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The Effect of Mindfulness of Physical Education and Sports Teacher Candidates on Empathic Tendency*

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ABSTRACT

The aim of the study is to determine the effect of mindfulness of physical education and sports teacher candidates on the empathic tendency. It was suggested that the mindfulness level of the participants had a positive effect on the empathic tendency. In the research, a theoretical modeling that shows the possible relationships between these variables was created and this model was tested using structural equation modeling. The sample of the study consists of 95 female and 115 male participants studying at the Department of Physical Education and Sports Teaching of Gazi University Faculty of Sport Sciences in the spring semester of 2019-2020. In this research, convenience sampling technique, which is one of the purposeful sampling methods, was used. As data collection tools, "The Empathic Tendency Scale" developed by Lawrance, Shaw, Baker, Baron-Cohen and David (2004) and adapted to Turkish language by Kaya and Çolakoğlu (2015) and "The Mindfulness Scale", which was developed by Brown and Ryan (2003) and adapted to Turkish language by Özyeven, Arslan, Keser and Deniz (2011), were used. When the results of the structural equation modeling between participants' mindfulness and empathic tendency are examined, it was determined that mindfulness did not affect cognitive empathy and emotional empathy ($\beta_1=.13$, $\beta_2=.09$; $p>.05$), but it positively affected social skill ($\beta_3=.15$; $p<.05$). The value of Squared Multiple Correlations (R^2) of the modeling shows that 03% of social skills, 008% of emotional response and 018% of cognitive empathy are explained. As a result of this, it can be stated that the participants being aware of the emotions they experience, experiencing the moment, realizing the tensions in their environment, absorbing for what purpose they perform the task they carry out make it easier for them to communicate with different people, to share physically and socially, and to understand people's feelings and thoughts.

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Keywords:

Mindfulness, empathy, structural equality, sports science, university.

1. Introduction

Teachers are responsible for developing the characteristics of students, who will form the future, such as problem solving, effective communication, reflective thinking (Eacute and Esteve, 2000). This responsibility raises the necessity to question some of the qualifications that teacher candidates should also have as a matter of concern to teachers. It is considered that the level of empathy is also important among the concepts that should be addressed in this context. Since empathy is a communication skill that can be measured and developed with appropriate education (Dökmen, 1990), it is important to determine the level of empathy that should be considered for teachers when they are candidates.

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Empathy, which is treated as a process, is comprehensively addressed by Rogers' definition. According to Rogers, empathy is "the process of a person putting himself/herself in the place of the other, looking at the events from his/her point of view, and understanding the feelings and thoughts of that person correctly, feeling what s/he feels and conveying this situation to him in this direction (Dökmen, 2001). Although it is possible to come across different definitions of empathy as a result of different focuses, today, in general, we can define empathy as a process of a person putting himself/herself in the place of the other and looking at the events from his/her point of view by understanding the feelings and thoughts of that person correctly, and feeling what s/he feels and conveying this situation to him in this direction or as having objective awareness about the feelings and thoughts of others and their meanings and being able to live them as a representation (Budak, 2000). In addition, empathy is a reflex that is born as a response to the emotional state and cognitive state of the individual and provides continuity (Eisenberg and Strayer, 1987).

It is useful to examine the factors that will affect the communication between the teacher and the student who are within the education process. Unlimited communication in the process can of course cause conflicts. Although these conflicts are ignored from time to time, many of them should be and are resolved in favor of teachers or students (Duru, 2002). Ensuring correct communication by removing the conflict environment is important for the education process (Uğur and Çolakoğlu, 2019). Some of these conflicts are from communication. These conflicts must be overcome in order not to negatively affect the quality of education and training. Moving from these points, importance should be given to the studies for the development of empathy, which is an important skill for organizing and developing teachers' relations with their students. In this context, it is thought that the mindfulness level is important for teacher candidates. It is known that mindfulness also regulates behavior with the benefit it provides to regulate emotional responses (Keng, Smoski and Robins, 2011).

