

The Investigation of Mindfulness, Cognitive Flexibility and Mental Symptoms of Teacher Trainees

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Abstract

In this study, mindful attention awareness (MAA) and cognitive flexibility (CF) were considered as structures that protect the mental health of teacher trainees. The main purpose of the study is to examine the relationships between mindful attention awareness, cognitive flexibility levels, and mental symptoms of teacher trainees. The sample is consisted of 396 teacher trainees from Turkey. Data were collected by Mindful Attention Awareness Scale, Cognitive Flexibility Inventory, Brief Symptom Inventory. The model was predictive associational survey model. Data analyses were made by Pearson correlation coefficients and multiple linear regression techniques. Significant negative correlations were found between mental symptoms and both mindful attention awareness and cognitive flexibility, especially its control sub-dimension. As a result of regression analysis mindful attention awareness and cognitive flexibility control sub-dimensions together explain 31% of mental symptoms. MAA co-operates with CF as mental health protective structures, and the growth of mindful attention awareness creates positive effects on cognitive flexibility.

Keywords: Mindful Attention Awareness, Mindfulness, Cognitive Flexibility, Mental Symptoms, Emerging Adulthood

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INTRODUCTION

Mental health is a concept that indicates that the individual is healthy in terms of thinking, feeling, and behavior (İkiz, 2020). During emerging adulthood period, individuals struggle with matters such as relationships, work, employment, on the other hand, they are subjected to many stresses and demands such as decreasing family support and increasing independent decision-making responsibility (Matud, Díaz, Bethencourt, & Ibáñez, 2020). It is thought that mental health gains importance in the emerging adulthood period, which coincides with the university years, especially for young people who want to be teachers, is equivalent to the period in which they receive training in faculties of education in Turkey. These young people are teacher trainees. As a matter of fact, studies show that this period, which is characterized by transitions, confusion, and indecision, may create problems for individuals' mental health (Bell & Lee, 2008; Lane, Leibert, & Goka-Dubose, 2017) and state that mental health problems are particularly intense in this period. (Özü, 2020). Consistent with these studies, it was revealed that teacher trainees had problematic internet use and mental symptoms (İkiz, Savcı, Asıcı, & Yörük, 2015) and they may have difficulties in regulating their positive emotions (Asıcı, İkiz, & Karaca, 2018).

Considering that teachers play a key role in the formation of a healthy society (Çapa & Çil, 2000), it is believed that it is necessary to protect and improve the mental health of teacher trainees. For mental health, cognitive flexibility and mindful attention awareness are considered important structures in terms of mental health. Some studies indicate that as mindful attention awareness increases, depression, anxiety, and stress levels decrease (Demir, 2017; Hofmann, Sawyer, Witt, & Oh, 2010). Similarly, some studies highlight the relationship between cognitive flexibility and mental disorders (Kara, 2020; Yazar & Meterelliyoz, 2019). When the literature is examined, no research has been found in which mindful attention awareness, cognitive flexibility, and mental symptoms are discussed together. However, there are scarcely any studies (Özsoy, 2019) evaluating the role of mindful attention awareness on cognitive flexibility, and it is thought that this study will be functional in filling the existing gap in the field.

Accordingly, we handled mindful attention awareness and cognitive flexibility as personality qualities, which effective teacher trainees need to possess to meet the expectancy of becoming healthy teachers in new era, relation between these qualities and try to understand the predictive effects on mental symptoms. Moreover, we tried to figure out the relations between mindful attention awareness and cognitive flexibility and mental symptoms, since mindful attention awareness and cognitive flexibility are believed to be protective factors in mental health.

Mindful attention awareness

The concept of mindfulness is generally used as mindful attention awareness, but also the terms of self-awareness, awareness, and wise awareness are encountered. The effects of mindfulness on psychological disorders are increasingly understood, has become one of the most popular concepts today. This understanding, which existed thousands of years ago, when the name is not mindful attention awareness, is based on the Buddhist teachings of 2500 years. Therefore, it is also known as the heart of Buddhist meditation (Alidina, 2010; Kabat-Zinn, 1994). Its etymological origin suggested that the Pali term Sati is its English translation (Siegel, 2010); the first person to present the English translation using the concept of "Mindfulness" was Rhys Davids (Levey & Levey, 2018). Adapting mindful attention awareness to the therapeutic environment and turning it into an evidence-based practice, Dr. According to Jon Kabat-Zinn (2003), this concept is conceptualized as the deliberate focus of the individual's attention on the present moment and doing this with a non-judgmental and reactive attitude as possible.

