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The investigation of the mediating role of impostor phenomenon in the relationship between maladaptive perfectionism and depression among residents

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Keywords
impostor phenomenon, maladaptive perfectionism, depression, residents

Abstract
Impostor phenomenon is defined as the feeling of fraudulence in spite of high achievements. Maladaptive perfectionism is defined as the perceived discrepancy between high standards and actual performance. Impostor phenomenon and maladaptive perfectionism are common traits among residents. Previous research has shown that both of these traits are associated with depression. The aim of the current study was to investigate the mediating role of the impostor phenomenon in the relationship between maladaptive perfectionism (discrepancy) and depression among residents. Another aim was to investigate whether the relationships between discrepancy, impostor phenomenon and depression differed based on gender. The sample was composed of 213 residents (120 female) from various fields of medical specialties. All participants completed Demographic Information Form, Almost Perfect Scale Revised-Discrepancy Subscale, Impostorism Scale and Beck Depression Inventory. Pearson correlation analyses conducted between discrepancy, impostor phenomenon and depression scores showed that all variables were positively correlated with each other. Mediation analysis did not support the mediating role of impostor phenomenon in the relationship between discrepancy and depression. No significant gender difference in discrepancy, impostor phenomenon and depression scores were found. These findings were discussed in terms of preventions and interventions focusing on reducing discrepancy and impostor phenomenon and increasing the psychological well-being of residents.

Anahtar kelimeler
sahtekârlık fenomeni, uyumsuz mükemmeliyetçilik, depresyon, asistan doktorlar

Öz
Asistan doktorlarda uyumsuz mükemmeliyetçilik ve depresyon arasındaki ilişkide sahtekârlık fenomeninin aracı rolünün araştırılması
Sahtekârlık fenomeni yüksek başarılara rağmen yaşanılan sahtekârlık hissi şeklinde tanımlanmaktadır. Uyumsuz mükemmeliyetçilik ise yüksek standartlar ile gerçek performans arasında algılanan uyuşmazlıktır. Sahtekârlık fenomeni ve uyumsuz mükemmeliyetçilik asistan doktorlarda yaygın olan özelliklerdir. Daha öneki araştırmalar bu iki özelliğin de depresyonla ilişkili olduğunu göstermiştir. Bu araştırmanın amacı asistan doktorlarda uyumsuz mükemmeliyetçilik (uyuşmazlık) ve depresyon arasındaki ilişkide sahtekârlık fenomeninin aracı rolünü incelemektir. Bir diğer amacı ise uyuşmazlık, sahtekârlık fenomeni ve depresyon arasındaki ilişkilerin cinsiyete göre farklılık gösterip göstermediğini araştırmaktır. Bu araştırmanın örneklemi tıbbın farklı uzmanlık dallarında görev yapmakta olan 213 asistan doktordan (120 kadın) oluşmaktadır. Katılımcılar Demografik Bilgi Formu, Neredeyse Mükemmel Ölçeği-Uyuşmazlık Alt Ölçeği, Sahtekârlık Ölçeği ve Beck Depresyon Envanteri'ni doldurmuşlardır. Uyuşmazlık, sahtekârlık fenomeni ve depresyon değişkenleriyle yürütülen Pearson korelasyon analizleri bu değişkenlerin birbirleriyle olumlu bir şekilde ilişkili olduğunu göstermiştir. Aracı değişken analizinin sonuçları, sahtekârlık fenomeninin uyuşmazlık ve depresyon arasındaki ilişkideki aracı rolünü desteklememiştir. Uyuşmazlık, sahtekârlık fenomeni ve depresyon düzeylerinde cinsiyet açısından anlamlı bir fark bulunmamıştır. Bu bulgular, uyuşmazlık ve sahtekârlık fenomenini azaltmaya ve psikolojik iyiliği arttırmaya yönelik önlemlerin ve müdahalelerin asistan doktorlarda yararlı olabileceği doğrultusunda tartışılmıştır.