Mindfulness is a method of attention orientation from the eastern meditation tradition (Kabat-Zinn, 1994). In this method, the person focuses on what is experienced only by accepting without judgment on the basis of Buddhist philosophy and practices (Bodhi, 2011; Kabat and Zin, 1994; Brown and Ryan, 2003). It is defined as the awareness provided by conscious focus at the moment of living without judgment (Kabat and Zin, 2003). The factor to be considered is the ability to provide "increased" attention and awareness towards the current life (Brown and Ryan, 2003). What lies in the emergence of the concept is the idea that the individual unwittingly detailed the events s/he experienced by being influenced by his/her past experiences and accordingly an unnecessary pain is experienced with the misleading of subjective facts. According to the concept of mindfulness, "remembering" is not to be influenced by the past, but to be able to sustain attention and awareness within the moment experienced (Germer, Siegel, and Fulton, 2005). When the literature is examined, although there are different views in the Turkish meaning or equivalent of the concept of "mindfulness", the concepts of attention, intention and attitude are mentioned in common. Attention refers to focusing and realizing the moment experienced, intention refers to the attention being directed and used purposefully, and the attitude refers to acceptance and not making a judgment in directing attention (Shapiro et al, 2006). Mindfulness can be defined as the coordinated and continuous use of these features.

Many features in the life of individuals play a role in the formation of qualified behavior patterns. Their perspective on innovation directly contributes to this process (Kurtipek and Güngör, 2019). Mindfulness is also important in order to correctly understand what is happening in the person's relationships with different individuals around him/her and in his/her everyday life. Individuals with a high level of mindfulness are one step ahead in focusing themselves on the work they do, working towards a specific goal and adapting to changes in their environment.

Based on these points, in our research, it was aimed to determine the level of mindfulness of students at the Department of Physical Education and Sports Teaching to predict empathic tendency. It is known that high mindfulness helps individuals use harmonious coping strategies (Weinstein, Brown and Ryan, 2009) and is associated with concepts such as self-regulation behaviors and positive emotional states (Brown and Ryan, 2003). In recent years, it is seen that the focus of education is in the literature (Leland, 2015; Stanzus et al, 2017). Mindfulness enables individuals to focus more deeply on the subjects they work on and also contributes to personal development. The high level of mindfulness of teacher candidates will undoubtedly help them to convey their goals in their professional lives. However, having a teacher empathy skill can help students understand. For this reason, it is predicted that a teacher with a high level of mindfulness and

empathy will be more successful. This research is important in order to show the pre-service teachers' mindfulness levels and empathy skills before they start their profession. In addition, it is thought that the results obtained within the scope of the research will contribute to the literature in terms of determining the aspects of prospective teachers that need to be improved.

2. Method

2.1. Research Model and Hypotheses

This study, which aims to determine the power of mindfulness level of students at the Department of Physical Education and Sports Teaching to predict empathic tendency, is a descriptive research using relational screening model. Relational screening model is a research model that aims to determine the presence and/or degree of co-change between two or more variables (Fraenkel and Wallen, 2009; Karasar, 2013). In the research, a model was created as a result of the literature review. This model was tested using structural equation modeling. Structural equation is a combination of factor analysis and regression analysis and is a theoretical structure represented by latent and observed variables (Şimşek, 2007). The hypotheses of the model created in accordance with the purpose of the research as a result of the literature review are given below:

H₁: Mindfulness positively affects cognitive empathy.

H₂: Mindfulness positively affects emotional response.

H₃: Mindfulness positively affects social skills.

2.2. Study Group

The sample of the study consists of a total of 210 participants, 95 of whom (45.2%) are female and 115 (54.8%) are male, studying at the department of Physical Education and Sport Teaching in a public institution providing sports education. 65 (31.0%) of the participants study in the first grade, 34 (16.2%) in the second grade, 48 (22.9%) in the third grade and 63 (30.0%) in the fourth grade. In addition, the average academic success of the participants was determined as 2.89. Purposeful sampling method was used to determine the study group. In the purposeful sampling method, the researcher selects the sampling in accordance with the criteria previously determined and conducts the research (Cohen, Manion and Morrison, 2000).