Mindful attention awareness refers to the capacity of an individual to deliberately participate in experiences that occur at the moment Coffey & Hartman (2008), is a state of consciousness experienced without prejudices, flexible, attached to a certain emotion or thought, and not identifying with them (Brown, Ryan, & Creswell, 2007; İkiz & Totan, 2012). It includes being alert, bringing all

attention to the present moment experience with acceptance and compassion, recognizing their sensations, and being present in the individual's life (Atalay, 2019), but most people cannot do this and find themselves in thoughts due to distracting factors. At this point, the diminishing awareness of the present creates many problems such as being stuck in automatic and unconscious actions driven by emotions such as fear and insecurity, detached from contact (Kabat-Zinn, 1994). As a matter of fact, studies show that as the level of mindful attention awareness decreases, mental symptoms such as depression and anxiety are seen more (Carmody & Baer, 2007; Demir, 2017; Ülev, 2014). Feldman, Hayes, Kumar, Greeson, & Laurenceau (2007) consistently state that mindfulness is about psychological health and responses to distress.

Especially in recent years, it has been observed that there has been an increase in the effort to include mindful attention awareness in the education process (Lillard, 2011). Studies on this subject show that integrating mindful attention awareness into school culture will create positive effects for both students and teachers (Bernay, 2014; Emerson et al., 2017; Zenner, Herrnleben-Kurz, & Walach, 2014). Therefore, it is thought that increasing the level of mindful attention awareness of teacher trainees will help them to do their work more efficiently by contributing to their mental health and to raise happy, careful, and successful students who are aware of the moment.

Cognitive flexibility

The world of the 21st century, where changes occur extremely quickly and environmental demands become increasingly complex, strengthens the need for cognitive flexibility, which plays an important role in actively adapting to changes, dealing with stressful situations, and solving problems (Martin & Anderson, 1998). The concept of cognitive flexibility, which has been studied since 1990 (Gündüz, 2013), is defined as an important feature of human cognition that enables individuals to adapt by adjusting thoughts and behaviors according to changing environmental and internal conditions (Braver, Paxton, Locke, & Barch, 2009).

Considering the definitions of cognitive flexibility in the literature, the ability of this concept to adapt behaviors flexibly by changing cognitions according to widely changing environmental demands (Armbruster, Ueltzhöffer, Basten & Fiebach, 2012; Cañas et al., 2003; Dajani & Uddin, 2015) and rarely conceptualized beyond this definition (Rende, 2000). However, cognitive flexibility is a multidimensional concept. For example, cognitive flexibility is an aspect of executive function (Dajani & Uddin, 2015; Rende, 2000), an essential element for effective social communication (Martin & Rubin, 1995), and the questioning of dysfunctional thoughts from a clinical perspective. It is considered as the cognitive ability required to restructure them in a more balanced and functional way (Dennis & Vander Wal, 2010).

Studies on cognitive flexibility have shown that a flexible cognition can be easily adapted to social environments, trust in communication ability (Martin & Anderson, 1998), perception of high control in the face of difficult situations, and competence in solving problems (Dennis & Vander Wal, 2010), using the appropriate coping strategy. It reveals that it is associated with effective coping with stressful situations (Bedel & Ulubey, 2015) and happiness (Asıcı & İkiz, 2015). Adherence to rigid thinking styles is stated to cause adjustment disorders (Bilgin, 2009), neuroses, and mental disorders (Altunkol, 2017). Accordingly, it is thought that many types of psychopathology are conceptualized with reduced cognitive flexibility (Masuda & Tully, 2012) and that cognitive flexibility is an effective factor in emotion regulation, it has an important role in mental health (Soltani, Shareh, Bahrainian, & Farmani, 2013; Zaehring, Falquez, Schubert, Nees & Barnow, 2018)

