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Investigating the Relationship between Depression, Negative Automatic Thoughts, Life Satisfaction and Symptom Interpretation in Turkish Young Adults

Yasemin Yavuzer and Zeynep Karataş

Abstract

The purpose of this study is to examine the relationship between depression, negative automatic thoughts, life satisfaction, number of symptoms, psychologizing, somatizing and normalizing in young adults. The mediator role of life satisfaction in the relationship between negative automatic thoughts and depression especially is the major question of this study. Participants are composed of 115 volunteer teacher candidates from an urban Turkish university. Their ages vary between 21 and 29. The data are collected through Beck Depression Inventory, Life Satisfaction Scale, Automatic Thoughts Scale, Symptom Interpretation Questionnaire and Personal Information Form. As a result, it is seen that the depression scores of young adults do not differ according to gender and according to whether they encountered an event causing stress in the past 3 months or not. Another finding is that five variables (negative automatic thoughts, life satisfaction, number of symptoms, psychologizing and normalizing) are significant predictors in explaining the depression level of young adults. Together, these five variables explain 52% of the young adults' depression. Another finding of the study is that negative automatic thoughts of young adults make them negatively assess quality of life and this causes the depression levels to increase.

Keywords: automatic thoughts, life satisfaction, life events, symptom attribution type, depression, young adults

1. Introduction

Quality of life is a concept shaped by how an individual perceives his own life according to the society and culture he lives in. World Health Organization defines quality of life as the individual assessment of one's life positions in the context of their cultural and value systems

in relation to their own personal goals, standards and concerns. This concept has a complex structure encompassing individual's physical health, psychological state, independence level, social relationships, personal beliefs, distinct characteristics and her relationship with the environment [1]. Quality of life is also defined as a concept affecting the level of personal satisfaction that can be achieved under living conditions and showing personal responses to sicknesses and physical, mental and social effects of daily life [2]. As is seen, however we define quality of life, it has a complex structure and mental state has an important part in this structure. In this study, variables like depression, negative automatic thoughts, life satisfaction that is a dimension of subjective well-being, attribution used by people to interpret physical symptoms and life events among the variables related to one's psychological state determining their quality of life and causing them to perceive their life as high-quality or poor-quality are examined.

1.1. Depression

Depression is common mental disorder among individuals that manifests itself as negative thoughts and frustration, despair and reluctance [3]. Although generally associated with feelings of sadness, being solely having feeling of sadness does not require clinical treatment of depression. Depression has a set of significant symptoms other than having feeling of sadness. These symptoms are emotional, cognitive, motivational and physical symptoms. While emotional symptoms manifest themselves as joylessness, loss of interest in normally enjoyable activities and low-self-esteem, cognitive symptoms manifest themselves as pessimism and despair. While motivational symptoms observed in depression can be explained by symptoms like indifference and weariness, physical symptoms presents themselves as difficulty in sleeping, loss of energy and appetite [4]. When theoretical structure related to depression is examined, according to Beck who states cognitive levels and thought processes as causal factors in depression, people with depression develop negative schemata as a result of parental loss, several consecutive tragedies, peer rejection and teacher criticism. Negative schemata or beliefs developed by people with depression activate when they encounter new events closely or remotely resembling the situations where they learned these schemata. Furthermore, negative schemata of depressed people awaken people's biases causing them to distort reality and these schemata are fueled by the aforementioned biases [5]. Beck's cognitive model asserts that depression arises from misinterpretation of one's experiences in a stubborn and negative way. These misinterpretations bring out a negative cognitive triad. This triad includes negative opinions of a person about himself, his world and his future. They see themselves as losers; they see the world as an environment including obstacles that prevents their satisfaction; and they believe that their future does not have any hope for their development [6]. Looking at the world with a negative perspective during the early childhood years teaches individuals to be disappointed. Focusing more on negative sides of the experienced events and life situations that are great sources of stress increase the risk of depression [7]. Depression can also be interpreted as learned helplessness where a person believes that the results of events cannot be controlled [7]. According to Seligman, the reason for depression is the belief that one cannot affect the events in his own life. By learning helplessness, the person believes that events are out of his control. According to behavior scientists, depression symptoms arise

from relationship problems with other people. The decrease in or loss of positive feedback from other people causes depression. If a person's behavior does not receive positive feedback from the others, this person becomes passive and introvert and shows cognitive symptoms of depression [8].

When studies related to depression are examined in the literature, it is seen that the rate of depression among women in developed countries is twice that of men [9]. The studies examining depression in terms of socioeconomic level and culture [10, 11] put forward that the rate of depression is higher at low socioeconomic level and there is a relation between depression and low socioeconomic level [9]. Also, in literature, there are studies examining cultural differences in depression in adults. While the studies showing there is no cultural difference in depression stand out among the studies in literature [12–14], the studies showing there is cultural difference in depression also stand out [15–24]. It was found in one of these studies examining depressive symptoms in Turkey and Canada that the level of depressive symptoms of the Turkish sample was higher than the Canadian sample [24]. In a study on depression using 967 university students from Australia, Iran and Portugal concluded that Australian students were more depressive compared to Iranian and Portuguese students and Iranian students were more depressive compared to Portuguese students [23]. A group of researchers studied depression among the Yoruba people, who are the largest of the three tribes in Nigeria, living in Nigerian countryside, Nigerian cities, Canadian countryside and American cities [22]. They concluded that depression was seen the lowest among the Yoruba living in the Nigerian countryside and the highest living in American cities. In another study, it was asked how they defined depression to the 110 English, South Asian and Caribbean participants in their study group and had found cultural differences [21]. In another research, the depression levels of Koreans, Korean Americans and Caucasian Americans were compared [20]. It was concluded that the depression levels of Koreans were higher compared to the other two groups. A group of researchers in Turkey compared Turkish patients diagnosed with depression living in Germany as migrants and Turkish patients diagnosed with depression living in Turkey [17]. They found that the migrant group's depression symptoms were higher. In another study it compared Turkish and German patients living in Germany and concluded that somatization was higher in Turks [15]. Chinese and American students' depression levels were examined and found that Chinese students' depression levels were significantly higher than American students' depression levels [18]. In a study [22] was compared depression levels in Turkish and English patients diagnosed with major depression and stated that while depressive mood, pessimism and loss of interest and enjoyment was prevalent in English patients, somatic anxiety was prevalent in Turkish patients [16].