2.3. Data Collection Tools

Within the scope of the research, The Mindfulness and The Empathetic Tendency Scales as well as personal information form were used as data collection tools.

The Mindfulness Scale was developed by Brown and Ryan (2003) and adapted to Turkish by Özyeven, Arslan, Keser and Deniz (2011). The scale consisting of 15 items in total has a 6-point Likert structure. The internal consistency coefficient of the scale is .80. Cronbach Alpha internal consistency coefficient obtained from the data set used in the study was determined as .86.

The Empathic Tendency Scale was developed by Lawrence, Shaw, Baker, Baron-Cohen and David (2004) and adapted to Turkish by Kaya and Çolakoğlu (2015). The scale is designed in a 5-point Likert structure and consists of 13 items and 3 sub-dimensions. These sub-dimensions are cognitive empathy, emotional response and social skills. While the internal consistency coefficient of the scale was found to be .86 for the whole, it was found to be .61 for the social skills sub-dimension, .75 for the emotional response sub-dimension and .74 for the cognitive empathy sub-dimension. Cronbach Alpha internal consistency coefficients obtained from the data set were determined as .88, .70, .79 and .77, respectively.

2.3.1. Confirmatory Factor Analysis of Measurement Tools Used in the Research

Confirmatory factor analysis results of the The Mindfulness and The Empathic Tendency Scales used in the study are given in the table below.

Table 1. The Mindfulness and The Empathic Tendency Scale confirmatory factor analysis results

Model Fit Index	Perfect Range	Acceptable Range	MS	ETS
χ^2/sd	$0 < \chi^2/sd < 2$	$2 < \chi^2/sd < 5$	2.26	2.42
RMSEA	$0.00 < RMSEA < 0.05$	$0.05 < RMSEA < 0.10$	.07	.08
PGFI	$0.95 < PGFI < 1.00$	$0.50 < PGFI < 0.95$	.66	.60
PNFI	$0.95 < PNFI < 1.00$	$0.50 < PNFI < 0.95$	.68	.64
GFI	$0.90 < GFI < 1.00$	$0.85 < GFI < 0.90$	.89	.91
AGFI	$0.90 < AGFI < 1.00$	$0.85 < AGFI < 0.90$	.58	.86
CFI	$0.95 < CFI < 1.00$	$0.90 < CFI < 0.95$	.91	.90

Schermelleh-Engel & Moosbrugger, 2003; Kline, 2005; Tabachnick & Fidell, 2007; Thompson, 2004; Jöreskog & Sörbom, 1993, Meydan & Şeşen, 2011.

First-level confirmatory factor analysis was applied to test the construct validity of The Mindfulness Scale, and multi-factor confirmatory factor analysis was applied to test the construct validity of The Empathic Tendency Scale. In order to make the analysis results more compatible, covariance assignment was made between the error terms of items 9 and 10 of The Mindfulness Scale. In order to test the construct validity of The Empathic Tendency Scale, multi-factor confirmatory factor analysis was applied. The model index values were renewed with the removal of item 5 in accordance with the recommendations of the Amos 22 package program and are given in Table 1. Therefore, the single-factor structure of The Mindfulness Scale and the three-factor structure of The Empathic Tendency Scale were confirmed.

2. 4. Data Analysis

During the analysis of the data, firstly KMO and Barlett tests were applied and the suitability of the data for factor analysis was tested. KMO value was determined as .87 for The Mindfulness Scale and .82 for The Empathic Tendency Scale. In addition, the result of the Barlett test was determined as significant for the scales used in the study ($p < .001$). Therefore, the suitability of the data for factor analysis has been proved. Afterwards, Shapiro-Wilk test was performed to determine whether the dataset was normally distributed. As a result of the significance of Shapiro-Wilk test, it was found $p < .05$ for the scales used in the research. Upon this, Skewness and Kurtosis values were examined. These values are between -1.5 and +1.5 for all three scales. This shows that the data were normally distributed (Tabachnick and Fidell, 2013). In the study, the demographic characteristics of the participants were shown with percentage and frequency, and the mean scores obtained from the scales were expressed through descriptive statistics.