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Early in the literature, perfectionism was construed as a negative unidimensional construct associated with adverse effects. Hamachek (1978) was first to recognize perfectionism as comprising two categories: normal and neurotic. Even though both normal and neurotic groups had high standards, normal perfectionists are satisfied when they meet the high standards whereas neurotic perfectionists are not satisfied with and even critical of their performance. Later in the literature, perfectionism was conceptualized as a multidimensional construct with positive dimensions. In their review, Stoeber and Otto (2006) distinguished between positive and negative dimensions of perfectionism and indicated that positive perfectionism includes high personal standards, self-oriented perfectionism, and conscientious perfectionism while negative perfectionism includes concerns over mistakes, doubts about actions and perceived discrepancy between high standards and actual performance.

In an attempt to understand the perfectionism construct better, Slaney and Ashby (1996) conducted a qualitative study with individuals who were considered as perfectionists by themselves or close others. Interviews with these participants revealed three common characteristics of perfectionists: high personal standards, order and discrepancy between high standards and actual performance. High personal standards and order dimensions were identified as adaptive perfectionism whereas the discrepancy dimension was recognized as an indicator of maladaptive perfectionism (Slaney et al., 2001).

Various studies have found that maladaptive perfectionism including concerns over mistakes, doubts about actions, socially prescribed perfectionism and perceived discrepancy between high standards and actual performance is associated with psychopathology, especially depression. As the central component of maladaptive perfectionism, discrepancy was shown to be an important antecedent of depression (Rice & Aldea, 2006; Rice et al., 1998; Sherry et al., 2013; Wang & Zhang, 2017).

Even though the link between perfectionism and depression was mostly studied in university students, some studies focused on more susceptible populations such as medical students and professionals (Crăciun & Dudău, 2014; Craiovan, 2014; Seeliger & Harendza, 2017). Physicians and medical students are especially prone to have perfectionism as the society tends to expect perfection from them (Loxterkamp, 2013). Whether being a perfectionist is good or not for the physicians' well-being, the patients' interests and the whole healthcare system has been studied (Wallace et al., 2009). According to Kelly (2015), perfectionism in orthopedic surgeons was related with negative characteristics such as less energy and self-care, restrained relationships, procrastination, fear of failure, lower happiness, and satisfaction; and negative situations for their patients including referral of average cases and deferral of challenging cases. Moreover, it was stated that perfectionist surgeons often have cognitive distortions including ignoring the positive outcomes, black and white thinking, personalization and labeling.

A study conducted with U.S. medical students indicated that significant levels of distress, depression and suicidal ideation were experienced by nearly one quarter of the participants (Compton et al., 2008). Another study showed that depression and anxiety symptoms among medical students were strongly predicted by maladaptive perfectionism (Seeliger & Herandza, 2017). Furthermore, a study conducted with physicians and nurses revealed that perfectionism, perceived stress, burnout, and psychopathological symptoms were positively associated (Craiovan, 2014). Craiovan (2014) discussed that physicians and nurses with high perfectionism are more susceptible to perceive situations as more stressful. As they set unrealistically high standards, they may generate stressful situations and become more likely to have burnout and psychopathological disorders including depression.

Other than depression, perfectionism has also been found to be associated with impostor phenomenon (Dudău, 2014; Henning et al., 1998). The impostor phenomenon was described as "an internal experience of intellectual phoniness that those who feel fraudulence and worthlessness in spite of outstanding academic or professional accomplishments have" (Clance, 1985, as cited in Fujie, 2010, p. 1). Clance and Imes (1978) first recognized the impostor phenomenon in their clinical practice with high-achieving women. In Clance's following studies, it was shown that despite their accomplishments, women with impostor phenomenon had trouble in internalizing their success. These women attributed their success to external or temporary reasons such as error, luck, charm, or hard work instead of competence whereas they attributed their failure to internal or stable factors such as lack of intelligence (Clance & O'Toole, 1987). Moreover, they had a fear of failure, difficulty in accepting positive feedback while readily accepting negative feedback as an indicator of their incompetence, and they were afraid that others would eventually find out that they were not as competent as they seemed to be (Clance & O'Toole, 1987).

