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# The Relationship between Pre-service Early Childhood Teachers' Self-Compassion and Self-Regulation: The Moderating Effect of Mindfulness

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**Abstract**

Teacher characteristics are one indicator which might affect teachers' teaching practices. The current study was focused on several characteristics that might have an effect on teaching practices. The aim of this study was to examine the relationship between self-compassion skills, self-regulation skills, and mindfulness scores of pre-service early childhood teachers and reveal the moderator function of mindfulness in the relationship between self-compassion and self-regulation skills. To accomplish this aim, correlational research method was used and multiple regression analysis was applied to data collected from 213 pre-service teachers. Data were collected through four different instruments: "Personal Information Form, Self-Compassion Scale, Self-Regulation Questionnaire, and Mindful Attention Awareness Scale." As a result, a significant relationship between self-compassion and self-regulation skills and a statistically significant relationship between self-compassion skills and mindfulness scores were found. Also, a statistically significant relationship between self-regulation skills and mindfulness scores was revealed. Finally, a moderator effect on the relationship between self-regulation and self-compassion skills of participants was discovered. As a result of the consideration of the related literature, the importance of mindfulness practices for pre-service teachers will be highlighted.

**Key Words**

Mindfulness • Pre-service early childhood teachers • Self-compassion • Self-regulation

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## Introduction

Teachers' psychological well-being is a significant determinant of the quality of teaching (Ahmed & Malik, 2019; Flook et al., 2013; Gustems-Carnicer & Calderón, 2013; McInerney et al., 2015; Panatik et al., 2011). It has been stated in several previous studies that teachers who cannot maintain psychological well-being in teaching, which is a stressful profession, often quit their jobs because of burnout (Buchanan, 2017; Lomas et al., 2017; McCormick & Barnett, 2011). Also, novice teachers can experience high levels of burnout early in first year of their teaching, but this is rooted in the teacher training process (Gavish & Friedman, 2010). For example, in the teacher training process, pre-service teachers should be supported in terms of investigating and understanding their own personality, which can help them feel better prepared at the outset of their teaching careers (Jamil et al., 2012). In this way, it is possible that pre-service teachers can modify their characteristics, adapt to new situations, and develop coping strategies in difficult times (McAdams & Pals, 2006; Rimm-Kaufman & Hamre, 2010). Therefore, although it may seem like a small step to include pre-service teachers in the current study, there is an argument that it can be beneficial for their future teaching experiences as well as make them feel better equipped to face future challenges (Jamil et al., 2012).

There are a variety of factors that can negatively affect teachers' psychological well-being and cause burnout, such as, low income, excessive working hours, heavy workload, high number of students, difficulties with classroom management, negative relationship with their students' parents, and other work pressure (Al-Adwan & Al-Khayat, 2017; Buchanan, 2017; Yaşar- Ekici, 2017). Preschool teachers often have greater responsibilities and uninterrupted working hours compared to other teachers, for example, teaching becomes busier and the teacher's responsibilities increase as the age of students decreases (Akman, et al., 2010). In addition to the academic development of children, it can also be difficult for early childhood teachers due to other responsibilities such as the general development of children as well as addressing their needs, establishing positive relationships with families, providing effective classroom management, which can all be factors that impact ECE teachers' psychological well-being (Akman et al., 2010). For these reasons, pre-service early childhood education (ECE) teachers should become prepared for the aforementioned difficulties through the teacher training process and should also gain knowledge regarding how to ensure their psychological well-being (Jamil et al., 2012; Rimm-Kaufman & Hamre, 2010).

