

## EXAMINATION OF PROBLEM SOLVING SKILLS AMONG UNIVERSITY STUDENTS WITH CHILDHOOD TRAUMA EXPERIENCES

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### ABSTRACT

**Objective:** Problem solving skills are an important subject to handle with childhood trauma experiences. The aim of this study was to examine problem solving skills with childhood trauma experiences among university students. **Methods:** Participants consist of 647 university students. The Problem Solving Inventory, Childhood Trauma Questionnaire (CTQ) and Sociodemographic Form were administered to the students to collect data. CTQ scores were calculated as the low and high level of childhood trauma experiences. The independent samples t-test was used to assessment data. **Results:** There were statistically significant differences between the means of Problem Solving subscale scores (impulsive style, reflective style, avoidant style, monitoring style, confidence style and planfulness style) of the students with the low and high level of childhood trauma (physical, emotional and sexual). Also, the students with both high level of childhood trauma experiences ( $n=47$ ) and history of suicidal behavior use avoidant style ( $t=-2.978, p<0.004$ ) and reflective style ( $t=-2.289, p<0.026$ ) as problem solving skills. **Conclusion:** The results showed that the students with high childhood trauma experiences are different according to problem solving skills from the students with low childhood trauma experiences. Therefore, improving the problem solving skills in risk groups who are high childhood traumatic experiences is important to well being, to protect from health-damaging and life-threatening behavior.

**Key Words:** Problem solving skills, childhood trauma, child abuse, university students,

## ÇOCUKLUK TRAVMA YAŞANTISI OLAN ÜNİVERSİTE ÖĞRENCİLERİNİN PROBLEM ÇÖZME BECERİLERİNİN İNCELENMESİ

### ÖZET

**Amaç:** Problem çözme becerileri, çocukluk dönemindeki travma yaşantılarıyla başetmede önemli bir konudur. Bu çalışmanın amacı, üniversite öğrencilerinde çocukluk travma deneyimleri ile problem çözme becerilerini incelemektir. **Yöntem:** Katılımcılar 647 öğrenciden oluşmaktadır. Veri toplamak amacıyla öğrencilere, Problem Çözme Envanteri, Çocukluk Örselenme Yaşantıları Ölçeği (ÇÖYÖ) ve Sosyodemografik Form uygulanmıştır. ÇÖYÖ puanları, çocukluk dönemi travma yaşantıları düşük ve yüksek seviye olarak hesaplandı. Verileri değerlendirmede bağımsız gruplar için t-testi kullanıldı. **Bulgular:** Çocukluk dönemi travma yaşantısı düşük ve yüksek düzeyde (fiziksel, duygusal ve cinsel) olanların Problem Çözme alt ölçekleri (aceleci, düşünen, kaçınan, değerlendirici, kendine güvenli ve planlı yaklaşım) ortalama puanları arasında istatistiksel olarak anlamlı bir farklılık bulunmuştur. Ayrıca, yüksek düzeyde çocukluk travma yaşantısına sahip intihar davranışı olan öğrenciler ( $n = 47$ ), çekingen ( $t = -2,978, p < 0.004$ ) ve yansıtıcı ( $t = -2,289, p < 0.026$ ) problem çözme yaklaşımlarını kullanmaktadırlar. **Sonuç:** Sonuçlar, çocukluk dönemi travma yaşantısı yüksek olan öğrencilerin problem çözme becerilerinin, çocukluk dönemi travma yaşantısı düşük olan öğrencilere göre farklı olduğunu göstermektedir. Bu nedenle, çocukluk çağı travma yaşantıları yüksek olan risk gruplarında problem çözme becerilerini geliştirmek iyilik hali ve sağlığa zararlı, yaşamı tehdit eden davranışlardan korumak için önemlidir.