The development of the impostor phenomenon among women was thought to be associated with the female gender role-socialization in the society and

family (Clance et al., 1995). As success and competency are more readily attributed to men, women are less expected to have success (Deaux, 1976). Deaux (1976) posited that while an expected outcome is attributed to a stable cause, an unexpected outcome is attributed to a temporary cause. Within this attributional framework, when high-achieving women are not expected to be successful, they are likely to attribute their success to external or temporary factors (Clance & Imes, 1978). Moreover, according to Clance (1985), once the impostor phenomenon is developed, it is maintained by the impostor cycle. When impostors are faced with an achievement-related task, they either overprepare or procrastinate first and then put excessive effort in the last minute. When the task is accomplished, they attribute their success to hard work (overpreparation) or luck (excessive effort in the last minute) rather than the true ability which perpetuates impostor feelings.

Although the impostor phenomenon was first recognized as a construct predominantly observed among high-achieving women, evidence regarding gender differences is mixed. While some studies indicated that women are more likely to experience impostor phenomenon compared to men (Cusack et al., 2013; McGregor et al., 2008), other studies did not show this difference (Castro et al., 2004; Cokley et al., 2013; Cozzarelli & Major, 1990; Leary et al., 2000). The majority of the studies that found no gender difference in impostor phenomenon were conducted among undergraduates. Most of the studies that included medical students and professionals found significant gender differences indicating that women reported higher impostor phenomenon compared to men (e.g. Armstrong & Shulman, 2019; Henning et al., 1998; Legassie et al., 2008; Oriel et al., 2004; Prata & Gietzen, 2007; Villwock et al., 2016).

Dudău (2014) asserted that perfectionism and impostor phenomenon may coexist as both traits share common features such as perceived underperformance, fear of failure, setting high standards and being detail-oriented. This relationship has been confirmed in undergraduates (Cusack et al., 2013; Dudău, 2014; Thompson et al., 2000). There are also some studies that assessed the relationships between impostor phenomenon, maladaptive perfectionism and depression among medical students and professionals. Oriel et al. (2004) investigated the prevalence of impostor phenomenon and its relationship with depression and anxiety among family medicine residents. Results showed that 41% of female participants and 24% of male participants were found as impostors and impostor phenomenon was strongly associated with depression and anxiety. Henning et al. (1998) assessed the associations between impostor feelings, perfectionism, and psychological distress among medical, dental, nursing and pharmacy undergraduates. They found that approximately 30% of the participants had clinical range of impostor feelings and significantly more female participants reported higher impostor scores than male participants. Moreover, perfectionism, impostor feelings and psychological distress were found to be strongly associated in each group of students, and psychological adjustment was predicted by perfectionism and impostor feelings. Finally, in a recent study, Hu et al. (2019) assessed maladaptive perfectionism, impostor phenomenon, depression, anxiety, and negative emotions (shame, embarrassment, inadequacy) among medical students. They demonstrated that negative emotions were significantly higher among participants with maladaptive perfectionism and participants with impostor phenomenon. Furthermore, higher depression and anxiety were more likely to be reported by participants with high negative emotions than participants without these emotions.

In the light of the studies mentioned above, it can be concluded that the relationships between maladaptive perfectionism, impostor phenomenon and depression are well established and commonly observed among medical professionals, especially residents. However, to our knowledge, no studies specifically investigated the role of impostor phenomenon in the relationship between maladaptive perfectionism and depression among residents. The relationship between maladaptive perfectionism and depression might be partly due to the contribution of impostor phenomenon. Residents' setting high standards may create doubts about their ability to meet these standards as well as fear that they will come across as frauds if they fail to meet these standards which in turn, might increase depression. Thus, the present study was aimed to examine a mediation model suggesting that maladaptive perfectionism defined as the discrepancy between high standards and actual performance leads to impostor phenomenon including chronic doubts about ability and feelings of fraudulence despite of high achievements which thereby intensifies depression among residents. It was also aimed to investigate whether the relationships between discrepancy, impostor phenomenon and depression differed based on gender. Because of the fact that the impostor phenomenon was first recognized as a construct predominantly observed among successful women (Clance & Imes, 1978) and the subsequent literature reported mostly a gender difference in impostor phenomenon among residents (Legassie et al., 2008; Prata & Gietzen, 2007), female residents were expected to report higher impostor phenomenon and the relationships

