

The Effects of Positive Thinking Education for Adolescent Girls on Their Conflicts with Their Mothers: A Randomized Controlled Trial

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ABSTRACT

Background: Adolescent–parent conflict (APC) has damaging effects on both adolescents and parents and hence effective strategies for its management are necessary. **Objectives:** The aim of this study was to evaluate the effects of positive thinking (PT) education for adolescent girls on their conflicts with their mothers. **Methods:** This randomized controlled trial was conducted in 2019–2020. Participants were 48 adolescent girls conveniently selected from two high schools in Kashan, Iran, and randomly allocated to a control and an intervention group through block randomization. Participants in the intervention group received PT education in eight 90 min sessions held twice weekly. A demographic questionnaire and the APC questionnaire were used for data collection. Data were analyzed through the Chi-square, Fisher's exact test, independent-sample t-tests, and the repeated measures analysis of variance. **Results:** There was no significant difference between the intervention and the control groups respecting the pretest mean scores of APC frequency (244.250 ± 43.353 vs. 234.042 ± 36.218) and APC intensity (24.665 ± 14.244 vs. 27.220 ± 21.829). However, the mean scores of APC frequency and intensity in the intervention group were significantly less than the control group at the end of the study intervention (155.625 ± 28.740 vs. 240.458 ± 35.234 and 13.248 ± 10.660 vs. 35.670 ± 18.998) and 1 month later (122.708 ± 12.302 vs. 241.958 ± 34.719 and 9.693 ± 7.040 vs. 40.258 ± 19.001) ($P < 0.05$). **Conclusion:** Group PT education significantly reduces APC. Nurses, midwives, and mental health specialists can use PT education to reduce APC and improve the mental health of communities.

KEYWORDS: Adolescence, Conflict, Positive thinking

INTRODUCTION

Adolescence is the period of transition from childhood to adulthood.^[1] It coincides with puberty^[1,2] and hence is associated with major physical,^[2,3] cognitive, behavioral, social,^[2,4] and emotional changes^[1]. Their attempt to develop an adult identity turns adolescence into a difficult and stressful stage in life for both adolescents and their parents and may lead to conflict between them.^[4,5]

Adolescent–parent conflict (APC) is a communication challenge that often arises at the time of change and is the result of differences between adolescents and parents respecting their perceptions, expectations, and understanding of the world.^[1,5] Previous studies reported

that the level of APC was moderate in Shiraz, Iran,^[6] the United States,^[7] and Nigeria,^[8] and high in Zahedan, Iran.^[9] The difference among these studies respecting APC level may be due to the level of parents' restrictions and strictness.^[10] APC is acceptable to some extent. However, frequent, severe, and prolonged APC can be associated with many different destructive consequences

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such as substance and alcohol abuse,^[11] academic failure,^[3] running away from home,^[5] suicide,^[12] depression,^[13] aggression, high-risk behaviors,^[12] and delinquency.^[14] Therefore, psychiatric nurses, midwives, and mental health specialists need to employ primary and secondary prevention measures to reduce APC.

Many strategies have been developed and used to manage APC. Examples of these strategies are communication enhancement,^[15] psychological empowerment of mothers,^[10] reality therapy,^[16] problem-solving training, and anger management.^[9] However, some of these strategies are costly or time-consuming, need the great engagement of parents and families, and may lead to more APC.

Positive thinking (PT) education is a strategy with potentially positive effects on APC. PT is optimistic toward the world, human being, and self-18. Education of PT skills can strengthen interpersonal relationships, promote positive emotions, cognition, perception, and behaviors, and improve well-being.^[17] There are limited studies into the effects of PT on APC. Moreover, the results of the existing studies in this area are contradictory.^[16,18-22] For example, some studies reported that PT education for parents significantly improved the behaviors of both parents and children.^[19,22] However, some studies found that PT interventions were not effective in reducing violence and behavioral problems among adolescents.^[20,21]

The paucity of studies into the effects of PT interventions on APC and their contradictory results highlight the importance of further studies in this area. Moreover, most previous interventional studies in this area were conducted on parents.