In the research, the theoretical model created was tested by establishing a structural equation modeling. Structural equation modeling is accepted as the basic method especially in studies where there are multiple relationships between latent and observed variables (Şimşek, 2007; Bayram, 2010). The analyses in this study were carried out using SPSS 22.0, AMOS 22.0 package programs and Excel database program.

3. Results

This section includes the findings obtained by analyzing the data from the study group.

Table 2. Mean scores of participants from The Mindfulness and The Empathic Tendency Scales

Scales	n	Min.	Max.	\bar{x}	S
Cognitive Empathy Sub-Dimension	210	2.00	5.00	4.06	.99
Emotional Response Sub-Dimension	210	1.00	5.00	4.28	.95
Social Skills Sub-Dimension	210	1.50	5.00	3.63	.97
Empathic Tendency Scale	210	1.77	5.00	4.00	.87
Mindfulness Scale	210	1.47	6.00	3.84	.67

The mean score of the participants from the “cognitive empathy” sub-dimension was determined as ($\bar{x}=4.06$), from the “emotional response” sub-dimension as ($\bar{x}=4.28$) and from the “social skills” sub-dimension as ($\bar{x}=3.63$) and the mean score obtained from The Empathic Tendency Scale was determined as ($\bar{x}=4.00$). Also, the

mean score from The Mindfulness Scale is (\bar{x} =3.84). The highest score obtained from the Empathic Tendency Scale sub-dimensions of the Emotional Response sub-dimension of the participants represents the mean score.

Table 3. T-test results of the mean scores of participants from The Mindfulness Scale, The Empathic Tendency Scale and its sub-dimensions according to gender variable

Scales	Gender	n	\bar{x}	S	sd	t	p
Cognitive Empathy S. D.	Female	95	4.15	.57	208	1.76	.07
	Male	115	3.99	.71			
Emotional Response S.D.	Female	95	4.46	.50	208	3.52	.001
	Male	115	4.13	.78			
Social Skills S.D.	Female	95	3.64	.48	208	.06	.95
	Male	115	3.63	.58			
Empathic Tendency S.	Female	95	4.09	.38	208	2.38	.01
	Male	115	3.92	.57			
Mindfulness S.	Female	95	3.73	.74	208	-1.51	.13
	Male	115	3.91	.92			

The mean score of female participants from The Empathic Tendency Scale is (\bar{x} =4.09), and the mean score of male participants is (\bar{x} =3.92). The mean scores of female participants from the cognitive empathy, emotional response and social skill sub-dimensions were calculated as (\bar{x} =4.15, \bar{x} =4.46, \bar{x} =3.64), respectively, while that of male participants were determined as (\bar{x} =3.99, \bar{x} =4.13, \bar{x} =3.63). It was determined that the results of the analysis showed a significant difference in favor of the female participants in the total score of The Empathic Tendency Scale and the mean score obtained from the emotional response sub-dimension, $t(208)=-.01$, $p<.05$; $t(208)=-.001$, $p<.05$. Nonetheless, no significant difference was found between the mean scores of the participants from the cognitive empathy and social skills sub-dimensions and the gender variable, $t(208)=-.07$, $p>.05$; $t(208)=-.95$, $p>.05$. In addition, the mean score of female participants from The Mindfulness Scale is (\bar{x} =3.73) and that of male participants is (\bar{x} =3.93). The results of the analysis show that there is no statistical significance between the mean score of the participants from The Mindfulness Scale and the gender variable, $t(208)=-.13$, $p>.05$.