**Anahtar Kelimeler:** Problem çözme becerileri, çocukluk travması, çocuk kötüye kullanımı, üniversite öğrencileri

## INTRODUCTION AND AIM

When the child is growing up, childhood trauma is very important with healthy manner in all aspects. If the child had abuse or neglect history, his/her development is restricted or hinders. Adults with adverse childhood experiences and exposure to adverse life events experience a diverse array of physical, mental, and social health problems across their lifespan (Bahar et al., 2009; Trask et al., 2011; Roberts et al., 2004; Amnie, 2018). Stress has been linked to reduction in the immune system's ability which directly influences coping and overall health (Wilson et al., 2012). The long-term consequences of the childhood trauma experiences can result mental health problems like development of post-traumatic stress and disorders and different psychological outcomes (O'Leary, 2009; Wilson, 2010; Wilson et al., 2012). Its consequences range from mild to severe psychopathology. On the other hand, early adverse experiences may lead to use of adaptive coping strategies. Participants who respond to stress through adaptive coping focused either on problem-solving, 17.6% (32 out of 188), or on emotion-focused coping, 45.2% (85 out of 188) (Amnie, 2018).

Early negative life events have mild impact on suicidal behavior, but a stronger impact on cognitive deficits, which eventually have a high impact on suicidal behavior (Yang and Clum, 2000). Because of problem solving deficits and suicidal behaviors are related, in this study, this relation was investigated among students who have experienced childhood trauma.

Childhood sexual abuse was found to be an independent predictor of suicidal ideation and behavior. Both problem-solving confidence and social support moderated the relationship between childhood abuse and suicidal ideation (Esposito and Clum, 2002). Also, childhood emotional abuse was indirectly associated with intimate partner violence (Bell and Higgins, 2015). Physical punishment in childhood has a model as aggressive and controlling strategies for solving the problems of living together and obstructs the development of important problem-solving skills, specifically the ability to take role with others (Cast et al., 2006). Understanding individuals' responses to stress and their coping strategies is as important as the stimulus or the causes of the stress for effective stress management interventions (Amnie, 2018). A structural equation model revealed that the effect of abuse severity on later functioning was partially mediated by coping strategies (Merrill et al., 2001).

Problem solving is defined as a cognitive behavioral process through which steps having a logical succession are followed to find a solution to a problem (Demirel, Derman, Karagedik, 2015). Problem solving or coping does play an important role in adaptational responses to stress. Coping may play a dual role in functioning, both in how one deals with a specific stressor and how that situation and the coping utilized affects subsequent coping and functioning. Coping with previous abuse may affect the types of coping strategies employed for the common developmental stressors of survivors, and the subsequent, adaptation, or maladaptation that follows (Shapiro and Levendosky, 1999). In the face of trauma, human coping mechanisms are forcefully overwhelmed and survivors are rendered powerless. Social competence and social problem-solving skills are both the outcome of previous experiences as well as predictors of current and future adjustment and psychopathology (Levendosky et al., 1995). Problem solving has important role as a response to stress (Heppner and Hillerbrand, 1991). Also, problem solving skills protect the child in an adverse environment. Many survivors are capable of functioning adaptively, providing evidence that internal mechanisms do exist for dealing with severe childhood trauma and avoiding severe consequences (Shapiro and Levendosky, 1999). Avoidance coping involves denial, detachment and isolation from others, further impairing health functioning. Avoidance strategies may temporarily prevent unpleasant experiences and reduces the survivor's opportunity to learn how to manage stress productively (Rosenthal et al., 2005).

In the relevant literature, psychological defense styles and coping strategies in sexual abuse survivors are examined. However, problem solving skills in physical, emotional and sexual abuse were not investigated together. There has been lack of knowledge about coping strategies of abuse in childhood in the literature. Understanding how these mechanisms function is important to handle the later psychological and behavioral reactions/problems or stress prevention in childhood trauma survivors.

In this study, retrospectively identifying problem solving skills of participants who have childhood trauma experiences among university students are an important objective. Second

objective is to compare students with both suicidal behavior and high-low childhood trauma experiences according to their problem-solving skills.

## **METHOD**

### **Subjects**

This study is conducted among 802 students studying at Faculty of Education at Baskent University in Ankara. In this faculty, seven departments were selected. Convenient sampling was used since it was more practical and easy for the researchers to reach the sample. The study protocol was approved by Baskent University. A total of 647 participants, 80.67 % of the sample took part in the study. Females constituted 83.6 % ( $n = 541$ ), and males constituted 15.5 % ( $n = 100$ ) of the sample, and 0.9 % ( $n=6$ ) of the students did not state their gender. The sample consists of students of the faculty of education and the number of female students is higher when the majority of the students in the faculty of education are female. The mean age of the sample was  $21.4 \pm 1.8$  with a range from 18 to 34 years.