between discrepancy, impostor phenomenon and depression were expected to be stronger in female residents compared to male residents. In Turkey, studies conducted among residents have been mostly focused on burnout syndrome, job satisfaction, mobbing, communication skills, workplace bullying, anxiety and depression (e.g. Başpınar et al., 2016; Birik, 2009; Bozkir et al., 2015; Dikmetaş et al., 2011; Erol et al., 2007; Gökaslan & Kanad, 2020; Orbay et al., 2007; Öz & Çolakoğlu, 2018; Topel, 2019; Ünal, 2008). Moreover, only three studies examined impostor phenomenon and they studied non-medical populations (research assistants, employees at a public institution, university students) (Akın et al., 2015; Arkan, 2016; Özdemir, 2015). Thus, with its focus on the relationship between impostor phenomenon, depression, and discrepancy in residents the last aim of the present study was to contribute to the literature on both residents and impostor phenomenon in Turkey.

Table 1. Demographic Characteristics of the Participants

	n	%
Marital Status		
Single	142	66.67
Married	69	32.39
Divorced	2	0.94
Perceived Income		
Very Good	2	0.94
Good	74	34.74
Moderate	119	55.87
Poor	16	7.51
Very Poor	2	0.94
Seniority		
First Year	98	46.01
Second Year	47	22.07
Third Year	34	15.96
Fourth Year	23	10.80
Fifth Year	11	5.16

METHOD

Participants

Two hundred and forty-eight residents from various medical specialties and different hospitals around Turkey participated in this study. Psychiatry, and child and adolescent psychiatry residents were excluded due to their familiarity with the measurements. Residents with psychiatric diagnosis other than depression were also eliminated. The inclusion criteria were not met by 35 participants and they were eliminated. Among the remaining 213 participants (M_{age}= 27.59, SD_{age} = 2.60, *Min.* = 24, *Max.* = 42), 120 participants (56.33%) were female. Information regarding the marital status, perceived income and seniority in residency is presented in Table 1. Sixty three percent of the participants were living in İstanbul and the remaining participants were recruited from 24 cities around Turkey. Participants were in different fields of residency such as internal medicine (22%), public health (17%), anesthesiology and reanimation (10%), pediatrics (9%), orthopedics and traumatology (8%) and the remaining 34% were in various other fields including emergency medicine, forensic medicine, family medicine and neurosurgery. Twenty-four participants (11%) were previously diagnosed with depression and 189 participants (89%) had no psychiatric diagnoses.

Measures

Demographic Information Form The demographic information form examined information regarding age, gender, marital status, perceived income, medical specialty, year of the residency and previous psychiatric diagnosis.

Almost Perfect Scale-Revised (APS-R) Almost Perfect Scale-Revised (APS-R) is a self-report measure developed by Johnson and Slaney (1996) and later revised by Slaney et al. (2001). The psychometric properties of Turkish APS-R were investigated by Ulu and colleagues (2012). The confirmatory factor analysis confirmed the factor structure proposed by Slaney et al. (2001) with 23 items and three subscales: discrepancy, order, and high standards. As the discrepancy was recognized as an indicator of maladaptive perfectionism (Slaney et al., 2001), in the present study only Discrepancy Subscale of the APS-R was used to measure maladaptive perfectionism. It includes 12 items rated on a 7-point Likert-type scale (1: strongly disagree, 7: strongly agree). The possible scores range between 12 and 84. The Cronbach's alpha was .92 for the original subscale (Slaney et al., 2001). In the Turkish adaptation study, it was .87 (Ulu et al., 2012) and in the current study, it was found to be .95.