In the related literature, it is mentioned that there are various factors positively influence teachers' psychological well-being as well as prevent burnout such as having high levels of self-compassion, self-regulation, and mindfulness (Abenavoli et al., 2013; Buchanan, 2017; Carmody & Baer, 2008; Chiesa & Serretti, 2009; Elreda et al., 2018; Homan, 2016; Jennings, 2014; Neff & Germer, 2017; Singh & Sharma, 2018; Whitehead, 2011). According to relevant studies in the literature, three factors which have bilateral relations between one another, are frequently used in research with teachers and a wealth of results have been obtained that have benefited teachers (Buchanan, 2017; Geldhof et al., 2010; Neff & Germer, 2017; Singh & Sharma, 2018; Whitehead, 2011). For example, in the following the aforementioned factors are explained one by one and enriching through resources from the literature.

First among the factors mentioned, self-compassion, is defined as one's awareness, acceptance, and tolerance of the self, one's failures, and weaknesses (Neff & Knox, 2016). There are a variety of circumstances that occur in

individuals' lives, and as a result, they can experience a multitude of difficulties and problems. In such situations, individuals need to behave kindly to the self to comfort themselves and decrease the level of suffering as well as minimize their self-isolation (Neff, 2003). In the literature related to self-compassion it has been argued that self-compassion is highly associated with psychological well-being (Neff, 2009). In addition, self-compassion skills are critical for teachers regarding them dealing with work-related problems, increasing their teaching quality, developing positive relationships with students, decreasing their level of stress, and preventing negative physical and psychological outcomes related to stress such as depression and anxiety (Hwang et al., 2019; Jennings, 2015; Neff & Germer, 2017).

The second factor mentioned is self-regulation, which is defined as managing actions, emotions, thoughts, impulses, and/or appetites in the desired way for benefits in both the long and short term (McClelland et al., 2018). Like self-compassion, self-regulation is also described as an effective tool for well-being and mental health (Geldhof et al., 2010). The capacity for self-regulation is seen as an indicator of individuals' psychological well-being due to its contribution to positive relationships with others, personal growth, having an aim in life, and self-acceptance (Singh & Sharma, 2018). Self -regulation skills are significant for teachers for promoting positive relationships with children, developing effective classroom management skills, and providing self-regulated learning experiences for their students (Ertürk, 2013; Kurt & Sığırtmaç, 2021; Randi, 2004).

After self-compassion and self-regulation, the third factor is mindfulness. Mindfulness is defined as taking notice to the current moment with no judgment and was first applied in 1979 as a therapy for patients suffering chronic pain (Kabat-Zinn, 2003). In light of the findings from this therapy, mindfulness practices have been included in several fields such as psychology, medicine, and education (Meiklejohn et al., 2012; Roemer et al., 2008). According to previous studies, mindfulness can reduce stress (Chiesa & Serretti, 2009), promote emotional regulation (Goldin & Gross, 2010), increase psychological well-being (Chiesa & Serretti, 2009), and prevent depression (Hofmann et al., 2010). In addition, mindfulness practices in the field of education are found to increase academic success, attention, memory, and self-confidence (McCallum & Price, 2010; Meiklejohn et al., 2012). Also, it has been stated that burnout in teachers can also be prevented with the help of decreased stress levels (Abenavoli et al., 2013; Buchanan, 2017; Jennings, 2014; Whitehead, 2011). Furthermore, mindfulness practices have been found to positively affect teachers' classroom management skills (Jennings, 2015).

When self-compassion, self-regulation and mindfulness are examined in depth, it has been shown in the literature that these three factors intersect at one point because all the factors have similarly positive effects on the psychology of individuals (Buchanan, 2017; Hofmann et al., 2010; Homan, 2016; Neff & Germer, 2017; Singh & Sharma, 2018; Teasdale et al., 2000; Whitehead, 2011). The aforementioned studies demonstrate that self-compassion, self-regulation and mindfulness meet at common points and benefit teachers by decreasing their levels of depression, anxiety, and stress, promoting mental health, establishing positive relationships with children, developing classroom management skills, and improving psychological well-being (Buchanan, 2017; Chiesa & Serretti, 2009; Ertürk, 2013; Hwang et al., 2019; Kurt & Sığırtmaç, 2021; Neff & Germer, 2017; Randi, 2004; Whitehead, 2011).