It is stated that cognitive flexibility, which is a multidimensional concept, is basically intertwined with the operations performed with attention (Cañas, Quesada, Antolí & Fajardo, 2003). Since mindful attention awareness depends on (re) investment in the attention of the moment, it has been suggested that a high level of mindful attention awareness may be effective in increasing cognitive flexibility and the individual's ability to think and act in an unusually flexible way in different, new and unusual situations (Moore & Malinowski, 2009). Hence, Sinnott, Hilton, Wood, &

Douglas (2020) established in their study a meaningful relation between mindfulness and cognitive flexibility. At this point, it is thought that the attention to be in the present rather than the past or the future will result in the individual being aware of the current alternatives and a more cognitively flexible mind.

Mental symptoms

Mental symptoms are defined as signs indicating abnormal deviations in cognitive, emotional, and behavioral areas (Öztürk, 2001). These mental symptoms mentioned in the present study are depression, hostility, anxiety, negative self-image, and somatization. Anxiety refers to a forward-looking mood characterized by anxiety because it is out of control (Barlow & Durand, 2016). Depression, on the other hand, is a mood disorder characterized by feelings and thoughts of pessimism, worthlessness, weakness, reluctance (Öztürk & Uşahin, 2011). Somatization is a psychological mechanism in which psychological distress is expressed as physical symptoms (Hurwitz, 2004). The negative self-image that individuals think that others do not like them because they do not like them and that they do not feel comfortable in communicating with them (Yıldız, 2018). Hostility is the constant or frequent feelings of anger, anger, or irritability in response to minor movements or breakages; It is a concept characterized as rude or vengeful behavior (APA, 2013). Studies show that students are exposed to stress more than ever before, this situation results in various mental symptoms including depression, anxiety, behavioral disorders including anger and violence, and their psychological health is at risk (Bernay, Graham, Devcich, Rix & Rubie-Davies., 2016; Napoli, Krech & Holley, 2005; Rix & Bernay, 2015). Perceived stress experience level is also affected by cognitive flexibility and mindfulness levels among university students in Turkey (Ozcan,2019).

School climate and the teacher-child interaction is very important. It is believed that school-based interventions are important, considering that the protection of students' mental health in childhood acts as a buffer against mental disorders that occur in adulthood. Considering the literature, the inclusion of cognitive flexibility and mindful attention awareness, which is also a psychotherapy method, into school culture helps students improve their academic performance, interpersonal communication, attention, and ability to cope with negative situations; it seems to be effective in reducing substance addiction and anxiety levels (Bedel & Ulubey, 2015; İkiz & Uygur, 2019; Özcan & Esen, 2016; Sibinga et al., 2011). And it is understood that mindfulness undertakes a protective role against problematic smartphone and social media use that could cause psychological disorders (Bilgiz & Peker, 2021). Studies asserted that the students' level of a tendency to violence was determined to be increasing as their level of engagement to school decreases (Sağlam ve İkiz, 2017). The teacher is the most fundamental factor for young people's mental health and school attachment. It is indirectly important that university students who receive teacher education have resolved their mental distress, be cognitively flexible and mindful. Therefore, it is thought that teacher trainees, who will be role models for their students, have important roles in this regard. In addition, teacher trainees should be aware of the situations and problems that occur spontaneously and overtly in the school environment; Having the ability to think and act flexibly in new and unusual situations they may encounter in the management and training processes of different student and parent profiles is considered important in order to positively support the spiritual development of both themselves and the students they will train.