1.2. Depression and negative automatic thoughts

Negative automatic thoughts are another important variable of depression. Negative automatic thoughts can be defined as an individual's statements about himself and inner talks with himself. These thoughts most often rise to the surface in certain affective disorders during the perceptions of the situations as a result of various cognitive distortions. The reason why these thoughts are identified as negative is because they cause besetting unpleasant

emotions like sadness, guilt and anxiety [25]. Automatic thoughts form through schemas. Part of Beck's cognitive theory, schemas include the structural organization of thought or certain organized patterns. Schemas provide a basis for shaping cognition. The person evaluates the events, rules, or situations he faces through schemas or gives reactions appropriate to the schemas by reorganizing them. Even though past experiences are important in schemas, consistency in coding that schema is important. Schemas were used by Beck to explain why people with depression insist on hurtful behaviors while they defend themselves. Schemas, also, explain why depressive people generalize negative experiences, remember negative experiences, ignore positive experiences and see the negative experiences [26]. According to Beck, having a depressive schema makes people weak and vulnerable against depression. When depressive schema is active, automatic thoughts are produced in many ways and cognitive distortions are created. According to Beck, negative automatic thoughts are only characteristics of depressive situations. Depression is expressed as a more fundamental and more consistent cognitive weakness factor according to a depressive schema. Based on this model, it is more active in people who have more negative thoughts. This situation can disappear when the created schema becomes ineffective. A person's negative thoughts about himself and his future make them vulnerable against depression cognitively. The worse the depression is the higher the intensity of automatic thoughts. An increase in this kind of intensity in thoughts and a decrease in purposeful and logical thoughts causes depressive situation to increase [27].

1.3. Depression and life satisfaction

Life satisfaction is considered another variable that can be associated with depression. The greater the satisfaction the person gets from life, the stronger his hold on life and his enjoyment from life. When his life satisfaction is low, he will not enjoy life and he can show depressive symptoms. Life satisfaction is a cognitive part of subjective well-being. Thus, first there is need to understand the definition of subjective well-being.

Subjective well-being is a concept concerning with how people experience their lives affectively and cognitively [28] in a state where negative factors do not exist and positive cognitive and mental elements exist [29]. Individual's assessments include his emotional state, affective reactions toward events and judgments regarding life satisfaction. Subjective well-being is composed of three primary components. These components are: (1) cognitively assessing one's satisfaction he gets from life's private and general aspects (2) existence of positive affectivity and (3) lack of negative affectivity [30]. With the components of pleasant emotions, unpleasant emotions and life satisfaction, subjective well-being of people rises depending on the feeling of more pleasant emotions than unpleasant emotions and having positive cognitive judgment regarding their lives [31]. When life satisfaction and affectivity, components of subjective well-being, are examined, it can be said that life satisfaction is a person's subjective assessment of his quality of life and includes cognitive judgments about his own life. It is also a primary component of a person's subjective well-being [32]. In addition, it is stated that life satisfaction is closely related to morale, adjustment and psychological well-being [33]. Affectivity is associated with subjective well-being's affective aspect that includes mental state and emotions related to instantaneous events. While positive reaction to others and

activities generally present pleasant affectivity, unpleasant affectivity includes negative reactions toward others in personal experiences. Emotions like anger, sadness, anxiety, worry, stress, disappointment, guilt, embarrassment, shame and envy underlie negative or unpleasant affectivity. Among the other negative affectivities [23], states like loneliness and helplessness are important symptoms of sickness. Some negative emotions are part of life and are effective in mobilizing individuals. However, observable and continuous negative affectivity can be symptoms of worsening in a person's life [34]. When primary components of subjective well-being explained by Diener et al. [35] are examined, it is seen that while emotions like joy, elation, contentment, pride, affection, happiness and ecstasy are discussed under the positive affect, emotions like guilt and shame, sadness, anxiety and worry, anger, stress, depression and envy are discussed under the negative affect. A person's life satisfaction includes desire to change life, satisfaction with current life, satisfaction with past, satisfaction with future and significant others' views of one's life. Satisfaction domains were grouped under work, family, leisure and health, finances, self and one's group. High subjective well-being of a person depends on that person increasing his satisfaction from life by using satisfaction domains in a healthy way, having more pleasant affects and reactions and less unpleasant affects and reactions.

Life satisfaction is a cognitive component of subjective well-being and is defined as assessment about one's own life [36, 37] and as positive assessment of one's whole life based on criteria determined by oneself [38]. Life satisfaction includes satisfaction from current life, desire to change life, satisfaction from past, satisfaction from future and significant others' views of one's life. Satisfaction domains are work, family, leisure, health, finances, self and one's close surroundings [39]. Life satisfaction is closely linked with psychological health. It is known that life satisfaction of people with good health is higher compared to people with bad health [40]. In the studies conducted, it is seen that people with high life satisfaction have more responsibility in their own different roles, have more satisfaction in romantic relations, school and family domains, have less stress [41] and less emotional loneliness [42], have higher self-esteem [43] and have lower depression, despair and anxiety levels [44]. Furthermore, it was determined that well-being of university students who receive adequate support from their parents and friends and who have positive thoughts about their own futures were higher [45].

1.4. Other variables related to depression

1.4.1. Stressful life events

Another variable related to depression is stressful life events. Traumatic life events, loops, losses, firsts and mosts generally have important place in a person's life. Traumatic life events are the most apparent important cause of psychological disorders. Traumatic life events include separation from parents, lover, spouse or friend, leaving the place he was born and raised or being taken away from that place, loosing loved ones, catching a mental or physical disease, experiencing violent events like war, torture, sexual harassment or rape, experiencing natural disasters like earthquake, flood, erosion and fire and professional, academic and business failures. These kinds of events are more likely to happen to psychiatric patients compared to people who are not sick [46]. Traumatic life events decrease a person's resistance

by disturbing the mental balance of that person and make him prone to psychological disorders [46]. However, just like not everybody experiencing bad events do not develop psychiatric disorders, it is known that many people experiencing bad events do not kill themselves. Therefore, it is stressed that what leads people to kill themselves or to think about killing themselves is not the traumatic events but their strength and skills to cope with these events [47].

