A Cross-Sectional Analysis of the Relationship among Adolescents' Perceived Social Support, Psychological State and Future Expectations among Turkish Students

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ABSTRACT

Introduction: Due to social and emotional changes alongside the cognitive and logical changes in adolescence, alterations occur in the adolescent's communication with family and friends in this period, and social support assumes greater importance.

Methods: From each of the two middle and high schools in the Ilkadim district of Samsun, a total 688 students were employed by a two-stage sampling method in this cross-sectional study. The data were collected from sociodemographic information, Multidimensional Scale of Perceived Social Support (MSPSS), Brief Symptom Inventory (BSI) and Future Expectations Scale for Adolescents (FESA) questionnaires distributed under the supervision of guidance counselors in these schools between December 2014 and February 2015. The Mann-Whitney U test and Spearman's Rank Correlation were used for statistical analysis. The significance level was accepted as $p<0.05$ for all tests.

Results: In the study group, MSPSS Family subscale had a stronger correlational relationship with all the BSI subscales including global indices and also with total score of FESA and subscales with the exception of the Marriage and Family subscale than the other two MSPSS subscales. There were moderate negative correlation between scores of MSPSS and BSI, and a low-moderate positive correlation was observed between total MSPSS and FESA scores of adolescents. The results demonstrated that adolescents who exercise regularly and avoid smoking and alcohol have higher perceptions of social support.

Conclusion: Perceived social support from family may be more effective than perceived social support from friends or a significant other in the development of psychological well-being and positive future expectations of Turkish adolescents.

INTRODUCTION

According to the World Health Organization (WHO), adolescence comprises the 10-19 year-old age group involving all physical, sexual and psychological development and significant cognitive and social changes from the end of childhood until adulthood. Approximately half of psychological disorders begin at the end of early adolescence and the beginning of mid-adolescence, and approximately 10-25% of adolescents experience severe psychiatric problems (1). The most prevalent class of disturbances in adolescents is anxiety disorders followed by behavior, mood, and substance disorders (2). In adolescent girls, in addition to internalizing disorders, particularly anxiety and depression, problems concerning social relations with parents and peers are also more common. However, in male adolescents, externalizing disorders such as problems in school or at work, or antisocial and violent behaviors (attention deficit hyperactivity disorder, oppositional defiant disorder or behavioral disorder) are more common (3).

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Due to social and emotional changes along with the cognitive and logical changes in adolescence, alterations occur in the adolescent's communication with family and friends in this period, and social support assumes greater importance (4). According to psychosocial theory, social support can benefit health indirectly by improving mental health, by lowering the adverse effects of stress, or by encouraging a feeling of significance and purpose in life (5). Adolescents with low social support have been shown to experience more anxiety, depressive symptoms and behavioral problems than adolescents with high social support when they encounter stressful events (6).

Individuals' levels of physical and psychological functioning affect their perceptions of the future. Such expectations also help to shape their input into health-related behaviors, which in turn affect future health outcomes. Positive expectations for the future and high levels of optimism are therefore more common among well-adjusted individuals, while also making a positive contribution to future functioning (7). The presence of social support, which is particularly important in adolescence, increases levels of optimism (8).

AIM

Our study was implemented to answer three research questions related to adolescent mental health: 1) What is the level of psychological symptoms in Turkish adolescents? 2) What are the young individuals' future expectations? and 3) What is the relation of perceived social support with levels of psychological symptoms and future expectations in adolescents?

METHODS

This cross-sectional research was performed in Samsun, a coastal city in the central Black Sea region of Turkey. The population of the city is close to 1.5 million. A total of 31,126 students attend the 68 middle and high schools in Ilkadim district of Samsun Province.

PARTICIPANTS AND PROCEDURE

In order to show a significant difference of 2.29 units in total MSPSS scores, assuming an expected total score of 45.8 with standard deviation of 15.9, 90% power and 5% type-1 error from a population of 31,126 studying between grades 6 and 12 in public schools in the district, 621 individuals were thought to achieve the calculated minimum sample of 517 individuals with a 20% loss/margin of error. A two-stage sampling method was employed. In the first stage, two middle schools and two high schools were chosen by systematic sampling. In the second stage, two classes from both 6th to 12th grades in each school were selected using simple random sampling. The study data were collected through questionnaires distributed under the supervision of guidance counselors in these schools between December 2014 and February 2015. Adolescents were informed about the contents of the questionnaires and how to complete them, after verbal consent was obtained from subjects willing to participate. Seven hundred and five students were initially included. Questionnaires from 17 students were regarded as invalid, and 688 forms were finally analyzed.