3.1. Findings for Examining Empathic Tendency with Path Analysis

Correlation analysis was used to test the relationships between "mindfulness" and "cognitive empathy", "emotional response" and "social skills" which are the variables observed when performing the analysis of the data obtained from the study group. The relationships between the variables examined within the scope of the research were examined using the Pearson Moments Product Correlation Analysis method. Analysis results are given in Table 4.

Table 4. Investigation of the relationship between variables with Pearson Moment Product Correlation

Variable	Cognitive Empathy	Emotional Response	Social Skills	Mindfulness
Cognitive Empathy	1			
Emotional Response	.62**	1		
Social Skills	.30**	.33**	1	
Mindfulness	.13**	.05**	.10**	1

When Table 3 is taken into consideration, it was determined that there is a low level and positive relationship between the "cognitive empathy", "emotional response" and "social skills" and "mindfulness" total scores of the participants ($r_1=.13$, $p<.01$; $r_2=.05$, $p<.01$; $r_3=.10$, $p<.01$).

With the examination of the relationships between the latent and observed variables of the research, the predictive effect of the mindfulness variable on the variables "cognitive empathy", "emotional response" and "social skills" was tested by path analysis.

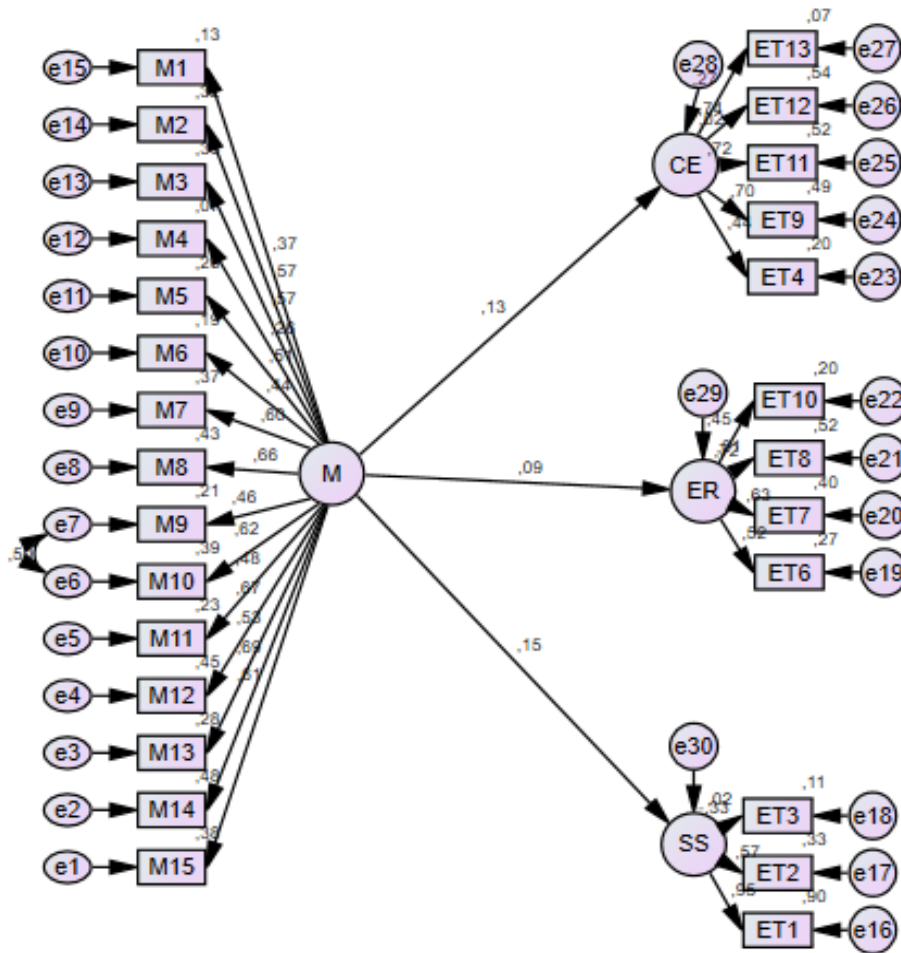


Figure. Structural equation modeling

The fit index values of the model given in Figure 1 are shown in Table 5.