1.4.2. Somatic symptoms

Accepted as a factor that makes recognition of depression difficult, somatization is closely related to how a person interprets the physical symptoms he is experiencing and to what he connects them to [48]. According to Robbins and Kirmayer [49], when a person experiences minor physical symptoms, he normalizes them by attributing them to situational conditions like insomnia, eating irregularities, fatigue and environmental stimuli or he perceives them as pathological by attributing them to abnormal mental and physical conditions. Although somatization is associated with various psychiatric disorders, it is mostly known to accompany depression and anxiety disorders. Physical complaints may be the foremost signs of depression. Body aches and pains, intestinal disorders and digestive problems are common [50]. It is argued that 10–30% of psychiatric inpatients and outpatients diagnosed with depression complained about physical symptoms [51]. Since young adulthood represents entrance to adulthood, it is one of the most important turning points in a person's life. During young adulthood, individuals have developmental tasks like spouse selection, learning to live with the spouse, having a family, raising a child, developing career by entering a job, assuming citizenship responsibilities and joining an appropriate social group. It is stated that the most important threat during the first years of adulthood is not to be able to build close and deep relationships and become isolated [52]. Thus, this period is a period when young adults encounter social and physical changes, face many emotional, behavioral, sexual, economic, academic and social conflicts and increase their effort to find their identity with psychosocial and sexual maturity. It is reported that 62% of the university students consult psychological counseling services about depressive symptoms [53]. Depression in adolescents is one of the most common mental disorders that cause serious disruptions in psychosocial and academic functions and to prevent overcoming developmental problems [54]. Therefore, the purpose of this study is to examine the relationship between depression, negative automatic thoughts, life satisfaction, number of symptoms, psychologizing, somatizing and normalizing in young adults. The mediator role of life satisfaction in the relationship between negative automatic thoughts and depression especially is the major question of this study.

2. Method

2.1. Research design and participants

This is a correlational and quantitative research aiming to examine the relations of depression with automatic thoughts, life satisfaction, number of symptoms, psychologizing, somatizing and normalizing in young adults. Participants are composed of 115 volunteer teacher candidates from an urban Turkish university. Whereas 100 of the participants (46.5%) are female, the

remaining 115 (53.5%) are male. Their ages vary between 21 and 29 (Mean ± SD = 24.41 ± 3.04). While 164 (76.3%) of the participants stated that they encountered an event causing stress during the past 3 months, 51 (23.7%) of them stated that they did not encounter an event causing stress during the past 3 months. Thirty four (15.8%) of the 164 participants who stated that they encountered an event causing stress during the past 3 months had health-related problems. Twenty four (11.2%) of them had family-related problems; 25 (11.6%) had problems related to romantic relationships; 13 (6%) had problems with their friends; 11 (5.1%) had school-related problems; and 22 (10.2%) had financial problems. Nineteen (8.8%) of them lost someone close and 16 (7.4%) of them stated that they experienced events like custody or arrest.

2.2. Data collection instruments

Personal Information Form: In the Personal Information Form, the participants were asked about their gender, age and whether they encountered an event causing stress during the past 3 months or not and what kind of event it was.

Beck Depression Inventory (BDI): The inventory, developed by Beck et al. and adapted to Turkish by Hisli [55] has 21 items. There are four subscales (impairment in performance, negative feelings toward one's self, somatic disorders and feeling guilty). Total scores were used in the present study. It was reported that split-half reliability of the scale was 0.74 and criterion-dependent validity was 0.63. Internal consistency coefficient of the scale was 0.80 for this study [55].

Life Satisfaction Scale (LSS): Diener et al. [38] developed the scale and it was adapted to Turkish by Köker [56] and Yetim [57]. The scale is a 7-point Likert-type self-report scale ranging from "Does not apply at all (1)" to "completely applies (7)." It was found that test retest reliability of the scale, which was carried out with 3-week interval, was 0.85. In the present study, internal consistency coefficient of LSS was 0.82 [56].

Automatic Thoughts Scale (ATS): The 30-item 5-point Likert-type ATS was scale developed by Hollan and Kendall [58] and adapted for use in Turkey by Şahin and Şahin [59]. The minimum score is 30 and the maximum score is 150. Higher scores indicate a higher frequency of automatic thoughts. Research on the reliability of the Turkish version calculated its Cronbach's alpha internal consistency coefficient as 0.93. The item total correlations between item scores and total score were calculated as 0.30–0.69 [60]. In the present study the internal reliability was calculated as 0.87. The ATS was developed to identify automatic thoughts associated with depression.

Symptom Interpretation Questionnaire (SIQ): It is a self-report measure that assesses how people interpret common physical symptoms. Respondents are asked to interpret 13 common physical symptoms as either somatizing (physical disorder), psychologizing (emotional distress), or normalizing (normal environmental event) by grading. It was developed by Robbins and Kirmayer [49] and its validity and reliability study was conducted by Duman et al. [48]. The scale was turned into a 5-point Likert-type scale in its Turkish version. Addition of the 14 question to the scale is the second change made to the scale. According to the scale's subscales,

internal consistency coefficient was calculated as 0.87 for somatizing, 0.87 for psychologizing and 0.86 for normalizing.

2.3. Data analysis

Data was analyzed using SPSS v.22.0 for Windows. T-test was used for the examination of the effect of gender and the life events on DS, ATS, SIQ subscales scores and LSS scores. Simple and hierarchical multiple linear regression analyses were used to analyze the data. Before conducting the analyses, assumptions of the multiple linear regressions were tested. It was determined that normality and linearity assumptions of the multiple linear regressions were satisfied. Before analyses, conformity of the data to normal distribution was tested by looking at its skewness and kurtosis values. Skewness values were between 1.06 and −0.45 and kurtosis values were between −0.72 and 1.18. Skewness and kurtosis values should ideally be between +1 and −1 but values between +2 and −2 are considered as acceptable [61]. When testing autocorrelation, the Durbin-Watson coefficient was used. Durbin-Watson values varied between 1.78 and 1.97. Tolerance and VIF values were also within acceptable limits. In addition, as reported in the methodological literature, correlation coefficients between predictor variables that are 0.90 or above [62] or 0.80 or above [63] indicate a multicollinearity problem. In this study, correlation coefficients between predictor variables varied between −0.02 and 0.72. In the present study, mediator role of life satisfaction in the relationship between automatic thoughts and depression was investigated by using Pearson correlation coefficient, simple and multiple linear regression based on Baron and Kenny's [64] proposed conditions. Conditions are as follows: (1) two variables – depression and automatic thoughts should be significantly correlated. (2) suggested mediator variable–life satisfaction–should be correlated with these two variables and (3) when mediator variable had controlled the correlation between the two variables should diminish. The significance of the decay between Beta (β) values were analyzed by using the Sobel test.