Objectives

The aim of this study was to evaluate the effects of PT education for adolescent girls on their conflicts with their mothers.

METHODS

Design, setting, and participants

This randomized controlled trial was conducted from November 2019 to March 2020 using a parallel design. The study population consisted of 12–16-year-old adolescents in high schools of Kashan, Iran. Participants were 48 eligible adolescent girls conveniently selected from Dehkhoda and Al-Zahra high schools, Kashan, Iran. Eligibility criteria were no self-report history of known mental illness, no physical disability, residence in Kashan, Iran, Iranian nationality, conflict with mother determined through a score of 184–368 for the conflict frequency aspects of the APC questionnaire (APCQ),^[23] and living

with parents. Exclusion criteria were voluntary withdrawal from the study, experience of stressful life events (such as significant loss, affliction by serious disease, or acute emotional or academic problems), and absence from at least two sessions of the study intervention. Participants were randomly allocated to a control and an intervention group through block randomization with a block size of four or eight. Six blocks with the size of four and three blocks with the size of eight were defined using the www.sealedenvelope.com website and were used to allocate participants to the groups.

The sample size was calculated with a confidence level of 0.95, a power of 0.90, and the results of a previous study that reported an APC mean of 41.17 ± 19.24 in the intervention group and 59.16 ± 14.27 in the control group.^[9] The output of the sample size calculation formula showed that 19 participants per group were necessary. We increased the sample size to 24 per group to compensate for probable withdrawals from the study.

$$n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 (\sigma_1^2 + \sigma_2^2)}{(\mu_1 - \mu_2)^2}$$

Intervention

Participants in the intervention group received PT education in two 12-person groups. The PT educational program [Table 1] was developed based on the perspective of Seligman *et al.*^[24] and was implemented in eight 90-min sessions held twice weekly by the first author. In each session, the content of the previous session was reviewed, PT skills were taught in 20 min, strategies for the use of PT skills in daily life were discussed in 40 min, and assignments were determined in the past 10 min.^[25] In the eighth session, participants were provided with explanations about follow-up assessment 1 month after the intervention. Participants in the control group received no PT intervention but were provided with PT-related educational booklets after the follow-up assessment. All participants in both groups completed APCQ at the beginning of the first session (T1), at the end of the eighth session (T2), and 4 weeks after the eighth session (T3).

Data collection instruments

The study instruments were a demographic questionnaire and APCQ. The demographic questionnaire had 16 items on participants' age, education level, birth rank, having a close friend, number of close friends, religious beliefs, and number of family children as well as their parents' age and education level.

APCQ has 92 items, each scored for both frequency and intensity of APC. APC frequency is scored

Table 1: Outline of the content of the positive thinking training sessions based on the Seligman protocol

Session	Topic	Brief description	Assignments
First	Establishing initial communication	Establishing initial communication, introductions, and expressing the goals and rules of the sessions. A general discussion of optimism and positive thinking to create mental readiness to reinforce healthy and positive thinking	Writing down one's own strengths
Second	Investigating the factors affecting a healthy life	Investigating the factors (physical, psychological, social, and spiritual) affecting a healthy life, self-esteem and self-respect, and group discussion	Writing down one's own strengths from others' points of view
Third	Cognitive reconstruction	Cognitive reconstruction by replacing irrational thoughts with rational thoughts, group discussion, and complementary activities.	Replacing irrational and negative thoughts with rational and positive thoughts
Fourth	Positive thinking training	Positive thinking training and discovering positive traits, group discussion, and complementary activities	Recording one's sweet experiences in the past week
Fifth	Increasing positive thoughts and soliloquy	Focusing on one's strengths and those of the group members, expressing at least five positive experiences, and talking about them in the group	Identifying at least three negative thoughts and writing down three alternative positive thoughts for them
Sixth	Positive feedback	Based on the activities performed in the previous session, in this session, each person is allowed to tell the other members of the group the positive points that she has identified in them (the list of the positive points uttered about each person is also given to her in writing)	Adding the abilities achieved during the past week to one's list
Seventh	Expressing the relative importance of the strengths	Expressing the relative importance of the strengths raised in the previous stage in the order of their priority and providing evidence that the most important strengths are more reliable	Listing all the positive features that have been identified in oneself so far, mentioning the importance of each
Eighth	Summarizing the expression of emotions	Summarizing previous sessions, getting feedback from group members, and practicing the ability to trust one's own abilities	Determining the time of the posttest, and gestures of gratitude to the members