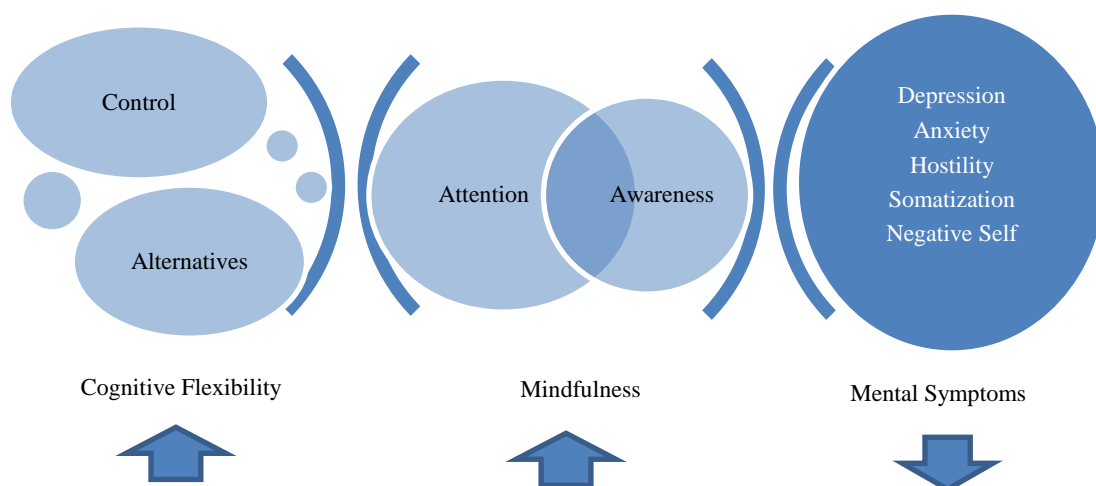


Figure 1. Relations between MAA and CF and mental symptoms

Accordingly, in the present study, the relationships between teacher trainees' mindful attention awareness, cognitive flexibility levels and mental symptoms were examined and answers were sought for the following research problems:

1-Do the mindful attention awareness levels of the teacher trainees significantly predict their psychological symptom levels?

2-Do the cognitive flexibility levels of teacher trainees significantly predict their psychological symptom levels?

3-Do the mindful attention awareness and cognitive flexibility levels of the teacher trainees together significantly predict their mental symptoms?

4-Does the mindful attention awareness levels of the teacher trainees significantly predict their cognitive flexibility levels?

METHODOLOGY

Research Design and Participants

This research is based on predictive associational survey model. Participants are undergraduate students studying at the faculty of education in the 2019-2020 academic year, 298 (75.3%) were female and 98 (24.7%) were male. The average age of the participants is 20.91 (sd = 2.13). Class level of the participants: 45 (11.4%) are first class, 62 (15.7%) are second class, 130 (32.8%) are third class and 159 (40.2%) are fourth class. These demographic characteristics of the participants are given on Table 1 .

Table 1. Demographic Characteristics of Participants

Demographic characteristics	N	%	
Gender	Female	298	75.3
	Male	98	24.7
Class Level	First class	45	11.4
	Second class	62	15.7
	Third class	130	32.8
	Fourth class	159	40.2

Research Instruments

Within the scope of the research, "Mindful Attention Awareness Scale (MAAS)", "Cognitive Flexibility Inventory (CFI)", "Brief Symptom Inventory (BSI)" were used as data collection tools.

Mindful Attention Awareness Scale (MAAS). Developed by Brown & Ryan (2003), MAAS was developed to measure individual differences in the ability to be mindful of what is happening now and be aware of current experiences. MAAS consists of 15 items and is graded in 6-point Likert type (almost always-1, most of the time-2, sometimes-3, rarely-4, very rare-5, almost never-6). The high score obtained from the single-dimension MAAS indicates that conscious mindfulness is high. The adaptation study of the scale into Turkish was conducted by Özyeşil, Arslan, Bıçak & Deniz (2011). The validity and reliability studies of the scale were conducted on 727 university students, and the Cronbach Alpha internal consistency coefficient was found to be .80 and the test-retest reliability coefficient as .86. In this research group, the Cronbach Alpha internal consistency coefficient of MAAS was found as .82.