3. Results

3.1. Examination of the difference of gender and the stressful life events on DS, ATS, SIQ subscales scores and LSS scores

The findings showed that there were significant gender-based differences in SIQ NS ($t = 2.64$, $p < 0.001$) P ($t = 3.05$, $p < 0.001$) subscale scores and LSS ($t = 2.50$, $p < 0.01$) scores, but not in the DS ($t = 1.39$, $p > 0.05$), ATS ($t = −0.03$, $p > 0.05$) scores and SIQ S ($t = 1.67$, $p > 0.05$), N ($t = 0.57$, $p > 0.05$) subscales scores. These findings indicate that the females had higher SIQ NS and P subscale scores and LSS scores than did the males (**Table 1**). Another finding is that there were significant differences in SIQ NS ($t = 2.29$, $p < 0.01$) subscale scores based on whether the student encountered an event causing stress during the past 3 months. This result shows that the students who encountered an event causing stress during the past 3 months had higher SIQ NS subscale scores than did the students who did not encountered an event causing stress during the past 3 months (**Table 1**).

3.2. The relationships between the study variables

The Pearson product-moment correlation technique was used to explain the relationships between the study variables. The relationships between the study variables, mean values and SDs of the variables are shown in **Table 2**. The findings showed that there were positive correlations between the students' DS and ATS scores ($r = 0.65$, $p < 0.01$), between DS and SIQ NS subscale scores ($r = 0.24$, $p < 0.01$), between DS and SIQ P subscale scores ($r = 0.47$, $p < 0.01$), between DS and SIQ S subscale scores ($r = 0.32$, $p < 0.01$), between DS and SIQ N subscale scores ($r = 0.17$, $p < 0.05$). There was also a negative correlation between the students' DS and LSS scores ($r = 0.50$, $p < 0.01$). Furthermore, it was found that there was no significant relationship between DS scores and age and stressful life event.

	Gender				
	Male ($n = 115$)		Female ($n = 100$)		
	M	*SD*	*M*	*SD*	*t*
Depression Scale	14.62	8.44	16.31	9.23	1.39
Automatic Thoughts Scale	64.60	21.31	65.52	20.22	-0.03
SIQ subscales					
Number of symptoms	7.67	4.05	9.02	3.27	2.64*
Psychologizing	32.16	10.24	36.91	12.52	3.05*
Somatizing	29.61	9.38	31.92	10.79	1.67
Normalizing	34.95	10.21	35.79	11.18	0.57
Life Satisfaction Scale	21.20	6.84	23.39	5.75	2.50*
Did you encounter an event causing stress during the past 3 months?					
	Yes ($n = 164$)		No ($n = 51$)		
	M	SD	M	SD	t
Depression Scale	15.98	8.86	13.58	8.62	1.69
Automatic Thoughts Scale	64.63	19.86	64.35	23.66	0.08
SIQ subscales					
Number of symptoms	8.62	3.67	7.25	3.90	2.29*
Psychologizing	35.12	11.99	31.94	9.85	1.72
Somatizing	31.20	10.33	29.01	9.21	1.35
Normalizing	35.97	10.71	33.31	10.31	1.56
Life Satisfaction Scale	21.87	6.63	23.33	5.69	1.41

SIQ, Symptom Interpretation Questionnaire, *$p < 0.01$.

Table 1. The effect of gender and the life events on DS, ATS, SIQ sub scales scores and LSS scores.

	M	SD	DS	ATS	NS	P	S	N	LSS	AGE	LE
								SIQ sub scales			
DS	15.41	8.84	1.00								
ATS	64.56	20.79	0.65**	1.00							
SIQ subscales											
NS	8.30	3.76	0.24**	0.11	1.00						
P	34.37	11.58	0.47**	0.47**	0.48**	1.00					
S	30.68	10.10	0.32**	0.34**	0.39**	0.70**	1.00				
N	35.34	10.66	0.17*	0.23**	0.28**	0.65**	0.72**	1.00			
LSS	22.22	6.43	−0.50**	−0.48**	−0.13	−0.33**	−0.23**	−0.18**	1.00		
AGE	24.41	3.84	−0.08	−0.10	−0.16*	−0.19**	−0.20**	−0.22**	−0.02	1.00	
LE	0.79	0.42	0.12	0.00	0.16*	0.12	0.09	0.11	−0.09	0.00	1.00

DS, Depression Scale; ATS, Automatic Thoughts Scale; SIQ, Symptom Interpretation Questionnaire; NS, number of symptoms; P, psychologizing; S =somatizing; N, normalizing; LSS, Life Satisfaction Scale; LE, stressful life event, *p < 0.05, **p < 0.01.

Table 2. The relationships between the study variables and their mean ± SDs.

3.3. Predictors of depression

Predictors of depression were examined in six steps using hierarchical multiple regression analysis to consider the correlation coefficients between variables. Gender, age and stressful life event were not included in the regression analysis since they did not create a difference in DS scores and since they were not related to DS scores. The first step evaluated automatic thoughts; the second step life satisfaction; the third step number of symptoms; the fourth step psychologizing; the fifth step somatizing; and the last step normalizing. The analysis results are shown in **Table 3**.

Table 3 shows that five variables (ATS, LSS, SIQ NS, P and N subscales) are significant predictors in explaining the depression level of young adults. The results of the first step of analysis indicate that automatic thoughts had a significant effect (β = 0.65, p < 0.01). The findings also show that automatic thoughts scores account for 42% of the total variance in young adults' depression levels. Furthermore, it appears that the contribution of the life satisfaction entered in the second step of the model was significant (β = −0.24, p < 0.01), accounting for 5% of variance related to depression. Together, these two variables explain 47% of the young adults' depression. The results of the third step of analysis indicate that number of symptoms had a significant effect (β = 0.15, p < 0.01) and explained 2% of the variance. Together, these three variables explain 49% of the young adults' depression. The contribution of the psychologizing entered in the fourth step of the model was significant (β = 0.13, p < 0.05) and explained 1% of the variance. Together, these four variables explain 50% of the young adults' depression. On the other hand, it appears that somatizing, entered in the fifth step, was not a significant predictor (β = −0.05, p > 0.05). It is found that normalizing, which was entered in the last step, was a significant predictor (β = −0.19, p < 0.05) and explained 2% of the variance. Together, these five variables explain 52% of the young adults' depression.