Table 5. Structural equation modeling fit index values

Model Fit Index	Perfect Range	Acceptable Range	YEM
χ^2/sd	$0 < \chi^2/sd < 2$	$2 < \chi^2/sd < 5$	2,38
RMSEA	$0.00 < RMSEA < 0.05$	$0.05 < RMSEA < 0.10$	,08
PGFI	$0.95 < PGFI < 1.00$	$0.50 < PGFI < 0.95$	,70
PNFI	$0.95 < PNFI < 1.00$	$0.50 < PNFI < 0.95$	,62
GFI	$0.90 < GFI < 1.00$	$0.85 < GFI < 0.90$	,89
AGFI	$0.90 < AGFI < 1.00$	$0.85 < AGFI < 0.90$	,86
CFI	$0.95 < CFI < 1.00$	$0.90 < CFI < 0.95$	,94

Schermelleh-Engel & Moosbrugger, 2003; Kline, 2005; Tabachnick & Fidell, 2007; Thompson, 2004; Jöreskog & Sörbom, 1993, Meydan & Şeşen, 2011.

When Table 5 is taken into consideration, it is seen that the goodness of fit values of the model provide the necessary conditions and the model created is verified ($\chi^2/sd= 2.38$, RMSEA= .08, PGFI= .70, PNFI= .62, GFI= .89, AGFI= .86, CFI= .94). Along with examining the fit index values of the model, the paths stated in the model and parameter predictions of the model were examined. coefficients, standard error, critical ratio, p and R2 values between variables are shown in Table 6 according to the model designed.

Table 6. Structural equation modeling results

Variables	Standardize β	Standard Error	Critical Ratio	p	R ²	
Mindfulness	Cognitive empathy	.13	.02	1.14	.14	.018
	Emotional response	.09	.03	1.00	.31	.008
	Social skills	.15	.06	1.96	.04	.024

p<.05

Analysis results show that there is a statistically significant difference in the relationship of mindfulness with social skills ($\beta_3=.15$; $p<.05$). However, no statistical significance was found in the relationship of mindfulness with cognitive empathy and emotional response ($\beta_1=.13$; $p>.05$; $\beta_2=.09$; $p>.05$). In addition to this, when the model's Squared Multiple Correlations (R^2) value is examined, it can be stated that mindfulness explains cognitive empathy by .018%, emotional response by .008% and social skills by .024%. Therefore, while the hypotheses 1 and 2 created within the scope of the research were rejected, the hypothesis number 3 was accepted.

4. Discussion

In this study, a structural equation modeling was designed by determining the levels of mindfulness and the empathic tendency of students studying in physical education and sports teaching. In addition, the mean scores of the participants from the measurement tools were examined according to the gender variable.

Considering the results of the analysis, it can be stated that the level of the empathic tendency of the participants is at a good level. In the study by Rehber and Atici (2009), it was stated that the level of empathic tendency of the participants was above average. In the study of Yağan et al (2018) carried out with university students, it was determined that the participants had the ability to build empathy above the middle level. Gülle (2015) found that the level of empathy of the participants receiving education in higher education institutions that provide sports education is above average. There are similar studies that are in line with the results of the research specified in the literature. Boylu, (2020), Özbaltı (2008), Topçu (2019), Genç and Kalafat (2010), Yılmaz and Akyel (2008), Keçicioğlu (2020) also found that the empathic tendency level of the participants in their studies was above average. Therefore, it can be stated that the relevant literature supports the research results. In the light of the findings obtained, it can be said that the participants love social environments and are comfortable there, they are skilled in understanding the thoughts of the people in front of them, they can easily communicate with different people, and they can be understanding in case of any problem.