MEASURES

A sociodemographic data form, Multidimensional Scale of Perceived Social Support (MSPSS), Brief Symptom Inventory (BSI) and Future Expectations Scale for Adolescents (FESA) were used for data collection.

Sociodemographic Data Form: The authors prepared a form consisting of 12 questions for the purpose of determining participants' age, sex, place of birth, school attended, whether the parents were still living and their education levels, tobacco and alcohol use, regular exercise activity, any previous receipt of psychiatric help and psychiatric medication use. According to WHO's smoking and tobacco use policy, students who smoke any tobacco product, either daily or occasionally were classified as "smokers" and those drinking alcohol regularly at least once a month were classified as "alcohol users."

Multidimensional Scale of Perceived Social Support (MSPSS): This self-report scale developed by Zimet et al. (9) measures the adequacy of sources of individual's social support with a 7-point Likert-type scale ranging from "Definitely no=1" to "Definitely yes=7." It consists of 12 items intended to subjectively evaluate each individual's perceived support from three sources: Family, Friends and Significant Others. The total score is calculated by adding the subscale scores. Higher scores indicate higher perceived social support.

Brief Symptom Inventory (BSI): This multidimensional symptom scanning test developed by Derogatis (10) consists of 53 items in order to determine psychological symptoms. BSI is a Likert-type scale evaluated between values of 0 and 4, corresponding to "not at all" to "extremely." Three global indices of distress are named as Global Severity Index (GSI), Positive Symptoms Total (PST) and Positive Symptoms Distress Index (PSDI). The total from each of the subscales divided by the number of

items in that subscale gives the subscale score. Increasing sub-test and general symptom scores indicate a high level of psychological symptoms. The GSI score that ranges between 0 and 4 obtained by dividing the total subscale scores by the number of all items indicates the level of stress. The use of five factors (anxiety, depression, negative self, somatization and hostility) is recommended by Şahin and Durak (11) who adapted the scale into Turkish.

Future Expectations Scale for Adolescents (FESA): This 25-item Likert-type scale was developed in order to measure adolescents' expectations for the future. The items are scored from 1 "I Definitely Do Not Believe" to 7 "I Definitely Believe" (12). The Cronbach alpha coefficient of the Turkish version of the scale which consists of four factors named "Work and Education," "Marriage and Family," "Religion and Society" and "Health and Life," is 0.925 (13). Each subscale score divided by the number of items in that subscale gives a score for that dimension. Total points determined in the entire scale divided by the total number of items gives the total score. Higher scale scores indicate an optimistic view of the future.

DATA ANALYSIS

The data obtained from the research were transferred into a computer and analyzed using SPSS (Version 15 for Windows, SPSS Inc, Chicago, IL, U.S.A.) software. Constant variables were expressed as mean ± standard deviation, and frequency data as number and percentages. The Mann-Whitney U test and Spearman's Rank Correlation were used at statistical analysis. Significance level was accepted as $p<0.05$ for all tests.

RESULTS

Six hundred and eighty-eight adolescents, 334 (48.5%) males and 354 (51.5%) females, participated in the study. Mean ages of males and females were 14.9±1.9 and 14.8±1.9 years, respectively. The difference was not statistically significant ($p>0.05$). Approximately 75% of adolescents were born in the provincial urban center, and 88% had at least one sibling. Both parents were still living in the case of 661 (96.1%) subjects in the research group. The mothers of 296 (43.0%) subjects and the fathers of 373 (54.2%) had an education level of high school or above (Table 1).

Sixteen (2.3%) of the 91 (13.2%) students regularly using pharmaceutical agents were taking psychiatric medications. One hundred and twenty-nine (18.8%) adolescents reported having previously received help from a psychiatrist or psychologist.