The Cognitive Flexibility Inventory (CFI). CFI, which was developed by Dennis & Vander Wal (2010), was developed to measure the ability of individuals to question incompatible thoughts and replace them with more balanced, compatible alternative thoughts. CFI consists of two subscales, alternative, and control. CFI consists of 20 items and is graded in 5-point Likert type (not suitable-1, not very suitable-2, unstable-3, suitable-4, completely suitable-5). Items 2, 4, 7, 9, 11, and 17 are reverse-scored items. The scores obtained from the inventory range between 20 and 100 and increasing scores indicate increased cognitive flexibility. The adaptation study of the scale into Turkish was conducted by Gülüm & Dağ (2012). In the adaptation study conducted with 266 Hacettepe University undergraduate students, the Cronbach alpha internal consistency coefficients of the alternatives and control subscales in general of the CFI were determined as .90 for all, and .89 and .85 for the alternative and control subscales, respectively. The Cronbach Alpha reliability coefficient of BEE in this research group was calculated as .88 for all whereas .86 for the alternative sub-dimension and .84 for the control sub-dimension.

Brief Symptom Inventory (BSI). The inventory, which was developed by Derogatis in 1992 and consists of 53 items, was aimed to evaluate the general psychopathology for both clinical and non-clinical samples. The BSI is graded in 4-point Likert type (none-0, some-1, moderate-2, quite-3, very much-4). The score range is 0-212. With the conducted study to determine the validity and reliability of the scale, it was mentioned that the internal consistency coefficients for the sub-dimensions ranged between .71 and .85, and test-retest test reliability coefficients ranged between .68 and .91 (Derogatis & Melisaratos, 1983). The scale was adapted to Turkish by Şahin ve Durak (1994). Studies have found that the inventory consists of five factors: anxiety, depression, hostility, somatization, and negative self. The Cronbach's internal consistency coefficients obtained from the total score of the inventory ranged from 0.96 and 0.95, and the internal consistency coefficients for subscales ranged from .55 to .86. (Şahin & Durak, 1994). In this research group, the Cronbach Alpha reliability coefficient of the BSI was found as .96 for all.

Procedure and Data Analysis

After finalizing the process of collecting data of trainee teachers, the collected data were analyzed through the IBM SPSS 22 software. Pearson Product-Moment Correlation Analysis and Standard Multiple and Statistical Regression Analysis were used in the analysis of data. Required assumptions to conduct the multiple regression analysis were examined before commencing the analysis. Initially, any presence of extreme values that could hamper normality and linearity assumptions were monitored. Accordingly, Mahalanobis distance values were calculated and those values were examined in $p < .001$ scale, which led to an extraction of data of 5 participants which were identified to be exceeding the stipulated threshold value. Skewness and kurtosis values of variables used in the study were identified to be ranging from -2 to +2, exhibiting pertinence to the normal distribution assumption (Tabachnick & Fidell, 2015). Examination of the other assumption of

regression analysis, homoscedasticity, was performed by investigation of scatter plots, and with obtained rectangular shapes (Tabachnick & Fidell, 2015) this assumption was also ensured. Also, since Durbin Watson values were within the limits of 1.5 and 2.5 in the present study, it was established that there was no auto-correlation (Tabachnick & Fidell, 2015), and the error margin of the dependent variable was within acceptable level. In terms of the multiple correlation situation, variance inflation factor (VIF) values, condition index (CI) values, and tolerance values were examined in addition to binary correlation values. As the correlation among predictor variables was lower than .80 (Table 2), VIF value was lower than 10 and tolerance values were higher than 0.2, it was observed that there was no situation of a multi correlation that could cause problems among predictor variables employed in the study. Finally, as a result of conducted examinations, the data set was determined to be consistent with the required conditions of multiple regression analysis.

RESULTS

Findings about relationship among mindful attention awareness, cognitive flexibility and mental symptoms variables included in the study are presented in Table 2.

Table 2. Means, Standard Deviations and Bivariate Correlations Among Variables

	1	2	3	4	5
1. MAAS total	1.000				
2. CFI total	.320**	1.000			
3. Alternative	.248**	.891**	1.000		
4. Control	.306**	.810**	.454**	1.000	
5. BSI total	-.421**	-.414**	-.263**	-.472**	1.000
M	58.42	73.77	51.02	22.75	65.32
SD	11.29	10.48	6.90	5.35	38.22

*: $p < .05$ **: $p < .01$, M: Mean, SD: Standard Deviation.