In addition to the common benefits of self-compassion, self-regulation, and mindfulness, there are many studies that demonstrate bilateral relations occurring between each other. For example, it is revealed that self-compassion interventions improve self-regulation skills of individuals (Biber & Ellis, 2019; Gale et al., 2014; Kelly & Carter, 2015; Terry & Leary, 2011). In another example, researchers have revealed that there is a positive relationship between self-compassion and mindfulness (Aydın Sünbül & Yerin Güneri, 2019; Flook et al., 2013; McKay & Walker, 2021). Lastly, it has been shown in other studies that the practice of mindfulness positively affects participants' self-regulation skills (Kabat-Zinn, 2003; Tang et al., 2015; Zenner et al., 2014). There have been several studies which support bilateral the relationship between self-compassion, self-regulation, and mindfulness (eg. Aydın et al., 2019; Biber & Ellis, 2019; Kelly & Carter, 2015). However, to our knowledge there has not been a study which has revealed a relationship between these three concepts as well as the moderator role of mindfulness in the relationship between the two other concepts. Therefore, looking at a relationship between three factors, and in particular, examining the moderator role of mindfulness will ultimately contribute to the literature. In addition to contributing to the related literature, the findings of the current study may contribute to teachers' teaching practices. That is, as stated before, self-regulation, self-compassion, and mindfulness contribute to teachers in terms of decreasing stress for mental health, establishing positive relationships with children, improving classroom management skills, and improving psychological well-being (Buchanan, 2017; Chiesa & Serretti, 2009; Ertürk, 2013; Hwang et al., 2019; Kurt & Sığırtmaç, 2021; Neff & Germer, 2017; Randi, 2004; Whitehead, 2011). Thus, with the awareness related to these skills, teachers can realize the different ways to develop their teaching skills or have more secure relationships with children in the classroom. The teacher that is able to regulate his/her feelings and behaviors, accept the self, and focus on the moment without judgments can also help children to develop these skills by creating a classroom environment in accordance with this consciousness. To help teachers be aware of these skills, and their potential for these skills, both undergraduate education and in-service education policies can be planned.

In the light of the literature, the results of which cover a wide range of points, the purpose of the current study was twofold. First, the aim of this study was to discover the relationship between self-compassion skills, self-regulation skills, and mindfulness scores among pre-service early childhood teachers. Second, the study aim was to examine the moderator function of mindfulness on the relationship between self-compassion and self-regulation skills. The examination of these variables is important because it is helpful for pre-service early childhood teachers to understand different ways to deal with difficulties in the classroom as well as increasing their psychological well-being, decreasing their level of stress, and promoting positive relationships with students. In addition, the findings of the current study can aid researchers in designing new approaches for increasing pre-service teachers' well-being.

Therefore, in accordance with aforementioned aims of this study, attempts were made to answer the following research questions:

1. Is there a relationship between pre-service early childhood education teachers' self-compassion and self-regulation skills? If so, in what direction?

2. Is there a relationship between pre-service early childhood education teachers' self-compassion and mindfulness levels? If so, in what direction?

3. Is there a relationship between pre-service early childhood education teachers' self-regulation and mindfulness levels? If so, in what direction?

4. To what extent are pre-service early childhood education teachers' self-compassion skills related to their self-regulation skills, and is this relationship moderated by their mindfulness levels?

To examine these research questions, the researchers utilized a quantitative research design, and in the following section, detailed information regarding the methodology applied will be shared.

## Method

The aim of the current study was to reveal relationships between self-compassion, self-regulation, and mindfulness levels among pre-service ECE teachers as well as determine the moderator role of mindfulness in the relationship between self-compassion and self-regulation. A correlational research design through quantitative research methods was used which enabled the discovery of relationships between variables (Fraenkel & Wallen, 2006). A moderator is a quantitative or qualitative variable that affects the direction and severity of the relationship between the dependent variable and the independent variable (Gürbüz & Şahin, 2016). The Figure 1 displays the moderator relationship model between variables. That is, according to Gürbüz and Şahin (2018), the moderator regression model aims to display the effect of moderator variable on the relationship between dependent variables.