### **Instruments**

*The Socio-demographic Form:* This is a self-rating form prepared by the authors and it involves questions about socio-demographic status, academic year, department, subjective evaluation of academic performance, residence of the student, education level of the father and the mother, subjective evaluation of the family income, and history of suicide.

*Childhood Trauma Questionnaire (CTQ):* This scale was developed by Bernstein et al. (1994) and adapted to the Turkish population by Aslan and Alpaslan (2000). It is a self-report inventory and consists of 40 items. The inventory assesses self-reported experiences of abuse and neglect before the age of 18 years. Items on the CTQ begin with the phrase "When I was growing up," and are rated on a 5-point Likert-type scale according to frequency with which experiences. Response options range from "never true" to "very often true". The maximum and minimum scores are 200 and 40 respectively. A high score corresponds to high frequency of experiences of abuse and neglect. It has 3 subscales which are "Physical Abuse-PA" (19 items), "Emotional Abuse and Neglect-EAN" (16 items) and "Sexual Abuse-SA" (5 items). In this study, Cronbach's alpha was, 0.59 for the PA, 0.87 for the EAN, 0.79 for the SA, and 0.86 for the whole scale.

*The Problem Solving Inventory (PSI):* The Problem Solving Inventory (PSI) was designed to assess people's perceptions of their problem solving ability and problem solving style by Heppner and Petersen (1982) and adopted to the Turkish population by Sahin et al. (1993). It is a self-report instrument and consists of 35 items and 6 subscales; Impulsive, Reflective, Problem Solving Confidence, Avoidant, Monitoring, and Planfulness subscales are consist of different number of items. Participants used a 6 point Likert-type scale to respond anchored by "1: strongly agree" to "6: strongly disagree". The total score range is 35 to 210. The PSI measures how individuals believe they react to personal problems encountered in their daily lives. The high scores indicate perceiving oneself as inefficient in problem-solving. Lower scores indicate that the person perceives himself/herself as more confident in problem solving, having more personal control over his/her problems and a tendency to approach problems. In this study, Cronbach's alpha was 0.86 for the whole scale.

### **Procedures**

Questionnaires were attached to the socio-demographic form randomly. Questionnaire forms were distributed to the participants by lecturers while they were in attendance of the required course. Students were asked to sign an informed consent form and they assured that their responses would be confidential and they were informed that they were not obliged to complete the questionnaire. They were volunteered to take part in the study after being informed. The respondents were instructed to place the completed questionnaire forms in the same envelope before the forms were retrieved. Students completed the questionnaires in the classroom.

## Analysis

Childhood Trauma Questionnaire scores were calculated as the low and high level of childhood trauma experiences. The differences between means of the PSI subscales and low and high level of physical, emotional and sexual childhood trauma were computed through independent samples t-test. In this study, suicide ideation/plan/attempt was tackled concomitantly as suicidal behavior. The limitation of the sample does not allow for separate analysis like gender, suicidal behavior. The subgroup of the sample who reported that they had history of suicidal behavior were excluded from the rest of the sample. In this group, the difference between the PSI subscale scores among the students with high level of childhood trauma and low level of childhood trauma experiences was tested by computing independent samples t-test. SPSS 20.0 statistical software program was used for the statistical analyses.

## RESULTS

The demographical variables are shown in the Table 1.