Impostorism Scale Impostor phenomenon was measured with the Impostorism Scale developed by Leary et al. (2000). The Turkish adaptation of the scale was conducted by Akın et al. (2015). The confirmatory factor analysis supported the original factor structure with 7 items loaded on one factor. The items are rated on a 5-point Likert-type scale (1: not at all characteristic of me, 5: extremely characteristic of me). The possible scores range between 7 and 35. The Cronbach's alpha of the original scale was .87 (Leary et al., 2000). Akın et al. found the Cronbach's alpha of Turkish

Impostorism Scale to be .89. In the current study, it was .93.

Beck Depression Inventory Depression was measured with the Beck Depression Inventory developed by Beck and colleagues (1961) and adapted to Turkish by Hisli (1989). It includes 21 items. Each item taps on a specific indicator of depression and consists of 4 self-report statements ranging in severity from 0 (neutral) to 3 (severe). The possible scores range between 0 and 63. The internal reliability of the original inventory was found to be high for both psychiatric and non-psychiatric participants with a mean of .87 (Beck et al., 1988). In the adaptation study, the Cronbach's alpha was .80 and in the present study, it was .92.

Procedure

The present study was approved by the Ethical Committee of Bahçeşehir University. All participants were presented with informed consent and the measurements online via a survey software in the following order: Demographic Information Form, APS-R Discrepancy Subscale, Impostorism Scale and Beck Depression Inventory. The completion of the measurements lasted approximately 15 minutes.

RESULTS

Prior to the data analyses, scores of the discrepancy, impostorism and depression scales were examined through IBM SPSS Statistics 23.0 for accuracy of data entry and missing values. Descriptive statistics showed that skewness and kurtosis values for the discrepancy, impostorism and depression scores were within the acceptable range (Field, 2009). Table 2 demonstrates the descriptive values for these scores.

Pearson correlations were conducted between the discrepancy, impostorism and depression scores. As Table 3 shows, there were significant positive correlations between the impostorism and discrepancy scores, the impostorism and depression scores, and the discrepancy and depression scores.

Figure 1 illustrates the mediation model between impostorism, discrepancy and depression. In order to test the mediator role of impostor phenomenon in the relationship between discrepancy and depression, mediation analysis was conducted using SPSS PROCESS 3.5 (Model 4) (Hayes, 2018). In the first step, the regression of discrepancy on depression, ignoring the mediator, was significant, β = .63, t = 11.81, p = .000. The second step showed that the regression of discrepancy on the mediator, impostorism, was significant, β = .43, t = 6.98, p = .000. The third step showed that the regression of impostorism on depression was significant, β = .12, t = 2.02, p = .045. Lastly, the regression of discrepancy on depression was significant after controlling for impostorism, β = .57, t = 9.84, p = .000. Using 5000 boot-strapped samples, the estimate of the indirect effect indicated no mediation (*SE* = 0.016, *95% CI* = -.0003 to .0061).

In order to test whether male and female participants significantly differed in discrepancy, impostorism and depression scores, independent samples t-tests were performed. Results demonstrated no gender difference in discrepancy, t(211) = 1.85, p = .07; impostorism, t(211) = 1.16, p = .25; and depression scores t(211) = .96, p = .34. To test the hypothesis that the relationships between discrepancy, impostor phenomenon and depression would be stronger among female residents compared to male residents, mediation analyses using SPSS PROCESS 3.5 were run for male and female participants. In both gender groups, the mediating effect of impostorism was not found.

Table 2. Descriptive Statistics for the Discrepancy, Impostorism and Depression Scores

	Min.	*Max.*	*M*	*SD*
Discrepancy	12.00	84.00	42.65	17.78
Impostorism	7.00	35.00	13.14	6.66
Depression	.00	48.00	12.89	9.41

Table 3. Correlations between Discrepancy, Impostorism and Depression Scores

	1	2	3
1. Discrepancy	-	.43***	.63***
2. Impostorism		-	.37***
3. Depression			-

***p < .001

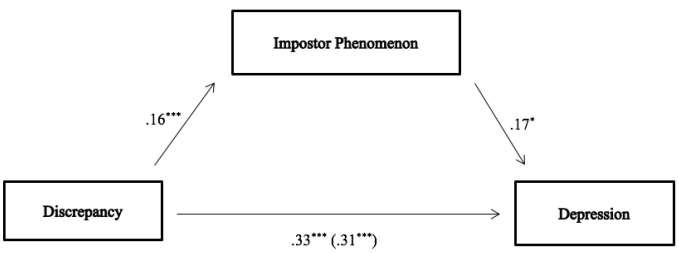

Figure 1. Mediation Model with Unstandardized Regression Coefficients for the Relationship between Discrepancy and Depression Mediated by Impostor Phenomenon.
Note: *The unstandardized regression coefficient between discrepancy and depression controlling for the impostor phenomenon is in parentheses.* *p < .05, **p < .01, ***p < .001.