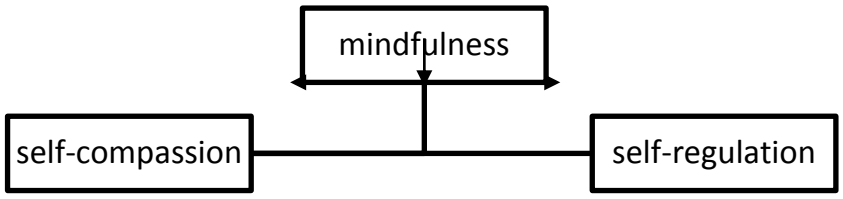


**Figure 1**. The moderator relationship model

### Participants

The participants of the current study were 213 pre-service early childhood education teachers. Pre-service ECE teachers from 10 different public universities were included in this study. There was no missing data in the study due to the researchers utilizing online forms to gather the data. Detailed information regarding the participants is presented in Table 1.

Table 1

*Participant Information*

| Questions | Answers |
|---|---|
| Gender | Female: (n = 192) 90.1% |
| | Male: (n = 21) 9.9% |
| Age | 18-20: (n = 31) 14.5% |
| | 21-23: (n = 146) 68.6% |
| | 24-26: (n = 29) 13.6% |
| | 27-29: (n = 3) 1.4% |
| | 30 and above: (n = 4) 1.9% |
| Year in school | Freshman: (n = 10) 4.7% |
| | Sophomore: (n = 6) 2.8% |
| | Junior: (n = 143) 67.1% |
| | Senior: (n = 54) 25.4% |
| Experience of practicum (term) | 1 term: (n = 148) 69.5% |
| | 2 terms: (n = 19) 8.9% |
| | 3 terms: (n = 46) 21.6% |

**Data Collection Instruments**

In the current study, data were gathered through four different data collection instruments, which included the Personal Information Form, Self-Compassion Scale (Neff, 2003; Deniz, Kesici, & Sümer 2008), Self-Regulation Questionnaire (Brown, Miller, & Lawendowski, 1999; Aydın, Keskin, & Yel 2014), and Mindful Attention Awareness Scale (Brown & Ryan, 2003; Özyeşil, Arslan, Kesici, & Deniz 2011). These scales are the most common used for the variables sought in the current study. For this reason, these scales were accepted to be valid and reliable for use in this study. Prior to the scales being implemented, the necessary permissions were taken by the researchers who adapted the scales into Turkish.

***Personal information form***

The researchers created a Personal Information Form to collect demographic information from participants. The Personal Information Form included questions related to gender, age, year in school, and experience of practicum (term).

***Self-compassion scale***

The Self-Compassion Scale (SCS) was created by Neff in 2003. It includes 26 items with six subscales which are "self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification." It is based on a 5-point Likert scale ranging from 1 to 5 (i.e., 1 = almost never, 5 = almost always). The Cronbach alpha coefficient for the scale is calculated as .92, and the test-retest reliability coefficient is .93 (Neff, 2003). Due to the participants in the current study being Turkish pre-service teachers, the Turkish adaptation of the scales were utilized. For example, the Self-Compassion Scale was adapted to Turkish through a four-phase study that included 341 university students (Deniz et al., 2008). At the completion of the adaptation process, two items were eliminated from the scale. As a result, the new Cronbach alpha coefficient for the adapted scale is .89, and the test-retest reliability coefficient is .83 (Deniz et al., 2008).

