main question of the research was "Is time perspective therapy effective on adolescent SI during the Covid-19 outbreak?"

Methods

The research method was quasi-experimental with a pre-test, post-test, and follow-up (two-month) design and a control group. The statistical population of this research was consisted of female students from 7th to 12th grades of Rasht city in 2020. Through school counselors, 71 female students were introduced to the researchers as students with problems and possible SI. After completing the Beck SI scale, 42 people were diagnosed with SI with scores of 6 to 38; after interviewing these adolescents, 29 girls were diagnosed with SI. Among them, 26 people agreed to participate in the intervention sessions and were randomly assigned to experimental and control groups. Among the adolescents in the experimental group, 2 people did not participate in the sessions consecutively and were excluded from the final analysis. Therefore, the final sample included 22 adolescents' girls (11 girls in each group).

inclusion criteria included scoring 6 to 38 on the Beck SI scale, presence of SI based on interview, not having a chronic physical-psychological disease; exclusion criteria included non-agreement to participate in the research, non-participation in treatment sessions continuously, lack of desire and motivation, failure to do homework, and contracting Covid-19 during intervention meetings. All parents of adolescents and

adolescents signed an informed consent form to participate in the study. A special code was used for each person to keep the information confidential. They were assured that their data is confidential and will not be given to teachers and school manager. Also, the adolescents participating in the research were told that they can withdraw from the research whenever they want.

Instrument

Suicidal Ideation scale: This scale is a 19-item self-assessment tool that was developed by Beck et al., (1979) in order to reveal and measure attitude, behavior and planning to commit suicide. The method of answering to each item is from 0 to 2. The total score of a person is calculated based on the sum of scores, which ranges from 0 to 38. The first 5 questions of this questionnaire are screening tests and the answers to these questions indicate the desire or unwillingness to commit active or passive suicide. The interpretation of the overall score is that a score of 0 to 5 indicates the absence of SI, 6-19 having SI, and 20-38 being ready to commit suicide. Cronbach's alpha coefficient of this scale was 0.89 (Beck et al., 1979). In Iran, the Cronbach's alpha coefficient of this scale was 0.84 (Hakim Shooshtari et al., 2016) and 0.95; also, the correlation between this scale and the mental health questionnaire has been reported as 0.76 (Anisi, Majdian, & Mirzamani, 2010).

Intervention: For the experimental group, time perspective therapy (Seward et al., 2014) was implemented. This therapy was performed by a therapist with a Ph.D in psychology (author 1). The steps of this treatment were performed in eight 1.5h sessions that description is given in Table 1.

Table 1. Time perspective therapy sessions

session 1	Introduction, role of members and pre-test.
Session 2	Past events, adolescent familiarity with the time perspective, awareness of the time paradox view
Session 3	The events of the outbreak of Covid-19, awareness of the time paradox view
Session 4	Predicted future events, awareness of the time paradox view
Session 5	Good and pleasant memories of the past, practice replacing the negative past with the positive past
Session 6	Determining the hedonistic situations of the present time, enjoying the time and activities of the present time, avoiding a negative view of the present time
Session 7	Positive memories and their positive consequences, planning for the future, deriving a positive future from a positive past and a pleasurable present
Session 8	Summary of sessions, post-test

Procedure

After the researcher spoke on the phone with the counselors of the girls' schools, the school counselors introduced to the researcher people who, in their opinion, had SI; after the interview, the eligible people to participate in the sessions were determined and they were invited to participate in the time perspective group therapy sessions. Then, adolescents' girls who met the inclusion criteria were replaced in the experimental and control groups. After completing the treatment sessions, the data were analyzed using analysis of variance with repeated measure and Tukey's post-hoc tests. After completing the time perspective therapy sessions, time perspective therapy was also implemented for the control group in six sessions.

Results

The mean age of the experimental group was 15.11±0.941 and the control group was 15.34±1.02. In the experimental group, 1 person (9.09%) was in the seventh grade, 2 people (18.18%) were in the eighth grade, 3 people (27.27%) were in the ninth grade, 1 person (9.09%) was in the tenth grade, 2 people (18.1%) 18) were in the eleventh grade and 2 people (18.18%) were in the twelfth grade. In the control group, 1 person (9.09%) was in seventh grade, 1 person (9.09%) was in eighth grade, 4 people (36.36%) were in ninth grade, 3 people (27.27%) were in tenth grade, 1 person was in (09.09%) eleventh and 1 (9.09%) were twelfth. Table 2 shows the mean (M) and standard deviation (SD)of suicidal thoughts in three groups.

Table 2: M and SD of SI in experimental and control groups

Time	Time perspective		control	
	M	SD	M	SD
Pre-test	9.82	2.27	10.27	2.57
Post-test	6.18	1.61	10.10	2.16
follow-up	6.54	1.21	10.19	2.55

Before performing the analysis of variance with repeated measure, the results of the Box's Test of Equality of Covariance Matrices (F=0.304; p<0.935) indicated that the observed covariance matrices of the dependent variables are equal across groups. The results of the Mauchly's sphericity test (X2=1.69; p>0.428) confirmed that the differences between all possible pairs of within-subject conditions (i.e., levels of the independent variable) are

equal. Also, the results of Levin's test in pre-test (F=0.026; p>0.87), post-test (F=0.931; p>0.35) and follow-up (F=0.122; p>0.73) indicated that the error variance of the dependent variable is equal across groups.