When correlation results listed in Table 2 were examined, mindful attention awareness and cognitive flexibility levels of participants indicate a positive attitude medium level ($r = .32$; $p < .01$), cognitive flexibility sub-dimension and alternative indicate a positive attitude low level ($r = .25$; $p < .01$), and control sub-dimension indicate a positive attitude medium level ($r = .31$; $p < .01$) meaningful relationship; whereas mindful attention awareness and mental symptoms display a negative attitude medium level ($r = -.42$; $p < .01$) meaningful relationship. There is a negative attitude medium level ($r = -.41$; $p < .01$) meaningful relationship between cognitive flexibility and mental symptoms, while alternative of cognitive flexibility and mental symptoms indicate a negative attitude low level ($r = -.26$; $p < .01$), control sub-dimension and mental symptoms indicate a negative attitude medium level ($r = -.47$; $p < .01$) meaningful relationship.

Table 3. Simple Linear Regression Analysis Results of Mindful Attention Awareness Levels of Trainee Teachers Predicting Mental Symptoms

Independent Variable	Non-Standardized Coefficients Beta (B)	SH _B	Standardized Coefficients Beta (β)	t	P
Constant	148.523	9.202		16.140	.000
Mindful attention awareness	-1.424	.155	-.421	-9.208	.000

$R = .421$ $R^2 = .177$
 $F_{(1,394)} = 84.785$ $p = .000$

Examination of analysis results presented in Table 3 revealed that mindful attention awareness is the meaningful predictor of mental symptoms $R = .421$, $R^2 = .177$, $F = (1,394)$, $p < .01$. The total score mindful attention awareness explains 18% of the total variance related to mental symptoms.

Table 4. Simple Linear Regression Analysis Results of Cognitive Flexibility Levels of Trainee Teachers Predicting their Mental Symptoms

Independent Variant	Non-Standardized Coefficients Beta (B)	SH _B	Standardized Coefficients Beta (β)	t	p
Constant	176.806	12.459		14.190	.000
Cognitive Flexibility Total Score	-1.511	.167	-.414	-9.037	.000

R=.414 R²=.172
 F_(1;.394)= 81.665 p=.000

Examination of analysis results presented in Table 4, it was seen that total score of cognitive flexibility is the predictor of the total score of mental symptoms R=.414, R²=.172, F=(1,394), p<.01. The total score of cognitive flexibility explains 17.2% of the total variance of mental symptoms. After the discovery that the total score of cognitive flexibility was a predictor of the total score of mental symptoms, sub-dimensions of cognitive flexibility were examined to predict the total score of mental symptoms.

Table 5. Multiple Regression Analysis Results of Trainee Teachers' Cognitive Flexibility Sub-Dimension Total Scores Predicting Total Scores of Mental Symptoms

Independent Variants	Non-Standardized Coefficients Beta (B)	SH _B	Standardized Coefficients Beta (β)	t	p
Constant	154.908	12.764		12.136	.000
Alternative	-.341	.276	-.062	-1.238	.216
Control	-3.172	.356	-.444	-8.913	.000

R=.475 R²=.226
 F_(2;.393)= 57.307 P=.000
 *: p<.05 **: p<.01

When analysis results presented in Table 5 were examined, alternative and control variants which are sub-dimensions of cognitive flexibility, explain 23% of total variance related to mental symptoms (R²=.226; p<.01). According to standardized regression coefficients (β), the relative importance sequence of predictor variants on mental symptoms are; control and alternative. And the examination of t-test results related to the meaningfulness of regression analysis coefficients indicates that merely the control variant is a meaningful predictor of mental symptoms.