on a five-point scale from 1 (“Almost never”) to 5 (“Usually”). Therefore, the possible total score of APC frequency is 92–460 with higher scores showing more frequent conflict. APC intensity of each item is scored on a five-point scale from 1 (“Calm”) to 5 (“Angry”). APC intensity of each item is assessed only when the response to its APC frequency is not “Almost never.” As the APC frequency of some items in the present study was “Almost never,” APC intensity scores were converted into the highest possible percentage to facilitate data analysis and make scores comparable. Asadi Younesi *et al.* confirmed the content validity and reliability of APCQ with a Cronbach's alpha of 0.97 for APC frequency and 0.96 for APC intensity.^[23]

Ethical considerations

This study has the approvals of the Institutional Review Board and the Ethics Committee of Kashan University of Medical Sciences, Kashan, Iran (codes: 2797.1.5.29.b and IR. KAUMS.NUHEPM.REC.1398.025, respectively). It was also registered in the Iranian Registry of Clinical Trials (code: IRCT20100211003329N3). The aim of the study was explained to the authorities of the study setting, participants, and their parents. All participants were ensured of data confidentiality, anonymous data reporting, and their right to voluntarily withdraw from the study, and informed consent was obtained from them and their parents.

Data analysis

A statistical analyst who was blind to the study groups analyzed the data using the SPSS software (v. 16.0. SPSS Inc., IBM, USA). The Chi-square, Fisher's exact test, and independent-sample *t*-tests were used for between-group comparisons, and the repeated measures analysis of variance was used for within-group comparisons respecting the mean score of APC frequency and intensity. Data normality was assessed using skewness and kurtosis parameters (± 2), and the level of significance was set at < 0.05 .

RESULTS

Primarily, 139 adolescent girls were assessed for eligibility and 91 adolescents were excluded due to either ineligibility ($n = 87$) or disagreement with participation ($n = 4$). The remaining 48 adolescents were included in the study and allocated to two 24-person groups [Figure 1].

There were no significant differences between the groups regarding participants' demographic characteristics and the pretest mean scores of APC frequency and intensity [$P > 0.05$; Table 2]. However, the interaction of time and group respecting APC frequency was significant [$P < 0.05$; Table 3 and Figure 2]. Within-group comparisons also showed the significant effect of time on the mean score of APC