***Self-regulation questionnaire***

The Self-Regulation Scale used in this study was developed by Brown et al. (1999), and included 63 items with seven subdimensions such as evaluating information, comparing it to norms and receiving relevant information, triggering change, searching for options, formulating a plan, implementing the plan, and assessing plan effectiveness. It is based on a 5-point Likert scale ranging from 1 to 5 (i.e., 1 = strongly disagree, 5 = strongly agree). The Cronbach alpha coefficient for the scale is calculated as .91 (Brown et al., 1999). In addition, since the current study participants were Turkish pre-service teachers, the Turkish adaptation of the scales was utilized. For example, the Self-Regulation Questionnaire was adapted to Turkish through a study that included 591 university students (Aydın et al., 2014). As a result, at the completion of the adaptation process, the number of questionnaire items and subdimensions was amended. Thus, the adapted version of the questionnaire is made up of 51 items and three subdimensions including self-reinforcement, self-monitoring, and self-evaluation. The new Cronbach alpha coefficient for the adapted scale is .87 (Aydın et al., 2014).

***Mindful attention awareness scale***

The Mindful Attention Awareness Scale (MAAS) developed by Brown and Ryan (2003) was used in this study. The original form of the scale includes 15 items and has no subdimensions. It is based a 6-point Likert scale ranging from 1 to 6 (i.e., 1 = almost always, 6 = almost never). Importantly, a higher score on this scale means that the participant has a high level of mindfulness. The Cronbach alpha coefficient for the scale is calculated as .82, and the test-retest reliability coefficient is .81 (Brown & Ryan, 2003). Since the current study participants were Turkish pre-service teachers, the Turkish adaptation of these scales were utilized. For example, the Mindful Attention Awareness Scale was adapted into Turkish with the participation of university students (Özyeşil et al., 2011). At the completion of the adaptation process, the number of items remained the same. The new Cronbach alpha coefficient of the adapted scale is .80, and the test-retest reliability coefficient is .86 (Özyeşil et al., 2011).

**Data Collection Process**

Prior to conducting the current study, researchers applied for approval from the Human Research Ethics Committee of a State university located in Türkiye. After gaining approval, the scales were transformed into online forms to reach a greater number of participants. As a result, the link to the scales was shared with pre-service early childhood education teachers from different universities. The data were collected in the spring semester of 2021 and following completion of the data collection process, researchers entered data into SPSS 22 Software Package for analysis.

**Data Analysis**

Furthermore, prior to analyzing the collected participant data, the normality distribution of the data obtained through the Self-Compassion Scale (Neff, 2003; Deniz et al., 2008), Self-Regulation Questionnaire (Brown et al., 1999; Aydın et al., 2014), and Mindful Attention Awareness Scale (Brown & Ryan, 2003; Özyeşil et al., 2011) was examined, and as a result, it was determined that the data were within a normal distribution. Since the data showed a normal distribution, parametric tests were used within the analysis process. That is, for correlation analyses used to

detect the relationships between variables, Pearson Correlation was used to find out the relationships between the variables (Pallant, 2020). In addition, to find out if there is a moderator role of mindfulness in the relationship between self-regulation and self-compassion, a moderated multiple regression analysis was conducted to reveal the interactional effects among variables (Shieh, 2009).

Table 2

*Skewness and Kurtosis Values for Normality*

| **Descriptive** | | | |
|---|---|---|---|
| | | Statistic | Std. Error |
| Self-compassion | Skewness | -.298 | .167 |
| | Kurtosis | -.393 | .332 |
| Mindfulness | Skewness | -.389 | .167 |
| | Kurtosis | .165 | .332 |
| Self-regulation | Skewness | -.269 | .167 |
| | Kurtosis | -.289 | .332 |

Data normality can be measured with the help of Skewness and Kurtosis values (Hair at al., 2013). Importantly, if these values fall inside the range of -1 to +1, the assumption can be made that the data is normally distributed. Therefore, as is displayed in Table 2, the data related to self-compassion (skewness: -.298 to .167 and kurtosis: -.393 to .332), mindfulness (skewness: -.389 to .167 and kurtosis: .165 to .332), and self-regulation (skewness: -.269 to .167 and kurtosis: -.289 to .332) was normally distributed. Considering these results, the parametric test was applied in the current study. Thus, Pearson correlation was used to find out the relationships between variables, and a moderated multiple regression analysis was performed with mindfulness as the criterion variable and the three independent variables were self-compassion, self-regulation, and their interaction.