Table 1. Socio-demographic characteristics of the students

Characteristics (n=647)	N	%
<b>Gender</b>		
Female	541	83.6
Male	100	15.5
Not Stated	6	.9
<b>Marital status</b>		
Single	624	97.8
Married	7	1.1
Living Together	7	1.1
<b>Department of Faculty</b>		
Secondary Education Science and Mathematics	102	15.8
Secondary Education Social Fields Teaching	49	7.6
Elementary	266	41.1
Foreign Language	73	11.3
Educational Sciences	36	5.6
Computer Education and Instructional Technology	77	11.9
Turkish Language Education	40	6.2
Not Stated	4	0.6
<b>Academic year</b>		
Year 1	239	37.2
Year 2	147	22.9
Year 3	83	12.9
Year 4	155	24.1
Year 5	18	2.8
<b>Residence</b>		
At home with family	345	53.7
In student dormitory	131	20.4
At home with friends	100	15.6
At home alone	34	5.3
Other	32	5.0
<b>Academic performance</b>		
Low	28	4.4
Average	315	49.0
Good	259	40.3
Very Good	41	6.4
<b>Family income</b>		
Poor	15	2.4
Average	170	26.7
Good	359	56.4

Very Good	92	14.5
Education of the mother		
No Illiterate	4	.6
Illiterate	3	.5
Primary School	175	27.1
High School	231	35.7
College/university	165	25.5
Not Stated	69	10.7
Education of the father		
No Illiterate	3	.5
Primary School	99	15.3
High School	184	28.4
College/University	286	44.2
Not Stated	75	11.6

The CTQ does not have a cut-off point which we can evaluate as high and low level of trauma. Therefore, CTQ scores were calculated as the low level ( $n=175$ ) and high level ( $n=163$ ) of childhood trauma experiences. The score of 25% below the mean score was evaluated as low level of trauma score. The 25% score above the mean score was evaluated as a high level of trauma score. Independent sample t-test was conducted to determine the difference between the means of Problem Solving Inventory subscales of students with low and high levels of childhood trauma experience scores. There were statistically significant differences between the means of Problem Solving subscales (for impulsive style  $t=-2.475$ ,  $p<0.01$  for reflective style  $t=-3.539$ ,  $p<0.000$ ; for avoidant style  $t=-5.235$ ,  $p<0.000$ ; for monitoring style  $t=-3.513$ ,  $p<0.001$ ; for confident style  $t=-4.676$ ,  $p<0.000$ ; for planfulness style  $t=-4.648$ ,  $p<0.000$ ; respectively) of the students with the low and high level of childhood trauma (physical, emotional and sexual) scores (table 2).

Table 2. t test results between Problem Solving Inventory and Childhood Trauma Questionnaire subscales

Problem Solving Inventory subscales	Physical Abuse-PA		Emotional Abuse and Neglect-EAN		Sexual Abuse-SA	
	t	p	t	P	t	p
Impulsive	-2.228	.027*	-1.943	.053	-2.652	.009*
Reflective	-3.662	.000**	-4.438	.000**	-3.430	.001**
Avoidant	-4.749	.000**	-5.168	.000**	-3.476	.001**
Monitoring	-2.776	.006*	-3.997	.000**	-3.493	.001**
Confidence	-3.713	.000**	5.245	.000**	-2.968	.004*
Planfulness	-3.747	.000**	-5.413	.000**	-2.922	.004*

\* $p<.05$ , \*\* $p<.01$

The prevalence of self-reported suicidal behavior was 18.3% ( $n=118$ ), whereas 78.8% ( $n=510$ ) of the sample reported that they had no suicide ideation and the ratio of those who did not provide any reply was 2.9% ( $n=19$ ). Indeed, 13.9% ( $n=90$ ) of the students had suicide ideation, 2.2% ( $n=14$ ) had made a suicide plan and 2.2% ( $n=14$ ) reported that they had attempted suicide.

The subgroup of the sample who reported that they had history of suicidal behavior ( $n=118$ ) excluding the rest of the sample. Fourteen students with suicidal behavior had low level of childhood trauma experiences, whereas 47 students had high level of childhood trauma experiences. It was statistically analyzed with t-test in order to find out the differences of problem solving scores in the students with both high level of childhood trauma ( $n=47$ ) and low level of childhood trauma experiences ( $n=14$ ) and suicidal behavior. Independent sample t-test results showed that the students with both high level of childhood trauma experiences ( $n=47$ ) and history of suicidal behavior use avoidant style ( $t=-2.978$ ,  $p<0.004$ ) and reflective style ( $t=-2.289$ ,  $p<0.026$ ) as problem solving skills.