Table 1. *Adolescents' Sociodemographic Characteristics*

Characteristics	n	%
Sex		
Male	334	48.5
Female	354	51.5
Mother's Education Level[1]		
Illiterate	8	1.2
Primary school	183	26.6
Middle school	189	27.5
High school	207	30.1
University	89	12.9
Father's Education Level[2]		
Illiterate	2	0.3
Primary school	123	17.9
Middle school	168	24.4
High school	233	33.9
University	140	20.3
Smoking Status		
Smoker	59	8.6
Non-smoker	629	91.4
Alcohol		
User	59	8.6
Non-user	629	91.4
Constant Medication Use		
Yes	91	13.2
No	597	86.8
Regular Exercise		
Yes	357	51.9
No	331	48.1

[1]Not given: 12; [2]Not given: 22

Mean total scores were 61.8±17.7 for MSPSS, 0.8±0.6 for BSI and 5.2±1.3 for FESA in the research group. The highest score on the MSPSS was recorded on the Family subscale (21.6%) and the lowest score on the Significant Other subscale (20.0%). The highest score on the BSI was recorded on the Hostility subscale (1.0%) and the lowest score on the Somatization subscale (0.5%), The highest score on the FESA was recorded on the Work and Education subscale (5.6%) and the lowest score on the Religion and Community subscale (4.8%). High school students had lower total MSPSS and FESA scores than middle school students ($p<0.001$), while BSI GSI scores were higher ($p<0.01$) (Table 2).

As shown in Table 3, while no significant difference was determined in adolescents' total FESA scores, total MSPSS scores were higher among subjects whose mothers had an education level of high school level or above, while BSI GSI scores were higher in girls and subjects with siblings ($p<0.01$; $p<0.001$; $p<0.05$, respectively). Total MSPSS and FESA scores were significantly lower and BSI GSI scores significantly higher in smokers or subjects

Table 2. *MSPSS, BSI and FESA Scores by School Level*

	School Level		
	Middle	High	Total
Total MSPSS Score[1]	65.6±17.0	58.5±17.8	61.8±17.7
BSI GSI[2]	0.7±0.6	0.8±0.6	0.8±0.6
Total FESA Score[1]	5.5±1.2	5.0±1.3	5.2±1.3

[1]p<0.001; [2]p<0.01
MSPSS: Multidimensional Scale of Perceived Social Support
BSI GSI: Brief Symptom Inventory Global Severity Index
FESA: Future Expectations Scale for Adolescents

Table 3. *MSPSS, BSI and FESA Scores by Sociodemographic Characteristics*

Sociodemographic Characteristics		MSPSS	BSI GSI	FESA
Sex	Male	62.1±17.8	0.62±0.5	5.28±1.3
	Female	61.5±17.6	0.89±0.7	5.18±1.2
	p	0.58	<0.001	0.12
Mother's Education Level	Middle school and below	60.5±17.5	0.76±0,6	5.24±1.3
	High school and above	63.8±17.7	0.78±0.7	5.23±1.3
	p	0.007	0.99	0.94
Father's Education Level	Middle school and below	61.4±16.7	0.75±0.6	5.29±1.2
	High school and above	62.1±18.4	0.77±0.7	5.20±1.3
	p	0.33	0.93	0.71

using alcohol, in those who do not exercise regularly and in those who had previously received psychiatric help (p<0.001).

There was a significant moderately negative correlation between total MSPSS scores and GSI scores (r=-0.47; p<0.001). A moderately negative correlation was determined between total MSPSS scores and the BSI Anxiety, Depression, Negative Self and Hostility subscales, and there was a low negative correlation with the Somatization subscale (p<0.001). A significantly low moderate positive correlation was determined between total MSPSS score and total FESA score (r=0.37; p<0.001).

MSPSS subscale scores were significantly negatively correlated with BSI subscale scores (Fig. 1) and global indices and significantly positively correlated with FESA subscale and total scores (p<0.001) (Fig. 2).

DISCUSSION

The mean total MSPSS score of the adolescents in the research group was 61.8±17.7. Scores ranging from 58.9±16.3 to 71.0±15.0 have been reported from studies involving similar ages (14, 15). The difference of mean scores between countries is based on primarily totally different societies. In addition, mean MSPSS scores obtained from a broad range may be due to perceived social support