## Results

In the following section, findings are provided to answer the research questions.

### Pre-Service Early Childhood Education Teachers' Self-Compassion, Self-Regulation Skills, And Mindfulness Level

Table 3

*Relationship between Self-Compassion, Self-Regulation Skills, and Mindfulness Level*

| **Variables** | **Mean** | **SS** | **1** | **2** | **3** |
|---|---|---|---|---|---|
| 1.Self-Compassion | 3.2492 | .74569 | | .341** | .625** |
| 2.Mindfulness | 3.9311 | .81004 | .341** | | .418** |
| 3.Self-Regulation | 2.0798 | .95078 | 625** | .418** | |

** Correlation is significant at a 0.01 level (2-tailed).

When Table 3 is examined, it can be seen that there was a statistically significant relationship between pre-service early childhood education teachers' self-compassion and self-regulation skills according to p = .000 < .01.

In this study, the researchers also examined if there was a relationship between pre-service ECE teachers' self-compassion and mindfulness levels. Thus, according to the results of the Pearson correlation, it was observed that there was a statistically significant relationship in the positive direction with consideration of p = .000 < .01.

Finally, the relationship between self-regulation and mindfulness was examined. Similar to the relationship between the other variables, a statistically significant relationship was found between the pre-service ECE teachers' self-regulation skills and mindfulness levels with p = .000 at a .01 alpha level, and the direction of this relationship was positive.

**Moderator Effect Of Mindfulness On Self-Compassion And Self-Regulation Skills**

Table 4

*Moderator Mindfulness on Self-Compassion and Self-Regulation Skills*

| **Dimensions** | **Predictor Valiable: Mindfulness** | | | | |
|---|---|---|---|---|---|
| **Variable** | **B** | **SE** | **β** | **t** | **p** |
| self-compassion | .314 | .060 | .341 | 5.26 | .000 |
| self-regulation | .222 | .033 | .418 | 6.67 | .000 |

In addition to these relationships, the moderator effect of mindfulness was examined regarding pre-service teachers' self-compassion and self-regulation. As is shown in Table 3, the p = .000 displayed a statistically significant relationship between mindfulness and self-compassion at an alpha level of .01. Similarly, when mindfulness and self-regulation were observed, a positive, statistically significant relationship was found with p = .000 at an .01 alpha level

**Moderator effect of mindfulness on the relationship between self-compassion and self-regulation skills**

Table 5

*Moderator Effect on the Relationship between Self-Compassion and Self-Regulation Skills*

| **Dimensions** | **Predictor Valiable: Mindfulness** | | | | |
|---|---|---|---|---|---|
| **Variable** | **B** | **SE** | **β** | **t** | **p** |
| Interaction | 1.87 | .287 | .410 | 6.52 | .000 |

Interaction: self-regulation x self-compassion

Therefore, in accordance with the research aim, not only the relationship between self-regulation, but also self-compassion was examined. Also, the moderator role of mindfulness as part of this relationship was found. As a result, it was determined that the sign value in Table 5 revealed that there was a moderator effect for mindfulness with p = .000 at an alpha level of .01.

Considering these findings, in the following section, the data will be discussed in relation to the relevant literature.

## Discussion, Conclusion & Suggestions

The purpose of the current study was to discover the relationship between self-compassion skills, self-regulation skills, and mindfulness scores of pre-service early childhood education teachers as well as examine the moderator function of mindfulness in terms of the relationship between self-compassion and self-regulation.