Table 6. Statistical Regression Analysis Results of Trainee Teachers' Mindful Attention Awareness and Cognitive Flexibility Levels Predicting Total Score of Mental Symptoms

Independent Variants	Non-Standardized Coefficients Beta (B)	SH _B	Standardized Coefficients Beta (β)	t	p
(1st Step)					
(Constant)	142.042	7.415		19.155	.000
Control	-3.372	.317	-.472	-10.627	.000
(2nd Step)					
(Constant)	187.195	9.579		19.543	.000
Control	-2.706	.315	-.379	-8.588	.000
Mindful Attention Awareness	-1.032	.149	-.305	-6.917	.000

1 R=.472 R²=.223 R²Change=.223
 2 R=.554 R²=.307 R²Change=.084
 *: p<.05 **: p<.01

As seen in Table 6, the cognitive flexibility control variant explains 22.3% variance of the single predicted variant. Included at the second place to the analysis in terms of its predicting force, mindful attention awareness was seen to make an 8.4% percent of contribution to the model, whereas both variants together explain 31% of the total variance of mental symptoms scores ($R=.554$, $R^2=.307$).

Table 7. Simple Linear Regression Analysis Results of Mindful Attention Awareness Levels of Trainee Teachers Predicting Cognitive Flexibility Levels

Independent Variants	Non-Standardized Coefficients Beta (B)	SH _B	Standardized Coefficients Beta (β)	t	p
Constant	56.453	2.636		21.418	.000
Mindful Attention Awareness	.296	.044	.320	6.693	.000

$R=.320$ $R^2=.102$
 $F_{(1,394)}=44.798$ $p=.000$

*: $p<.05$ **: $p<.01$

When analysis results presented in Table 7 were examined, it was seen that mindful attention awareness is a meaningful predictor of cognitive flexibility, $R=.320$, $R^2=.102$, $F=(1,394)$, $p<.01$. Mindful attention awareness total score was seen to explain 10.2% of total variance related to cognitive flexibility.

CONCLUSION AND DISCUSSION

Present study examine the relationships between teacher trainees' mindful attention awareness, cognitive flexibility levels, and mental symptoms. Results indicate that mindfulness and cognitive flexibility control sub dimensions together explain %31 of mental symptoms. Besides, mindfulness is stated as a solid predictor variable of cognitive flexibility level.

First of all, results indicate that there is a negative relationship between mindful attention awareness and mental symptoms, and mindful attention awareness explains 18% of the total variance of mental symptoms. In other words, as the level of mindful attention awareness increases, mental symptoms are expected to decrease. Studies investigating the effect of mindfulness on mental symptoms are generally based on mindfulness practices, their findings are consistent (Demir, 2015, 2017; Krusche et al., 2013), MAA is thought to provide positive changes in individuals' mood, happiness and general well-being (Damcı, 2017) and psychological well-being (Deniz et al. , 2017). Consistent with these result, low level of mindful attention awareness is associated with mental symptoms such as depression, anxiety, and somatization (Arslan, 2018; Aydınlı, 2019; Demir, 2015; Ülev, 2014). Masuda and Tully (2012) concluded that mindful attention awareness is one of the structures that affect psychological distress.

When the findings are evaluated in terms of the developmental period, it is stated that the problems related to mental health are especially concentrated in the emerging adulthood period, which coincides with the university period (Özü, 2020). In addition, it is known that the Covid-19 pandemic, which causes great fear in the world, has significant negative effects on the mental health of university students (Salman et al., 2020). All of this necessitates the use of evidence-based interventions to protect the mental health of university students at risk. In this respect, it is thought that the positive effect of mindful attention awareness on mental health as an evidence-based practice with proven effectiveness in the Western medical world is undeniable. Studies also support the positive effect of mindfulness-based practices on the psychological health of university students during the Covid-19 crisis period. (Asl, Emamvirdi, & Colakoglu, 2020).