Figure 1. *Correlational relationship with MSPSS and BSI scores*

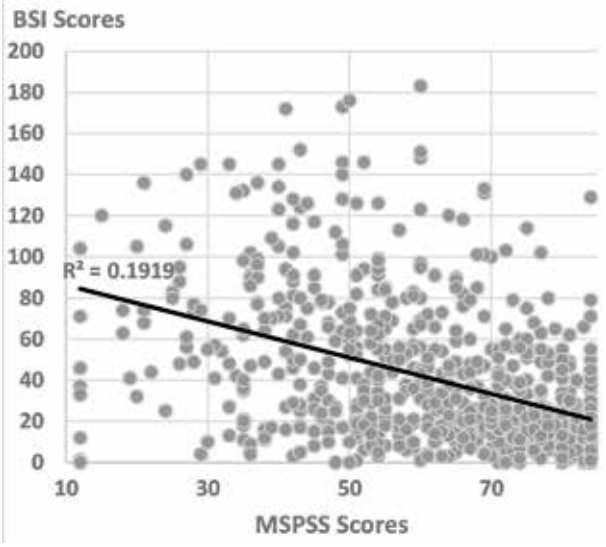
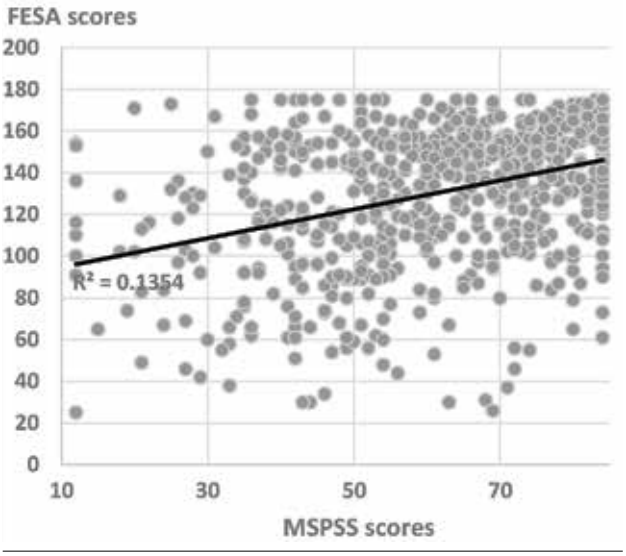


Figure 2. *Correlation between MSPSS and FESA scores*



affected by factors such as age, socioeconomic level and family structure, and to negativities experienced by children due to disease or trauma causing a change in perception. Indeed, adolescents whose mothers were educated to high school level or above had higher MSPSS scores. Similarly to this study, the subscale with the highest score in the majority of stated studies is the Family subscale. Although adolescence is a time characterized by conflicts with the parents, the family is still the adolescent's most important source of social support.

Our BSI GSI score of 0.76±0.6 is to a large extent compatible with the results of studies performed with

adolescents living under similar conditions and in a similar age group to those in this study (16, 17). One study in which higher GSI scores were obtained by Al-Krenawi et al. (18) reported a GSI score of 0.99±0.6 among Israeli children aged 14-18 in a conflict zone and of 1.32±0.6 in Palestinian students. Since Al-Krenawi et al.'s study (18) involved adolescents living in a conflict zone and with a history of trauma, their scores for psychological symptom levels were higher. The highest score was obtained from the Hostility subscale and the lowest score from the Somatization subscale, and this is generally in agreement with previous studies (19). In the light of these data, it may be suggested that somatization disorders are relatively less common in adolescents in Turkey, and that depressive symptoms and behavior disorders involving aggression and anger are more pronounced. The fact that somatoform disorders are common in individuals with a low level of education, living in rural areas and in eastern cultures may be responsible for the lowest symptom level in this study being determined in the Somatization subscale (20).

The total FESA score in the research group was 5.23±1.3. In one of the very few studies using the same scale in Turkey, a mean FESA score for middle school students of 5.41 which is quite close to the value to which our study was calculated (13). A mean score of 3.82 was determined using a 24-item scale with adolescents aged 12-19 in Chile (12). Similarly to this study, the highest scores in these two studies were obtained from the Work and Education subscale. The lowest subscale score in Tuncer's (13) study was on the Marriage and Family subscale, while in McWhirter and McWhirter's (12) study and this study it was on the Religion and Community subscale. In one study of Turkey as a whole, the most commonly expressed expectation by adolescents aged 13-18 was "having a good job," at 27.2% (21). Adolescents also regard the most important precondition for a healthy and happy family life well adapted to society in Turkey, which is still a developing country, to be possession of a sufficient economic level.