In accordance with the study aim, attempts were made answer several research questions. The first research question was to determine the relationship between self-compassion and self-regulation skills of pre-service early childhood education teachers. As a result, it was found that there was a statistically significant relationship between self-compassion and self-regulation skills of pre-service ECE teachers. This positive correlation parallels related literature including a several intervention studies, for example, it is revealed in the literature that self-compassion interventions improve participants self-regulation skills (Biber & Ellis, 2019; Gale et al., 2014; Kelly et al., 2010, 2014; Terry & Leary, 2011). There are a variety of possible explanations for these results. First of all, improvements in participants self-regulation skills along with the self-compassion interventions can be explained by a bilateral positive relationship occurring between the two. In addition, Dundas et al. (2017) argue that the positive relationship can be explained due to personal growth and development of healthy behaviors. Therefore, in the light of these sources, it was possible to observe an increase in self-regulation which was in line with an increase in self-compassion. Even if similar results are provided in previous studies as were determined in the current study, the focus was placed on sample groups with different characteristics. That is, the focus of the current study was placed on pre-service teachers due to their vital role in students' learning and education. Furthermore, during the time as a pre-service teacher, their skills might be supported in ways that would contribute to their future teaching career. Therefore, the results of the current study not only support those from other studies with similar relationships, but also provides a new perspective from different sample groups.

In the second research question, the relationship between self-compassion skills and mindfulness scores of the pre-service early childhood education teachers was queried. It was shown in the results that there was a statistically significant relationship between the self-compassion skills and mindfulness scores of pre-service early childhood teachers which was consistent with the literature (Aydın Sünbül & Yerin Güneri, 2019; McKay & Walker, 2021; Roeser et al., 2013). As a result, the reasons for the relationship between self-compassion and mindfulness may be, as Neff (2003) explains, that mindfulness is a dimension of self-compassion. In addition, the mindfulness dimension can be seen as a subscale of the Self-Compassion Scale (Neff, 2003).

The third research question investigated in this study was the relationship between self-regulation skills and mindfulness scores of pre-service ECE teachers. Importantly, the examination of previous studies shows that mindfulness practices positively affect participants' self-regulation skills (Tang et al., 2015; Zenner et al., 2014). Similarly, it was revealed in the current study that there was a statistically significant relationship between self-regulation skills and mindfulness scores of pre-service early childhood teachers. This result might be explained by the fact that self-regulation of attention is one of the mechanisms of mindfulness (Bishop et al., 2004). Even if the relationship emphasized in previous studies, in the context of ECE pre-service teachers, the study can provide an insight to include mindfulness in undergraduate early childhood education programs to increase the students self-

regulation skills which would ultimately benefit their professional improvement (Butler, et al., 2004), effective teaching (Toussi et al., 2011), job performance (Gol & Royaei, 2013), and anxiety level (Button, 2007).

For the final research question, the researchers attempted to determine whether the pre-service ECE mindfulness levels acted as the moderator effect for the relationship between their self-regulation and self-compassion skills. As a result, it was revealed that the relationship between these factors was moderated by the mindfulness levels of the pre-service early childhood teachers. Furthermore, in the related literature, no study that directly focused on the moderator effect of mindfulness on the relationship between self-regulation and self-compassion was found. Thus, when considering studies regarding these three concepts, whose relationships have already been determined, it was noteworthy that several common issues were focused on. For example, well-being is one of the common issues that was found to be related to self-regulation, self-compassion and mindfulness. In addition, a causal relationship between mindfulness and well-being was also identified in other studies (Bowlin & Baer, 2012; Brown et al., 2007; Keng et al., 2011). Along with the aforementioned studies, which reveal the previously highlighted relationships, some researchers have also focused on the role of self-compassion as part of these relationships. Past researchers investigated whether or not self-compassion is a strong predictor of well-being (Baer et al., 2012; Woods & Proeve, 2014). There are other studies though in which the mediator role of self-compassion is reported as part of the relationship between mindfulness and well-being (Evans et al., 2018; Hollis-Walker & Colosimo, 2011). Moreover, the relationship between well-being and self-regulation is mentioned in the related literature. For example, according to Singh and Sharma (2018), individuals' capacity for self-regulation can be seen as an indicator of their psychological well-being as well as related to improvements in their relationships with others, personal growth, self-acceptance, and having life goals. In other words, it can be stated that self-regulation plays a significant role in individuals' well-being (Geldhof et al., 2010). Thus, even though the primary focus of the current study was not on well-being, it can still be inferred that the relationship between self-regulation, self-compassion along with the moderator role of mindfulness, can be viewed as a source for estimating preservice teachers' well-being.