Secondly, results indicate that there are negatively significant relationships between mental symptoms and cognitive flexibility and alternative and control variables with sub-dimensions, and cognitive flexibility alone explains 17.2% of the total variance of mental symptoms, and the sub-

dimension of control explains 23% of mental symptoms. In this direction, it can be said that individuals who perceive the events that occur in a rapidly changing and increasingly complex life and the difficult situations that need to be dealt with as controllable and who can produce alternative explanations and solutions with a flexible perspective are healthier psychologically. Therefore, it seems that being cognitively flexible is a protective factor against mental disorders. Studies support the negative relationship between cognitive flexibility and mental symptoms (Gündüz, 2013; Kara, 2020; Yu, Yu, & Lin, 2020) that cognitive flexibility has the power to explain depression, obsessive-compulsive, and anxiety (Dağ & Gülüm, 2013). According to the Cognitive Behavioral Theory, the finding regarding the relationship between cognitive flexibility and mental symptoms is an expected result. As a matter of fact, the theory also emphasizes the importance of a versatile and flexible cognition in terms of mental health, consistent with the research findings, and argues that strict adherence to thoughts causes various mental disorders with a strict and narrow perspective (Abrams & Ellis, 1994; Dryden & David, 2008; Sharf, 2011).

In the study, it is seen that only the control sub-dimension of cognitive flexibility has an explanatory power in mental symptoms. The reason why the control sub-dimension has a power to explain mental symptoms is; In psychopathology, when faced with a difficult or stressful situation, it may be that the individual perceives the situation as manageable, that is, control tendency plays a more important role than producing different perspectives and alternatives for it (Dağ & Gülüm, 2013). In this context, it is believed that control tendency plays a more critical role in mental health. In this direction, it is thought that a flexible cognition has a higher perception of control in challenging situations, can produce various solutions by thinking multi-faceted and remain mentally healthier.

Thirdly, results indicate that there are positive relationships between mindful attention awareness and cognitive flexibility and its sub-dimensions, and mindful attention awareness explains 10.2% of cognitive flexibility. In other words, the higher the level of mindful attention awareness, the higher the level of cognitive flexibility. Cognitive flexibility is an aspect of mindful attention awareness (Bishop et al., 2004; Lee & Orsillo, 2014), relationship between mindful attention awareness and cognitive flexibility in the country (Özsoy, 2019) and abroad (Moore & Malinowski, 2009; Moore, 2013; Sinnott et al., 2020) supports the result. It is thought that individuals should be aware of alternative thoughts and options in the present moment by focusing their attention on the present in order to adapt to the situation that occurs suddenly and unexpectedly. Otherwise, living automatically, devoid of the awareness of the present moment, puts individuals at risk of reacting unwise without thinking about various alternatives (Siegel, 2007). In this context, it can be said that individuals are connected to the present moment in order to produce flexible thoughts and behaviors (Al-Jabari, 2012).

Mindful attention awareness allows the unhappy mind, which is dispersed between the past and the future, thinking about things that it cannot change or have no control over, to come to the present moment when it can change things and has the power to control it. With the attention coming to the present moment, the mind gaining awareness of what is happening in the present moment can produce different solutions to the situation, instead of insisting on non-functional solutions, it can create functional solutions. The situation in question is something that it cannot change, thanks to mindful attention awareness, it does not resist and turn into suffering for itself by approaching with an attitude of acceptance to his unpleasant feelings about the situation. In this way, he / she can use his / her ability to change and adapt flexibly to the situation, taking into account the necessities of the situation. All of these are thought to support the view that mindful attention awareness can be effective in cognitive flexibility.

While evaluating the results of this study, its limitations should also be taken into account. One of the limitations of the research is that the sample consists of teacher trainees studying at a single state university. The generalizability of the obtained findings can be increased by creating a larger and diverse sample group with university students studying in different cities and faculties. In addition, it should be kept in mind that the data were collected from a non-clinical group, and this study should not be considered as a clinical study of mental symptoms. In this study, the Mindful Attention and

Awareness Scale (MAAS), which is used to measure awareness, measures the ability to pay attention only to what is happening now and to be aware of current experiences. In future studies, mindful attention awareness can be addressed more comprehensively using a scale that includes both mental awareness signs and other components that predict well-being. According to results, it is suggested that mindfulness and cognitive flexibility psychoeducation programs can be developed to enhance teacher trainees' mental health. In addition, during undergraduate education processes of teacher trainees, mindful attention awareness and cognitive flexibility psychoeducation can be a part of education programs. It is thought that improving the level of mindful attention awareness and cognitive flexibility of who will teach children by shedding light on their path in the future will contribute to the development of educational goals and qualifications in the 21st century.

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