The absence of any difference in MSPSS and FESA scores between boys and girls in the study group is in agreement with other studies involving adolescents from various age groups (12). These findings show that perceived social support does not vary by gender and that a similar perception in all subscales occurs in both sexes.

BSI scores, however, were higher in girls, as in the great majority of previous studies (19, 22). BSI GSI scores were higher in adolescents with siblings. Total MSPSS and FESA scores were also lower in subjects with siblings, although this was not statistically significant. According to the findings of the Turkish Adolescent Profile study, siblings were the family members with whom adolescents reported the greatest conflict, at 35.1% (21). This is probably due to feelings of rivalry and disagreements with siblings at these ages, lack of a private room due to increasing numbers in the household or difficulties in meeting various material or psychological needs.

Total MSPSS and FESA scores were lower and BSI GSI scores were higher in adolescents using cigarettes or alcohol, those not exercising regularly and those who had previously received psychiatric help. These findings are similar to those in the literature (17, 23). At this time, when risky behavior is frequently exhibited under the influence of hormonal changes or social environment, adolescents who do not receive adequate social support from their immediate circles and who experience psychological problems turn more toward behavior with adverse health impacts, such as smoking and alcohol use. Various studies have reported that physical activity has a positive effect on psychological well-being (24) and reduces pessimism levels (25). Because of causing an increase in endorphin production and changes in the central serotonergic system and at the noradrenalin level, physical exercise is also thought to cause adolescents to perceive the social support they receive in a more positive manner and to have more positive expectations for the future.

Total MSPSS and FESA scores were lower while BSI GSI scores were higher in high school students compared to middle school students. Perceived social support and positive future expectations may be decreased in the transition from early to middle adolescence, while psychological symptoms increase. This finding is generally compatible with results from studies involving a similar age group (11, 25). In addition to high school years being a time when adolescents draw away from their parents, attach more importance to the ideas of their friends and strive to become autonomous individuals, it is also thought that psychological state, future expectations and perceived social support levels can be adversely affected by the pressure created by approaching university entrance exams and career planning.

While a negative correlation was observed between perceived social support and psychological state, there was a positive correlation between perceived social support and future expectations among the adolescents in the research group. As previously reported, an adolescent who receives adequate social support from family, friends

and other people in the immediate environment has a healthier psychological state in the face of these difficulties and positive expectations for the future (26, 27). One striking finding from our study is that the MSPSS Family subscale has a stronger correlational relationship with all the BSI subscales including global indices and also with FESA total scores and subscales with the exception of the Marriage and Family subscale than the other two MSPSS subscales. These findings are consistent with the majority of previous studies that have reported the negative correlation between perceived social support and psychological distress (28-30). Although adolescence is regarded as a time when the individual begins to draw away from the family, when more importance is attached to peers and when efforts are made to achieve autonomy in terms of personality, the family is still the most important factor in the preservation of psychological health and in the development of positive expectations for the future. It can be determined, therefore, that perceived social support from family is more important than perceived social support from friends or a significant other in the adolescent's development of psychological well-being and positive future expectations.

The most important limitation of this research is that since the sampling was conducted solely from Ilkadim, the central urban district of the province of Samsun, the findings are not representative for other cities or Turkey as a whole. Another significant limitation is that data were collected on a self-report basis. The fact that two of the three scales comprise 7-point Likert-type items created a difficulty for middle school students in particular, and this may have affected the reliability of the study data. The final limitation is that cross-sectional studies limit the determination of causality between variables.

CONCLUSIONS

There is a significant relationship among perceived social support, psychological symptoms and future expectations. Even if cross-sectional studies do not permit the determination of which variables are causes, perceived social support from family could reduce adolescents' psychological symptoms and may affect future expectations positively. Longitudinal studies are needed to specify the directionality of the causality.

COMPLIANCE WITH ETHICAL STANDARDS

All requisite permissions and approval for the study were granted by the Ondokuz Mayıs University Clinical Research Ethical Committee and the Samsun Provincial Education Directorate.

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The contribution of the authors:

- conception and design: B. Topaktaş, C. Dündar
- analysis and interpretation of data: B. Topaktaş, C. Dündar, Y. Pekşen
- drafting and critical revision: C. Dündar, Y. Pekşen
- final approval: B. Topaktaş, C. Dündar, Y. Pekşen

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