Therefore, the second of these common issues was related to compelling situations such as stress, depression, anxiety, and burnout. In most studies, researchers reveal the effects of mindfulness practices for decreasing the levels of stress, depression, anxiety, and burnout for participants (Flook et al., 2013; Gold et al., 2010; Hofmann et al., 2010; Khoury et al., 2015; Napoli, 2004; Roeser et al., 2013). Furthermore, in some studies, it has been found that self-compassion is negatively correlated with the previously mentioned compelling situations (Beshai et al., 2018; Ko et al., 2018) as well as that self-compassion is widely used in decreasing stress (Tandler et al., 2019), burnout (Wörfel et al., 2015), depression, and anxiety (Takahashi et al., 2019). Likewise, when the description of self-regulation is examined, it can be seen that self-regulation is also related to compelling situations as it includes managing emotions, thoughts, behaviors, and/or impulses (McClelland et al., 2018). In addition, self-regulation can be seen as an effective tool for individuals' mental health (Geldhof et al., 2010). Thus, according to Zimmerman (2000), self-regulation is associated with monitoring and enhancing individuals' cognitive and affective states. As a result, it can be inferred that individuals can manage their behaviors and reactions by finding practical solutions to problems in their lives. Importantly, the moderator role of mindfulness that is described in the current study can be viewed as a practical solution for enhancing self-regulation and self-compassion and in the long term, can lead to

decreasing the negative effects of stress, anxiety, and depression. As a result, the pre-service years can be an effective time-period when pre-service teachers learn practical solutions including mindfulness as well as also develop their skills in self-regulation and self-compassion.

In conclusion, as was recognized in the aforementioned studies, the skills of mindfulness, self-regulation, and self-compassion are intertwined. In the current study, the relationships between these factors were revealed, and moreover, the moderator effect of mindfulness on the relationship between self-regulation and self-compassion was revealed. Importantly, these intertwined factors are significant items for future teachers to be aware of to better maintain their psychological well-being as well as deal with the compelling situations they experience in their lives. It can be argued that the current study may be a good starting point for more fully understanding the significance of these terms as part of teachers' personal and professional lives.

**Limitations and Suggestions for Further Research**

There were some limitations in the current study that should highlighted. Firstly, the sample size of the study was a limitation due to it being small, and as a result, a small sample size in effect limits the generalizability and interpretation of determined results. In addition, due to most of the participants in this study being female, the homogeneity of the participants in terms of gender was another study limitation. For further research, it is recommended that larger samples with equal distribution in terms of gender should be investigated to better allow for a fully comprehensive analysis of the relationships. Along with these recommendations, in further research some implications for practice need to be considered. For example, inferring from the study findings, it can be suggested that elective courses related to mindfulness be added to the educational program of pre-service teachers. Moreover, mindfulness-based programs should be prepared for teachers to increase their self-regulation and self-compassion skills. Therefore, educators, researchers, and policymakers who focus on the well-being of teachers and teacher quality, need to consider these issues in future research and practice.

**Ethic**

Ethical approval was obtained from Middle East Technical University, Human Research Ethics Committee with protocol number of 134 ODTU 2020.

**Author Contributions**

This article was written with the equal contributions of all authors.

**Conflict of Interest**

The authors declare no conflict of interest in the research.

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