## DISCUSSION

The current study identified individual differences of youths' problem solving skills who have trauma experiences retrospectively. The most important contribution of this study is the identification of specific problem solving skills of university students with childhood trauma history. The significance of the present study is twofold. Study results indicate that the students with low level of childhood trauma experiences have differentiated from the students with high level of childhood trauma experiences according to the problem solving styles. It can be said that students with high level of childhood trauma (physical, emotional, and sexual) use impulsive style, reflective style, avoidant style, monitoring style, confidence style and planfulness style more frequently than the students who have low level of childhood abuse (physical, emotional and sexual). Furthermore, also, the students with both high level of childhood trauma experiences and suicide behavior use avoidant style and reflective style more frequently. Avoidant style is ineffective problem solving. This finding means that they have a limited behavioral diversity like; when a solution to a problem was unsuccessful, he does not examine why it didn't work. The students fail to enrich their problem solving styles. Therefore, they tend to avoid the problems. Ineffective problem solving results in stressful outcomes and psychological problems. On the other hand, there was an effective problem solving which is reflective style. It reflects a rational or reflective style of problem solving like; when making a decision, he weighs the consequences of each alternative and compares them against each other. There was a personal control, and approach activities.

Original factor structure of the PSI has 3 factors; problem solving confidence, approach-avoidance style and personal control by Heppner and Peterson (1982). Impulsive, Reflective, Avoidant, Planfulness and Monitoring style in Turkish version of PSI reflects approach/avoidance strategies closely to Heppner and Petersen's (1982) original factor structure. This study results supported that the approach-avoidance dimensions of coping were related to childhood sexual abuse (Coffey et al., 1996). Participants who practiced maladaptive coping styles constituted 37.2% (70 out of 188) of respondents and resorted to avoidance of the stressful condition, withdrawal from a stressful environment, disengagement from stressful relationships, and use and abuse of drugs and/or alcohol (Amnie, 2018). In accordance with this finding, adults with histories of child sexual abuse have a tendency to use avoidant coping as a personal problem-solving (Harris et al., 2016). The other study results confirm that victims of childhood sexual abuse showed significantly lower approach coping strategies scores. In terms of intervention, a reduction of avoidance-type strategies appears to have a beneficial effect (Cantón-Cortés and Cantón, 2010). Also there was a study about childhood emotional abuse. Women who had childhood emotional abuse experience avoidance style and negative problem orientation and impulsivity/carelessness style social problem solving strategies. Experiential avoidance had both a direct and indirect effect, via negative problem orientation and impulsivity/carelessness style social problem solving on intimate partner violence victimization and perpetration. Childhood emotional abuse may lead some women to avoid unwanted internal experiences, which may adversely impact their ability to effectively problem solve in social situations and increase intimate partner violence risk (Bell and Higgins, 2015).

Approach strategies (e.g., problem-solving, seeking social support) appear to help individuals notice and take advantage of changes in the situation, resulting in the potential for more control over a situation. On the other hand, avoidant strategies (e.g., wishful thinking, fantasy, distraction, withdrawing from people, trying to forget about the abuse, alcohol or drug use) are frequently used strategies (Johnson et al., 2003; Sigmon et al., 1999; Simon et al., 2010) and protect one from becoming overwhelmed by the level of immediate stress and anxiety that is experienced (Roth and Cohen, 1986). Johnson et al. (2003) emphasizes that avoidant coping skills may be initially adaptive responses to a maladaptive environment because they serve to protect the child from overwhelming emotions and provide some sense of control in an uncontrollable situation. Although individuals rarely rely upon only one type of coping strategy, some individuals will tend to show a strong preference for either extreme approach or avoidance coping (Johnson et al., 2003). Planful problem solving is an adaptive strategy, but it is not as useful in sudden and unexpected situations (Wilson et al., 2012). In this study, the other strategies also seem to be adaptive strategies. It can be said that different problem solving styles can be effective at different situations. People with childhood abuse/traumas solve their problems differently than people without childhood traumas. They use problem solving styles more frequently. He/she may use one specific coping style at a certain time, yet at another time adapt to another style.