Model	Independent variables	β	t	R^2	R^2_{ch}	F_{ch}
1	ATS	0.65	12.49**	0.42	0.42	156.20**
2	LSS	−0.24	−4.22**	0.47	0.05	17.83**
3	NS	0.15	3.06**	0.49	0.02	9.40**
4	P	0.13	2.08*	0.50	0.01	4.34*
5	S	−0.05	−0.79	0.50	0.00	0.62
6	N	−0.19	−2.53*	0.52	0.02	6.42*

ATS, Automatic Thoughts Scale; LSS , Life Satisfaction Scale; NS, number of symptoms; P, psychologizing; S, somatizing; N, normalizing, *p < 0.05, **p < 0.01.

Table 3. Hierarchical multiple regression analysis results related to predicting young adults' depression scale scores.

3.4. Mediating test results

Regression analysis of the mediating role of life satisfaction in the relationship between automatic thoughts and depression was conducted in three steps [64]. The findings are shown in **Table 4**.

In the first step, automatic thoughts positively and significantly predicted depression (β = 0.65, $p < 0.001$) and explained 42% of the variation. In the second step automatic thoughts negatively and significantly predicted life satisfaction (β = −0.48, $p < 0.001$) and explained 23% of the variance. In the third step, life satisfaction was identified as a mediating variable that negatively and significantly predicted depression (β = −0.24, $p < 0.001$). Life satisfaction and automatic thoughts together explained 47% of the variance. In the third step, it was observed that taken together with the mediator variable (LSS), there was a reduction in the strength of the correlation between the ATS and the DS (see **Table 4**). These findings indicate that LSS partially mediated the relationship between ATS and DS for the young adults (Sobel z = 3.99, $p < 0.001$).

	Variables	β	t
Step 1	ATS	0.65**	12.49**
(DS/dependent variable)	$R = 0.65$, $R^2 = 0.42$, $F = 156.20^{**}$		
Step 2	ATS	−0.48	−7.87**
(LSS/Dependent variable)	$R = 0.48$, $R^2 = 0.23$, $F = 61.99^{**}$		
Step 3	ATS	0.53**	9.42**
(DS/Dependent variable)	LSS	−0.24	−4.22**
	$R = 0.69$, $R^2 = 0.47$, $F = 93.21^{**}$		

DS, Depression Scale; ATS, Automatic Thoughts Scale; LSS, Life Satisfaction Scale, **p < 0.001.

Table 4. Regression analysis of the mediating role of life satisfaction in the relationship between automatic thoughts and depression.

4. Discussion

In this study, the relationships between depression, negative automatic thoughts, life satisfaction that is a part of subjective well-being and attributions used by people while interpreting physical symptoms and life events were examined in a sample of teacher candidates. First, pre-analysis was conducted to determine whether there were gender differences in DS, ATS, SIQ subscales scores and LSS scores. As a result of the analysis, it is found that female teacher candidates' SIQ NS and P subscale scores and LSS scores were higher compared to males (**Table 1**). In addition, SIQ NS subscale scores of teacher candidates who encountered an event causing stress during the past 3 months were higher than the scores of others (see **Table 1**). Depression scores of young adults did not show difference according to gender and whether they encountered an event-causing stress during the past 3 months or not. In literature regarding depression, the studies on gender differences put forward different results. Some studies found that depression levels of males were higher than the females (For example, see [65]); some found that depression levels of females were higher than the males (For example, see [66]) and some found that gender did not create a difference on the depression level (for example, see [67–69]). In literature examining the relationship between stressful life events and depression, it is stated that life events are both stressful and an important risk factor when they accumulate [46, 70]. In his study, independent from personality traits and type of event, Kabakçı [71] found that groups with medium or high-level depression had encountered an event causing high-level stress during the past 6 months compared to the group that did not show depressive symptoms. Similarly, it was found significant relationships between depression and daily social and academic problems. However, it is emphasized that not everybody experiencing stressful life events show depressive symptoms. What causes depression is not having enough strength and ability to cope with these events [47].

In correlation analysis, positive correlation between teacher candidates' DS scores and ATS, SIQ, NS, *P*, S and N subscale scores and negative correlation between their DS scores and LSS scores were found (see **Table 2**). Another finding was that five variables (ATS, LSS, SIQ NS, P and N subscales) are significant predictors in explaining the depression level of young adults (see **Table 3**). Together, these five variables explain 52% of the young adults' depression. The biggest contribution to the prediction of depression scores of young adults came from automatic thoughts with 42%. This finding shows similarity to the study findings stating a relationship between automatic thoughts and depression [67, 72–76]. Automatic thoughts have also been identified as predictors of negative mood states [77] and negative emotions [78]. Automatic thoughts are defined as repeated negative or positive automatic self-statements that an individual repeats to him/herself in certain situations. People generally accept these thoughts as correct without thinking about them critically [79]. How the individual perceives negatively himself, his life experiences and his future is named as "negative trilogy" by Beck and it explains almost all symptoms of depression [80]. A person who is in depression perceives himself as worthless, inefficient, morally handicapped and he blames himself for his negative experiences and he thinks that others do not like him. Furthermore, he thinks that too many things were demanded from him and that the world is full of insurmountable obstacles. He perceives the future as dark, prone to failure and as a hopeless situation [80].