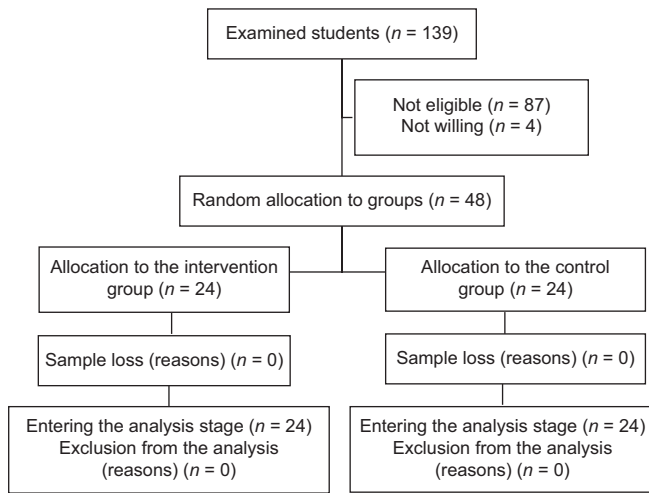


Figure 1: Sampling process

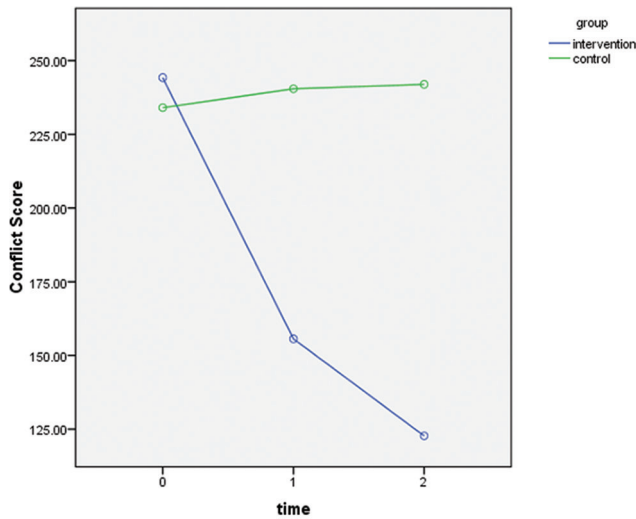


Figure 2: The interaction of time and group positive thinking on the extent of adolescent-parent conflict

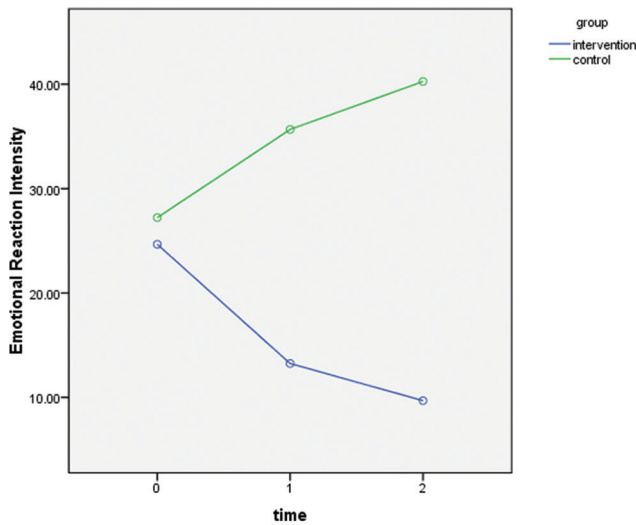


Figure 3: The interaction of time and group positive thinking on the intensity of the adolescent-parent emotional reactions

frequency ($P < 0.05$). *Post hoc* analysis revealed significant differences between T1 and T2, T1 and T3, and T2 and T3 respecting the mean score of APC frequency ($P < 0.01$). The effect of time on the mean score of APC frequency was also significant in the control group ($P < 0.01$). *Post hoc* analysis revealed significant differences between T1 and T2, T1 and T3, and T2 and T3 [$P < 0.01$; Table 3]. The trend of the variations of the mean score of APC frequency across the three measurement time points was downward in the intervention group and upward in the control group.

Groups did not significantly differ from each other respecting the pretest mean score of APC intensity. The interaction of time and group respecting the mean score of APC intensity was significant [$P < 0.05$; Table 4 and Figure 3]. Within-group comparisons also showed that the effect of time on APC intensity was significant in the intervention group ($P < 0.05$). *Post hoc* analysis revealed that the mean score of APC intensity at T1 was significantly less than T2 and T3 in the intervention group ($P < 0.01$) but there was no significant difference between T2 and T3 ($P = 0.078$). The effect of time on APC intensity was also significant in the control group ($P < 0.05$). *Post hoc* analysis showed that the mean score of APC intensity at T1 was significantly more than T2 and T3 ($P < 0.01$) but the difference between T2 and T3 respecting the mean score of APC intensity was not significant [$P = 0.226$; Table 4].

DISCUSSION

The mean score of APC frequency in the intervention group was significantly less than the control group at the end of the intervention and 4 weeks later, implying the significant positive effects of PT education on adolescent girls' APC. This is in agreement with the findings of two previous studies.^[19,22] PT can reduce conflicts between adolescents and their mothers by modifying their attitudes and improving their understanding of the positive aspects of others.^[26] Moreover, PT skills improve self-confidence, respect for others,^[15] and cognitive flexibility^[27] and thereby reduce APC.