In one study, reframing the event and deliberately suppressing were two cognitive styles related to abuse characteristics (Perrott et al., 1998). Avoidant and cognitive coping strategies serve as mediators in psychological and interpersonal functioning in adolescents (Shapiro and Levendosky, 1999). Thus, Simon et al. (2010) stated that avoidant youth (36.1%) showed significantly more problems. There is a circular relationship. While avoidant youth may experience more problems, these problems may lead to use of avoidance strategies more frequently.

On the other hand, same coping strategies were in fact associated with poorer adult psychological adjustment (Leitenberg et al., 1992). There was a study focusing on the poorer social adjustment and overall functioning in college students (Abdulrahman and DeLuca, 2001). Romans et al. (1999) stated that coping styles are likely to be a major mechanism through which childhood sexual abuse increases rates of later psychological problems. Therefore, suicidal behavior shall be considered as a poor psychological adjustment and later psychological problem. It was investigated in the context of the high-low levels of childhood history. Findings that delineated significant differences in problem solving skills of students with both have suicidal behavior and high-low level of childhood trauma experiences. According to result of this study, the students with both the high levels of childhood trauma experiences and suicidal behavior have more frequently use reflective and avoidant problem solving skills to handle the childhood trauma. No significant difference found in impulsive, planfulness, problem solving confidence and monitoring styles.

Adult survivors of childhood sexual abuse internalize the trauma. Two of their internalized behaviors include avoidance behaviors and suicide attempts. They suppress their anger and their anger is directed inward against themselves. This situation is associated with poor interpersonal skills (Wilson et al., 2012, Sachs-Ericsson et al., 2010). Ornduff (2000) found that people with a history of childhood sexual abuse had greater impairments in affective and cognitive processes resulting in higher incidence of interpersonal problems and associated with poor interpersonal skills (Callahan et al., 2010; Wilson et al., 2012). Reflective style has cognitive processes like, when a person makes a decision; he/she weighs the consequences of each alternative and compares them against each other. Students with high level of childhood trauma history may have difficulties interpreting interpersonal cues, handle with interpersonal problems. Having poor or inadequate problem solving skills leads children to experience difficulties in general functioning. Findings in this study are in line with Yang and Clum (2000) study that the suicidal group reported lower problem solving confidence.

The results showed that the students with high childhood trauma experiences are different according to problem solving skills the students from with low childhood trauma experiences. Identifying problem solving skills of university students in the context of the high-low levels of childhood history is an important objective in order to become aware of their own coping skills, especially avoidant skills and make a contribution to the development of intervention for stress management. Therefore, studying avoidant problem solving style and improving the problem solving skills in risk groups who are high childhood traumatic experiences protect from health-damaging and life-threatening behavior. In one study, after stress management training, adult survivors of CSA, showed more seeking social support, positive perception of stressors and planful problem solving coping behaviors, and showed fewer escape and avoidance behaviors (Wilson et al., 2012), and effective in wellbeing (Rew and Christian, 1993). As a result, it is necessary to have collaborative and multidisciplinary approaches including life skills training, to prevent the consequences of maladaptive coping and to enhance the self-efficacy of individuals to cope more effectively with stress and stressful life events. Implementation, and execution of health education and promotion programs may meet the diverse needs of populations who had childhood traumatic history. Especially, stress prevention and management education play an important role in the holistic health of adult with childhood trauma history. It will give adult survivors an empowering set of tools for their healing journey (Wilson et al., 2012; Amnie 2018).

Several limitations of this study should also be noted. One of them is that the present study was unable to explore more detailed dimensions of abuse history such as type, duration, or age at onset of abuse and gender difference. In this study, suicide ideation/plan/attempt as evaluated suicidal behavior is another limitation of the study. The other limitation is that the self-reported and retrospective memories tend to be fairly accurate when remembering suicide behaviors and childhood trauma experiences. This study is cross-sectional. The cross-sectional nature of the

study implies that it can be only spoken to associations and not causality. Finally, this study might be expanded to evaluate the relationship between problem solving skills and childhood trauma in larger population.

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