Life satisfaction comes second in the prediction of young adults' depression scores. According to this finding, life satisfaction is a negative predictor of depression. In the literature, there are studies showing negative relationship between depression and life satisfaction [40, 81–85]. Life satisfaction is closely related to psychological health. It was found that people with general anxiety disorder and major depression have lower life satisfaction scores than the general population [83]. The people who have high life satisfaction are those who assess their life events and life circumstances in a positive way. Depression includes affects like pessimism, sadness, hopelessness and loneliness [86]. In this context, life satisfaction being negative predictor of depression is an expected result. The type of symptom attribution has the least contribution to the prediction of depression scores of young adults. The results of analysis indicate that number of symptoms, psychologizing and normalizing were significant predictors in explaining the depression level of young adults. In their study, where they examined the relationship between symptom attribution type and physical symptoms of depression, Güleç et al. [87] found a low relationship between mental attributions of people with depression and depression values. As a result, in their study, they found that the depressive group did not have a tendency to interpret their symptoms using any of the attribution types [87]. The mediator role of life satisfaction on the relation between automatic thoughts and depression especially was the major question of this study. It was found that LSS partially mediated the relationship between ATS and DS for the young adults (see **Table 4**). In other words, negative automatic thoughts of young adults cause them to negatively assess their quality of life and this situation leads to an increase in the depression level. Based on this study, it can be argued for interactions between automatic thoughts, depression and life satisfaction.

In this study, negative automatic thoughts, life satisfaction, stressful life events and symptom attribution types were discussed as predictors of depression. There can be variables (self-esteem, loneliness, resilience, neuroticism, social support, coping strategies etc..) other than this study's variables in explaining depression among young adults. One of the limitations of the study is that the study group is composed of teacher candidates between the ages of 21 and 29 who were not diagnosed with depression. In the future, a clearer picture of the current situation can be drawn by working on a model examining the aforementioned variables and sample group that was diagnosed with depression. Another limitation is that data is based on teacher candidates' self-report. Responses provided by choosing items from the scale may not truly represent real behaviors of the teacher candidates. Therefore, results should be interpreted within the limitations of the scales.

5. Conclusion

Conducted with young adults, this study's findings reveal that negative automatic thoughts, life satisfaction and symptom attribution type (a number of symptoms, psychologizing and normalizing) are significant predictors in explaining depression levels of young adults. In addition, life satisfaction is a partial mediator in the relationship between negative automatic thoughts and depression. As a result negative automatic thoughts of young adults cause them to negatively assess their quality of life and this situation leads to an increase in the depression level.

Author details

Yasemin Yavuzer[1]* and Zeynep Karataş[2]

*Address all correspondence to: yyavuzer@hotmail.com

1 Faculty of Education Department of Guidance and Counselling, Ömer Halisdemir University, Nigde, Turkey

2 Faculty of Education Department of Guidance and Counselling, Mehmet Akif Ersoy University, Burdur, Turkey

References

[1] WHO (2016). Programme on mental health. Measuring quality of life. Retrieved 3 September 2016 from http://www.who.int/mental_health/media/68.pdf.

[2] Akdeniz, C. & Aydemir, Ö. (1999). Adaptatıon and relıabılıty analysıs of health measurement questıonnaıre. Bull.Clin.Psychopharmacol., 9(2), 104–108.

[3] Cicchett, D. & Toth, S. (1998). The development of depression in children and adolescents. American Psychologist, 53, 221–241.

[4] Steinberg, L. (2002). Adolescence. (Sixth Edition). Boston: McGraw-Hill, pp. 444–452.

[5] Davison, G.C. & Neale, J.M. (2004). Abnormal Psychology. (Trans. Ed. İhsan Dağ). Ankara: Turkish Psychologists Association Publications.

[6] Gökçakan, Z. & Gökçakan, N. (2005). Cognitive therapy on depression. Mersin University Journal of the Faculty of Education, 1(1), 91–101.

[7] Erdoğan, G. (2006). The effects of creatıve drama on the self-concept and depressıve symptoms of 8th grade (ages 14–15) students wıth depressıve symptoms. Master's thesis, Gazi University, Ankara, Turkey.

[8] Shapiro, P.G. (1997). Childhood and first youth depression. (Translate. Meral Kesim). İstanbul: Papirüs.

[9] Kesler, R.C., Berglund, P., Demler, O, Jin, R., Karetz, D., Merikangas, K.R. Rush, A.J., Walters, E.E. & Wang, P.S. (2003). The epidemiology of major depressive disorder. Results from the Nationality Comorbitity Survey Replication (NCS-R). Journal of the American Medical Association, 289(23), 3095–3105.

[10] Küçükkendirci, H. (2000). The relationship between socio demographic characteristic and the depression scan results with children depression inventory in the students primary school (Part two). Doctoral dissertation, Selçuk University, Konya, Turkey.

[11] Kaya, B. (2007). Depression: Socio-economic and cultural perspectives. Journal of Clinical Psychiatry, 10(6), 11–20.

[12] Costello, E.J., Costello, A.J., Edelbrock, C., Burns, B.J., Dulcan, M.K., Brent, D.A. & Janiszewski, S. (1988). Psychiatric disorders in pediatric primary care: Prevalence and risk factors. Archives of General Psychiatry, 45, 1107–1116.

[13] Parker, G., Cheah, Y.C. & Roy, K. (2001). Do the Chinese somatize depression? A cross cultural study. Social Psychiatry and Psychiatric Epidemiology, 36(6), 287–293.

[14] Angold, A., Erkanli, A., Farmer, E., Fairbank, J.A., Burns, B.J., Keeler, G. & Costello, E.J. (2002). Psychiatric disorder impairment and service use in rural African and white youth. Archives of General Psychiatry, 59, 893–901.

[15] Ebert, D. & Martus, P. (1994) Somatization as a core symptom of melancolic type depression. Evidence from a cross-cultural study. Journal of Affect Disorder, 32, 253–256.

[16] Uluşahin, A., Başoğlu, M. & Paykel, E.S. (1994). A cross cultural comparative study of depressive symptoms in British and Turkish clinical samples. Social Psychiatry and Psychiatric Epidemiology, 29(1), 31–39.

[17] Akbıyık, İ.D., Mendel, E.G., Önder, E.M. & Cording, C. (1999). The effects of being an "immigrant" on the symptoms of depression of the Turkish people living in Germany. Journal of Crisis, 7(2), 25–29.

[18] Anderson, C.A. (1999). Attributional style, depression and loneliness: a cross-cultural comparison of American and Chinese students. PSBP, 25(4), 482–499.

[19] Twenge, J.M. & Nolen-Hoeksema, S. (2002). Age, gender, race, socioeconomic status and birth cohort differences on the Children's Depression Inventory: A meta-analysis. Journal of Abnormal Psychology, 111(4), 578–588.