Table 3: the analysis of variance with repeated measure for comparing the SI in experimental and control Groups

Source	Sum of Squares	df	Mean Square	F	p	Partial Eta Squared	Observed Power
Time	31.114	1	31.114	30.29	0.001	0.60	0.99
Group*time	27.841	2	27.841	27.10	0.001	0.57	0.99
Error	20.545	20	1.027				
Group	117.333	2	117.333	8.25	0.009	0.29	0.78
Error	284.485	20	14.244				

According to Table 3, there is a significant difference between the mean of pre-test, post-test and follow-up of dependent variables in the experimental and the control groups. The group*time effect and the group effect were significant. The effect sizes of time, group*time, and group were 0.60, 0.57 and 0.29, respectively. This means that the effectiveness of time perspective therapy on reducing SI has been significant.

Table 4: Tukey post-hoc test for comparing the pre-test, post-test and follow-up of SI in experimental and control Groups

Group	Time	Mean Differences	
		Post-Test	Follow-up
Experimental	Pre-Test	3.64**	3.27**
	Post-Test	-	-0.364
Control	Pre-Test	-0.182	0.091
	Post-Test	-	-0.10

*P<0.05; **P<0.01

According to Table 4, in the post-test and follow-up compared to the pre-test, the mean of SI has decreased in the time perspective therapy group. But in the control group, the difference between the pre-test, post-test and follow-up periods was not significant. Due to the non-significance of the post-test and follow-up, the durability of the therapy effect has been maintained.

Discussion

This aimed to investigate the effectiveness of time perspective therapy on SI of adolescent girls. The results showed that the time perspective therapy was effective in reducing the SI of adolescent's girls; considering the lack of significant difference in the post-test compared to the follow-up, the effectiveness of the treatment was sustained after two months. This result is in consistent with previous findings (Oyanadel et al., 2021) that confirmed the effectiveness of time perspective therapy on reducing SI of adolescents aged 15 to 19 years-old. It also confirmed the previous findings (Nikolaeva et al., 2021; Shahnaz et al., 2019; Ariaporan et al., 2016) that found a significant relationship between time perspective dimensions and SI.

Time perspective therapy emphasizes techniques such as examining the dimensions of past, present, and future time perspectives and makes people change their negative time perspectives towards the past, present, and future to positive perspectives (Sword et al., 2014). Therefore, these techniques help adolescents with SI to change the negative past, deterministic present, and negative future into positive aspects, evaluate negative experiences of the past with a positive view, and have a positive evaluation of their current life, which lead to their positive attitude toward present (Seward et al., 2014). In addition, this treatment causes adolescents to reduce negative predictions about the future and change these predictions with positive ones. In other words, this treatment creates time balance in people (Hosseini et al., 2019) and this causes them to reduce SI.

In other words, it can be argued that the time perspective is likely to make people aware of the negative aspects of their emphasis on the negative past, present, and future (Sword et al., 2014), which makes adolescents have a positive view of their lives and understand the time correctly (Hosseini et al., 2019). Therefore, this positive view makes them accept the negative aspects of their lives (including school closures and lack of social relations) in the outbreak of Covid-19 and focus on solving problems. Therefore, it is likely that the time perspective therapy will help them to have a balanced view of their problems during the outbreak of Covid-19 and the future problems related to this disease. Because it has been shown that this therapy causes people to have a better perception of the present, past and future (Sword et al., 2014) and positively affects people's well-being (Mousavi et al., 2018).

One of the limitations of this research was sample; because adolescent girls participated in our study. Therefore, future researches are suggested to examine the gender as the second independent variable and examine the therapeutic effects of time perspective in

interaction with gender. Another limitation of this research was that the follow-up period was two months; it is better to consider a 6-month follow-up period. Considering these limitations, the results of this research showed that the time perspective therapy had a significant effect in reducing SI of adolescent girls. Therefore, psychological therapists are suggested to use time perspective therapy to reduce SI of adolescent girls. In addition, the training of this therapy is also suggested to school counselors; Because this causes them to learn this therapy and use them in necessary cases to reduce the psychological problems of adolescent students.

Conclusion

Adolescents may experience suicidal Ideation due to the conditions related to the adolescence and the experience of adolescent stress, which has been confirmed in some researches. Also, high prevalence of suicidal ideation has confirmed among adolescents. In this research, the effectiveness of time perspective therapy on adolescent suicidal ideation during the outbreak of Covid-19 has been investigated. The results confirmed the effectiveness of time perspective therapy on adolescent suicidal ideation in the outbreak of covid-19. Therefore, the attention of child and adolescent psychologists and counselors to psychological therapy, including time perspective, can be effective in reducing adolescent suicidal ideation.

Disclosure Statements

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