DISCUSSION

The current study aimed to investigate the mediating role of the impostor phenomenon in the relationship between discrepancy and depression among residents.

The results indicated that there were positive relationships between discrepancy, impostor phenomenon and depression. Moreover, discrepancy predicted depression and impostor phenomenon; and impostor phenomenon predicted depression. These findings were in line with those of previous studies examining similar relationships in undergraduate students and medical residents. Oriel et al. (2004) showed that impostor phenomenon was strongly associated with depression among family medicine residents. Cokley et al. (2018) found that discrepancy was positively associated with impostor phenomenon. Rice and Aldea (2006) and Sherry et al. (2013) reported that discrepancy predicted depression. Along with these previous findings, current findings supported the vulnerability model which implies that discrepancy increases susceptibility to depression (Rice & Aldea, 2006; Sherry et al., 2013). They also strengthened Craiovan's (2014) idea that medical professionals with high perfectionism could be more susceptible to perceive situations as more stressful and as they set unrealistically high standards, they may generate stressful situations and become more likely to have psychopathological disorders like depression.

In the current study, the hypothesis that the impostor phenomenon would mediate the relationship between discrepancy and depression was not supported. The lack of the mediating role of the impostor phenomenon can be explained by the possibility that residents might be more reluctant to report their impostor feelings whereas they might feel more comfortable in revealing perfectionism which is a praised trait in the medical culture (Kelly, 2015; Seeliger & Harendza, 2017). Recently, a comprehensive study on maladaptive perfectionism and impostor phenomenon was conducted by Hu et al. (2019) among medical students. They explored the cognitive behavioral model in which discrepancy and impostor phenomenon are considered as dysfunctional thoughts that may lead to negative emotions (shame, embarrassment, and inadequacy) and thereby possibly increase the risk for depression. Results showed that greater negative emotions were more likely to be reported by medical students with maladaptive perfectionism and those with high-intense levels of impostor phenomenon. Moreover, moderate to severe levels of depression were more reported by medical students with high negative emotions compared to those without these emotions. These findings combined with the findings of the present study suggested that both impostor phenomenon and discrepancy share a common ground in predicting depression. Similar to people who experience discrepancy between the high standards they set for themselves and their actual performance, people with impostor phenomenon experience a discrepancy between how highly others perceive their abilities and how poorly they perceive their own abilities. As distorted perceptions and negative emotions seem to play a major role, cognitive behavioral approach suggested by Hu et al. (2019) could be useful in the conceptualization of these traits in terms of their relation to depression, and the role of emotions should be considered in future studies.

Lastly, the hypotheses that female residents would experience higher level of impostorism and the relationships between discrepancy, impostor phenomenon and depression would be stronger in female residents compared to male residents were not supported. It was found that discrepancy, impostor phenomenon and depression scores did not differ on the basis of gender. This finding implied that male residents experience discrepancy, impostor phenomenon and depression as much as female residents. The lack of the gender difference in impostor phenomenon was not consistent with the findings of some previous studies showing that female residents reported higher impostor phenomenon compared to male residents (e.g., Legassie et al., 2008; Oriel et al., 2004; Prata & Gietzen, 2007). However, in line with the current findings, Ikbaal and Musa (2018) found no gender difference in impostor phenomenon among medical students in Malaysia. Similarly, Mascarenhas and colleagues (2019) found no gender difference in impostor phenomenon among medical interns in India and Egwurugwu et al. (2018) reported no gender difference in impostor phenomenon in medical students in Nigeria. Another recent study showed no gender difference in general surgeons and general surgery residents with clinical levels of impostor phenomenon (Leach et al., 2019). According to Leach et al. (2019) rather than gender, social factors related to gender might account for how men and women experience impostor phenomenon. One of these factors is whether women have female role models such as faculty members or surgeons in leadership positions. When female residents have some examples to look up to, it can be easier for them to trust their own abilities which might buffer against impostor feelings. How individuals identify with gender roles might be another factor. Men with high femininity might experience higher impostor phenomenon which might decrease the gender differences (Patzak et al., 2017). The last factor might be the violation of the gender norms. In general, agency and competency are more expected from men than from women (e.g., Eagly, 1983). When men receive any negative feedback and think that they are not able to fulfill the expectations of the society, they might experience discrepancy between themselves and the expected gender