[20] Lee, E.E. & Farran, C.J. (2004). Depression among Korean, Korean American and Caucasian American family caregivers. Journal of Transcultural Nursing, 15(1), 18–25.

[21] Lawrence, V., Murray, J., Banerjee, S., Turner, S., Sangha, K., Byng, R., Bhugra, D., Huxley, P., Tylee, A. & Macdonald, A. (2005). Concepts and causation of depression: a cross-cultural study of the beliefs of older adults. The Gerontologist, 46(1), 23–32.

[22] Colla, J., Buka, S., Harrington, D. & Murphy, J.M. (2006). Depression and modernization: a cross-cultural study of women. Social Psychiatry and Psychiatric Epidemiology, 41(4), 271–279.

[23] Khawaia, N.G., Santos, ML, R.R., Habibi, M. & Smith, R. (2011). University students' depression: a cross-cultural investigation. Higher Education Research and Development, 32(3), 392–406.

[24] Karataş, Z. & Tremblay, R.E. (2015). Analyzing the levels of depressive symptoms among secondary school students in Canada and Turkey. Cypriot Journal of Educational Sciences, 10(3), 245–256.

[25] Türkçapar, M.H., Sungur, M.Z. & Akdemir, A. (1994). Cognitive therapies in children and adolescents. Turkish Journal of Child and Adolescent Mental Health, 2(2), 93–100.

[26] Beck, A.T. (1976). Cognitive therapy and the emotional disorders. New York: International University Press.

[27] Bozkurt, N. (1998). The relationship between depression, automatic thoughts and school achievements in high school students. Doctoral dissertation, Dokuz Eylül University, İzmir, Turkey.

[28] Heffron, K. & Boniwell, I. (2014). Positive psychology (Trans. Ed. T. Doğan). Ankara: Nobel.

[29] Diener, E. (1984). Subjective well being. Psychological Bulletin, 95(3), 542–575.

[30] Akın, A. (2013). Subjective well-being. In Current psychological concepts I, Positive psychology (Ed. A. Akın). Sakarya: Sakarya University Educational Sciences Institute Publications.

[31] Tuzgöl Dost, M. (2005). Mental health and subjective well-being. Eurasian Journal of Educational Research, 20, 223–231.

[32] Joshanloo, M. (2013). The influence of fear of happiness beliefs on responses to the satisfaction with life scale. Personality and Individual Differences, 54, 647–651.

[33] McDowell, I. (2010). Measures of self-perceived well-being. Journal of Psychosomatic, 69, 69–76.

[34] Joshi, U. (2010). Subjective well-being by gender. Journal of Economics and Behavioral Studies, 1(1), 20–26.

[35] Diener, E., Suh, E.M, Lucas, R.E., & Smith, H.L (1999). Subjective well-being: three decades of progress. Psychological Bulletin, 125(2), 276–302.

[36] Pavot,W. & Diener, E. (1993). The affective and cognitive context of self reported measures of subjective well-being. Social Indicators Research, 28, 1–20.

[37] Deniz, M.E. (2006). The relationships among coping with stress, life satisfaction, decision making styles and decision self-esteem: An investigation with Turkish University Students. Social Behaviour and Personality, 34(9), 1161–1170.

[38] Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The satisfaction with life scale. Journal of Personality Assessment, 49, 71–75.

[39] Diener, E. & Lucas, R.E. (1999). Subjective well-being: three decades of progress. Psychological Bulletin, 125 (2), 276–303.

[40] Diener, E. & Ryan, K. (2009). Subjective well-being: a general overview. South African Journal of Psychology, 39, 391–406.

[41] Bailey, R.C., & Miller, C. (1998). Life satisfaction and life demands in college students. Social Behavior and Personality, 26(1), 51–56.

[42] Çeçen, A.R. (2007). The Turkish version of the social and emotional loneliness scale for adults (SELSA-S): initial development and validation. Social Behaviour and Personality, 35(6), 717–734.

[43] Yetim, Ü. (2003) The impacts of individualism/collectivism, selfesteem and feeling of mastery on life satisfaction among the Turkish university students and academicians. Social Indicators Research, 61, 297–317.

[44] Gündoğar, D., Sallan Gül, S., Uskun, E., Demirci, S. & Keçeci, D. (2007). Investigation of the predictors of life satisfaction in university students. Journal of Clinical Psychiatry, 10, 14–27.

[45] Doğan, T. (2006). The ınvestıgatıon of the wellness of unıversıty students. H.U. Journal of Education, 30, 120–129.

[46] Eskin, M., Akoğlu, A. & Uygur, B. (2006). Traumatic life events and problem solving skills in psychiatric outpatients: Relationships with suicidal behavior, Turkish Journal of Psychiatry, 17(4), 266–275.

[47] Josepho, S.A., Plutchik, R. (1994). Stress, coping and suicide risk in psychiatric inpatients. Suicide and Life-Threatening Behavior, 24, 48–57.

[48] Duman, O.Y. Usubutun, S. & Göka, E. (2004). Validity and reliability of the Turkish form of symptom ınterpretation questionnaire. Turkish Journal of Psychiatry, 15, 26–40.

[49] Robbins, J.M. & Kirmayer, L.J. (1991). Attributions of common somatic symptoms. Psychological Medicine, 21, 1029–1045.

[50] Özen, E.M., Serhadlı, Z.N.A., Türkcan, A.S. & Ülker, G.E. (2010). Somatization in depression and anxiety disorders. The Journal of Psychiatry and Neurological Sciences, 23(1), 60–65.

[51] Lipowski ZJ. (1990). Somatization and depression. Psychosomatics, 31, 13–21.

[52] Eryılmaz, A. & Ercan, L. (2010). Initiaing romantic ıntimacy at emerging adulthood: Is it intimacy or isolation? Journal of Turkish Psychological Counseling and Guidance, 4(34), 119–127.

[53] Evans, S.W (1999) Mental health services in schools: Utilization, effectiveness and consent. Clininical Psychology Review, 19(2),165–178.

[54] Kaya, M., Genç, M., Kaya, B. & Pehlivan, E. (2007). Prevalence of depressive symptoms, ways of coping, and related factors among medical school and health services higher education students. Turkish Journal of Psychiatry, 18(2), 137–146.

[55] Hisli, N. (1988). A study on the validity of the Beck depression inventory. Journal of Psychology, 6, 118–126.