Findings also showed the significant effect of time on APC frequency in the intervention group, so that APC frequency significantly decreased across the three measurement time points. This finding implies that the effects of PT education on APC frequency were significant and lasted at least 1 month. The effect of time on APC frequency was also significant in the control group so APC frequency in this group significantly increased across the three measurement time points. The significant increase in the mean score of APC

Table 2: The frequency distribution of the demographic characteristics of the samples by group

Variable	Frequency (%)		P
	Intervention group (n = 24)	Control group (n = 24)	
Grade			
Seventh	12 (50)	5 (20.8)	0.065 ^a
Eighth	6 (25)	6 (25)	
Ninth	6 (25)	13 (54.2)	
Father's education			
Below high school diploma	5 (20.8)	4 (16.7)	0.99 ^b
High school diploma	13 (54.2)	14 (58.3)	
University	6 (25)	6 (25)	
Mother's education			
Below high school diploma	5 (20.8)	6 (25)	0.846 ^a
High school diploma	13 (54.2)	11 (45.8)	
University	6 (25)	7 (29.2)	
Father's occupation			
Self-employed	17 (70.8)	17 (70.8)	0.581 ^b
Corporate job	6 (25)	4 (16.7)	
Agriculture and labor	1 (4.2)	3 (12.5)	
Mother's occupation			
Self-employed	6 (25)	2 (8.3)	0.250 ^b
Homemaker	17 (70.8)	19 (79.2)	
Corporate job	1 (4.2)	3 (12.5)	
Birth order			
First	15 (62.5)	17 (70.8)	0.759 ^b
Middle	4 (16.7)	2 (8.3)	
Last	5 (20.8)	5 (20.8)	
Financial status			
Average	5 (20.8)	4 (16.7)	0.818 ^b
Good	17 (70.8)	6 (66.7)	
Very good	2 (8.3)	4 (16.7)	
Having a close friend			
Yes	20 (83.3)	24 (100)	0.109 ^c
No	4 (16.7)	0	
Number of close friends			
0	4 (16.7)	0	0.073 ^b
1	4 (16.7)	4 (16.7)	
2-3	7 (29.2)	9 (37.5)	
4-5	8 (33.3)	5 (20.8)	
> 5	1 (4.2)	6 (25)	
Religious beliefs			
Disbelief	2 (8.3)	0	0.374 ^b
Poor	4 (16.7)	1 (4.2)	
Moderate	11 (45.8)	14 (58.3)	
Relatively high	6 (25)	7 (29.2)	
Very religious	1 (4.2)	2 (8.3)	
Age (years)	13.710 ± 0.954	14.042 ± 1.042	0.254 ^d
Father's age (years)	46.125 ± 6.810	44.708 ± 6.238	0.456 ^d
Mother's age (years)	41.291 ± 7.333	39.167 ± 6.696	0.300 ^d
Number of children in the family	2.083 ± 1.060	2.125 ± 0.741	0.875 ^d
The extent of conflict at baseline (on a scale of 92-460)	244.250 ± 43.353	234.042 ± 36.218	0.381 ^d

Data presented as n (%) or mean ± SD. ^aChi-square test, ^bChi-square/exact test, ^cFisher's exact test, ^dIndependent t-test. SD: Standard deviation

frequency in the control group can be attributed to the fact that this study was conducted during the COVID-19

pandemic. Some studies reported a significant increase in the frequency of interpersonal conflicts and domestic

Table 3: The extent of conflict in the adolescent girls by the group at the three time points