When the empathic tendencies of the participants were compared according to the gender variable, it was found that the empathic tendency level of the female participants was statistically significantly higher than that of male participants. When the related literature is examined, it is seen that there are studies supporting the research results (Myry and Helkalma, 2001; Schireman and Gundy, 2000; Boylu, 2020; Eisenberg, Zho and Koller, 2001). However, there are also different studies in the literature where research results are not supported (Erkmen, 2007; Akpınar, Çolakoğlu, Akpınar and Kahraman, 2018; Manger, Eikeland and Sbjornsen, 2001; Yağan, Akpınar, Akpınar and Küçükateken, 2018). Therefore, considering the empathic tendency feature focus, it can be stated that although the sample groups are different in the mentioned studies, the gender variable does not give consistent results and it is difficult to make a generalization in this regard.

In line with the findings obtained from The Mindfulness Scale, it can be stated that the level of mindfulness of the participants is above average. In the study by Amanvermez İncirkuş (2018) that was carried out with teacher candidates, it was stated that the level of the participants' mindfulness was above average. In the study of Özmutlu (2019) on university students, a similar result was reached. Ağlamış (2019) also stated that the level of mindfulness of the participants was above average. Therefore, it can be said that similar studies overlapping the research findings are available and the research results are supported by the literature (Kızılaslan Tunçer, Kınca and Şahin, 2015; Saracaoğlu and Çengel, 2013). In addition, it is possible to state that the participants are aware of the emotions they experience, have no problem focusing on the time period they are in, the work they are dealing with is for a specific purpose and they can control their daily work after focusing on any goal.

In the study, it was found that the level of mindfulness of the participants did not differ according to the gender variable. Sarwar, Yousuf, Hussain and Noreen (2009) determined that mindfulness does not differ by gender. Dilci and Kaya (2012) stated that there was no significant difference between participants' gender and mindfulness levels in their study carried out with teachers. Özsoy, Çakıroğlu, Kuruyer and Özsoy (2010)

concluded that the mean score of cognitive awareness of the participants did not differ significantly by gender. Moore (2009), Kurtipek, Güngör and Yenel (2018); Rahaman (2015) stated that there is no difference between mindfulness and gender. In addition, Sawhney and Bansal (2015) concluded in their study with university students that mindfulness does not differ statistically by gender. From this point, it can be stated that the related literature supports the research results. It is thought that the characteristics of individuals such as subjective control, awareness, and the ability to focus on internal and external stimuli are caused by experience and cultural reasons, regardless of the phenomenon of gender.

Another result obtained in the light of the research findings is that mindfulness does not affect cognitive empathy and emotional responses but affects social skills. Therefore, according to the research results, while the hypotheses 1 and 2 were rejected, the hypothesis 3 was accepted. When the Squared Multiple Correlations (R²) value of the model is examined, it can be stated that mindfulness explains cognitive empathy by %.018, emotional response by %.008 and social skills %.024. When the literature is examined, there are studies investigating the relationship between mindfulness and empathic tendency with different variables (Burke and Hawkins, 2012; Schireman and Gundy, 2000; Greenberg and Harris, 2012; Eisenberg, Zho and Koller, 2001; Zeidan, Johnson, Diamond, David and Goolkasian, 2010; Manger, Eikeland and Sbjornsen, 2001; Singh, Lancioni, Winton, Karazsia and Singh, (2013) while no other research has been found in which the power of mindfulness to predict the empathic tendency was tested. Considering that mindfulness does not affect cognitive empathy and emotional response; It can be said that the features of understanding different people's feelings, noticing people who hide their true feelings, listening to others' problems, and predicting which topics people will talk about are not related to their mindfulness levels. Considering the result that mindfulness affects social skill, it can be stated that the participants being aware of the emotions they experience, experiencing the moment, realizing the tensions in their environment, absorbing for what purpose they perform the task they carry out to make it easier for them to communicate with different people, to share physically and socially, and to understand people's feelings and thoughts. In addition, it can be stated that the mindfulness feature is an important factor on the way to individuals' qualified decision-making process. Therefore, considering that teachers are both a role model and an intermediary in shaping the next generations, it is recommended to establish models with different variables and to use qualitative research methods.

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