[56] Köker, S. (1991). Comparison of life satisfaction levels of normal and troubled adolescents. Master's thesis, Ankara University, Ankara, Turkey.

[57] Yetim, Ü. (1993). Life satisfaction: A study based on the organization of personal projects. Social Indicators Research, 29, 277–289.

[58] Hollon, S.D. & Kendall, P.C. (1980). Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. Cognitive Therapy and Research, 4(4), 383–395.

[59] Şahin, N.H. & Şahin, N. (1992). Reliability and validity of the Turkish version of the automatic thoughts questionnaire. Journal of Clinical Psychology, 48,51–57.

[60] Savaşır, I. & Şahin, N.H. (1997). Evaluation in cognitive behavioral therapies: Frequently used scales. Ankara: Turkish Psychologists Association Publications, pp. 29–30.

[61] Karaatli, M. (2006). Regulation and representation of the data: In Kalaycioglu S (editor). SPSS Applied Multivariate Statistical Techniques. Second Edition, Ankara: Asil Publication Distribution, pp. 3–47. (Turkish)

[62] Tabachnick, B.G., & Fidell, L.S. (2001). Using multivariate statistics. Fourth Edition. Boston, MA: Allyn and Bacon.

[63] Stevens, J.P. (2002). Applied multivariate statistics for the social sciences. Fourth Edition. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

[64] Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173–1182.

[65] Tuzcuoğlu, S. & Korkmaz, B. (2001). Investigating the levels of submissive behavior and depression among psychological counseling and guidance university students. M.Ü. Atatürk Journal of Education Faculty Educational Sciences, 14, 135–152.

[66] Yücel, B. Kara, K., Özyalçın, S., Alçalar, N., Özdemir, Ö. & Yücel, A. (2002). Depression, automatic thoughts, alexithymia and assertiveness in patients with tension-type headache. Headache, 42, 194–199.

[67] Aysan, F. & Bozkurt, N. (2000). The relationships beıween students' coping strategies and their negative automatic thoughts and depression levels. Journal of Marmara University Educational Sciences, 12, 25–38.

[68] Donnelly, R., Renk, K., Sims, V.K. & McGuire, J. (2011). The relationship between parents' and children's automatic thoughts in a college student sample. Child Psychiatry and Human Development, 42, 197–218.

[69] Ören, N. & Gençdoğan, B. (2007). The analysıs of the depressıon levels of the lycee students accordıng to some varıables. Kastamonu Education Journal, 15(1), 85–92.

[70] Algül, A., Özşahin, A., Ateş, M.A., Başoğlu, C., Semiz, Ü.B., Ebrinç, S., Doruk, A. Perdeci, Z. & Çetim, M. (2009). The relationship between the menopausal depression and previous depressive episode, and family history of depression, and life events. Bulletin of Clinical Psychopharmacology, 19(1), 247–249.

[71] Kabakçı, E. (2001). Sociotropic/autonomic personality characteristics, life events and depressive symptoms among university students. Turkish Journal of Psychiatry, 12(4), 273–282.

[72] Calvete, E. & Connor-Smith, J.K. (2005). Automatic thoughts and psychological symptoms: A cross-cultural comparison of American and Spanish students. Cognitive Therapy and Research, 29(2), 201–17.

[73] Clarke, D. & Goosen, T. (2009). The mediating effects of coping strategies in the relationship between automatic negative thoughts and depression in a clinical sample of diabetes patients. Personality and Individual Differences, 46, 460–464.

[74] Hjemdal, O., Stiles, T. & Wells, A. (2013). Automatic thoughts and meta-cognition as predictors of depressive or anxious symptoms: A prospective study of two trajectories. Scandinavian Journal of Psychology, 54, 59–65.

[75] Kercher, A.J., Rapee, R.M. & Schniering, C.A. (2009). Neuroticism, life events and negative thoughts in the development of depression in adolescent girls. Journal of Abnormal Child Psychology, 37, 903–915.

[76] Vatanasin, D., Thapinta, D., Thompson, E.A. & Thungjaroenkul, P. (2012). Testing a model of depression among thai adolescents. Journal of Child and Adolescent Psychiatric Nursing, 25, 195–206.

[77] McHugh, K. & Wierzbicki, M. (1998). Prediction of responses to cognitive and behavioral mood inductions. Journal of Psychology, 132, 33–41.

[78] Schniering, C.A. & Rapee, R.M. (2004). The relationship between automatic thoughts and negative emotions in children and adolescents: A test of the cognitive content-specificity hypothesis. Journal of Abnormal Psychology, 113(3), 464–70.

[79] Beck, J.S. (2001). Cognitive Therapy: Basic Principles and Beyond. (Translate. N Hisli Şahin), (Trans. Ed. F Balkaya, A İlden Koçkar), Ankara: Turkish Psychologists Association Publications.

[80] Savaşır, I. & Yıldız, S. (1996). Cognitive-behavioral treatment of depression. In Savaşır I, Boyacıoğlu G, Kabakçı E (editors). Cognitive-Behavioral Therapies. Ankara: Turkish Psychologists Association Publications, pp. 17–49.

[81] Karakuş, M. & Çankaya, İ.H. (2012). Examining a model related to mobbing incurred by teachers. H.U. Journal of Education, 42, 225–237.

[82] Serin, N.B., Serin, O. & Özbaş, L.F. (2010). Predicting university students' life satisfaction by their anxiety and depression level. Procedia Social and Behavioral Sciences, 9, 579–582.

[83] Stein, M.B. & Heimberg, R.G. (2004).Well-being and life satisfaction in generalized anxiety disorder: Comparison to major depressive disorder in a community sample. Journal of Affective Disorders, 79, 161–166.

[84] Yavuzer, Y. & Çivilidag, A. (2014). Mediator role of depression on the relationship between mobbing and life satisfaction of health professionals. The Journal of Psychiatry and Neurological Sciences, 27(2), 115–125.

[85] Yıldırım, A. & Hacıhasanoğlu, R. (2011). Quality of life and effective variables among health care professionals. Journal of Psychiatric Nursing, 2, 61–68.

[86] Köknel, Ö. (2005). Depression, mental depression. Istanbul: Golden Books Publishing.

[87] Güleç, H., Sayar, K. & Özkorumak, E. (2005). Somatic symptoms of Depression. Turkish Journal of Psychiatry, 16(2), 90–96.