Extent of conflict score	Group, mean ± SD		Test type and result		
	Control (n = 24)	Intervention (n = 24)	Interaction of time and group ^a		Between group comparison ^b
			Mauchly's test	Greenhouse-Geisser	
At baseline (T ₀)	234.042 ± 36.218	244.250 ± 43.353	$\chi^2 = 31.258$	$F = 184.418$	$P = 0.381$
Four weeks after the beginning of the study (T ₁)	240.458 ± 35.234	155.625 ± 28.740	$P < 0.0001$	$P < 0.0001$	$P < 0.0001$
Eight weeks after the beginning of the study (T ₂)	241.958 ± 34.719	122.708 ± 12.302			$P < 0.0001$
Test type and result					
Within-group comparison^a					
Effect of time	$F = 39.00$	$F = 165.159$			
	$P < 0.0001$	$P < 0.0001$			
Bonferroni's statistical results					
Difference between T ₁ and T ₀	$P < 0.0001$	$P < 0.0001$			
Difference between T ₂ and T ₀	$P < 0.0001$	$P < 0.0001$			
Difference between T ₁ and T ₂	$P = 0.001$	$P < 0.0001$			

^aRepeated-measures ANOVA, ^bIndependent *t*. SD: Standard deviation

Table 4: The intensity of emotional reactions during conflicts in the examined adolescent girls by group at the three time points

Intensity of emotional reactions during conflicts	Group, mean ± SD		Test type and result		
	Control (n = 24)	Intervention (n = 24)	Interaction of time and group ^a		Intergroup comparison ^b
			Mauchly's test	Greenhouse-Geisser	
At baseline (T ₀)	27.223 ± 21.829	24.665 ± 14.244	$\chi^2 = 12.845$	$F = 32.157$	$P = 0.633$
Four weeks after the beginning of the study (T ₁)	35.670 ± 18.998	13.248 ± 10.660	$P = 0.002$	$P < 0.0001$	$P < 0.0001$
Eight weeks after the beginning of the study (T ₂)	40.258 ± 19.001	9.693 ± 7.040			$P < 0.0001$
Test type and result					
Intragroup comparison^a					
Effect of time	$F = 15.679$	$F = 16.692$			
	$P < 0.0001$	$P < 0.0001$			
The result of Bonferroni's statistic					
Difference between T ₁ and T ₀	$P < 0.0001$	$P = 0.003$			
Difference between T ₂ and T ₀	$P = 0.001$	$P < 0.0001$			
Difference between T ₁ and T ₂	$P = 0.226$	$P = 0.078$			

^aRepeated-measures ANOVA; ^bIndependent *t*. SD: Standard deviation

violence during the COVID-19 pandemic.^[28,29] The COVID-19 pandemic significantly changed the life and psychological status of people globally.^[30] During the pandemic period, family members needed to spend considerable time together at home which may negatively affect their interpersonal relationships and increase interpersonal conflicts through increasing behaviors such as criticism, blaming, and preaching.

We also found no significant between-group difference respecting the pretest mean score of APC intensity, whereas the mean score of APC intensity in the intervention group was significantly less than the control group both at the end of the intervention and 4 weeks later. This finding denotes the significant positive effects of PT on APC intensity which is consistent with the

findings of some previous studies.^[19,22] PT education can improve interpersonal interactions, reduce anger, and improve mental health among female students.^[31] A study also showed that a short online parenting program significantly improved parent-child relationships.^[19] APC intensity reflects the intensity of APC-related emotions.^[32] PT education can reduce APC intensity by improving emotion regulation and control,^[33] increasing attention to positive emotions and capabilities,^[34] and improving capabilities and capacities.^[35] Study findings also showed that APC intensity significantly increased in the control group across the three measurement time points. This finding can also be attributed to the effects of home quarantine during the COVID-19 pandemic on interpersonal conflicts among family members.

Among the limitations of the present study were potential between-group information leakage and a small sample size. On the other hand, one of the strengths of the study was that none of the participants were excluded from the study.

CONCLUSION

This study concludes that group PT education is effective in significantly reducing APC. Therefore, PT education can be used to improve interpersonal relationships in families, reduce APC, and improve the mental health of families and communities. Future studies are recommended to assess the long-term effects of PT education on APC and the quality of interpersonal relationships in families.

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Conflicts of interest

There are no conflicts of interest.

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