norms. Thus, they might experience higher fear and threat resulting in higher level of impostor phenomenon (Badawy et al., 2018). All in all, along with the gender, future studies should investigate the presence of the role models, identification with the gender roles, and gender norms to provide a better insight into the gender differences in impostor phenomenon.

In accordance with the current findings, three recent studies conducted with Turkish residents reported no gender difference in depression. Specifically, Ünal (2008) investigated depression among residents and found that female residents did not differ from male residents in depression scores. Demiral et al. (2006) examined depression among residents and faculty members in a university hospital. They demonstrated that the prevalence of depression was higher in female participants (33.3%) compared to male participants (20.8%), but this difference was not significant. Similarly, Başpınar et al. (2016) revealed that depression scores of male and female residents did not differ based on gender. Together with the present findings, these studies indicated that male residents were likely to experience depression as much as female residents.

The present study has several important contributions. First of all, even though the impostor phenomenon had been investigated in the literature since it was first conceptualized by Clance and Imes in 1978, Turkish adaptation of the Impostorism Scale (Leary et al., 2000) was conducted by Akın et al. in 2015 and to our knowledge, there were only three studies on impostor phenomenon in the Turkish literature. Thus, the current study contributes to the Turkish literature on impostor phenomenon. Secondly, the impostor phenomenon was commonly observed among medical professionals (Oriel et al., 2004) and associated with adverse effects such as low self-esteem, anxiety, and depression (Cokley et al., 2018; McGregor et al., 2008). Because of the fact that its presence in medical professionals may not only negatively affect their psychological well-being but also the quality of their health care delivery to their patients, it is important to examine the impostor phenomenon. Thirdly, because the individuals with high impostor feelings experience fear of failure as well as guilt about success, they may reject opportunities for advancement and become limited in reaching their full potential (Armstrong & Shulman, 2019; Clance & O'Toole, 1987). By understanding impostor phenomenon better, clinical help can be delivered to those who suffer from it and the present study has several clinical implications.

One crucial clinical implication is indicating the need for the assessment of discrepancy and impostor phenomenon in identifying residents who may be at risk for depression. Also, in the treatment of depressed residents, measuring impostor phenomenon and/or discrepancy between standards and actual performance would be necessary. As the discrepancy was found to increase susceptibility to depression, Rice and Aldea (2006) asserted that without attempting to decrease the perfectionistic discrepancy, depressed individuals may fall back into depression. Preventions and interventions are needed to address these traits for residents' well-being. Henning et al. (1998) suggested that providing definition and open discussion about impostor phenomenon and maladaptive perfectionism in the residency orientation could be helpful. In order to reduce professional isolation, information about the prevalence of these traits among residents could be shared (Prata & Gietzen, 2007). Residents with impostor phenomenon may benefit from positive, frequent, and specific feedback given by the faculty members with an emphasis on their achievements (Oriel et al., 2004). Mentoring programs that enable residents to share their personal and professional concerns are also recommended (Armstrong & Shulman, 2019; Seeliger & Harendza, 2017; Villwock et al., 2016). Moreover, within the cognitive behavioral framework, when the discrepancy and impostor phenomenon were conceptualized as dysfunctional thoughts, identifying and disputing these thoughts may be helpful in alleviating negative emotions (Hu et al., 2019). Thus, individual or group cognitive behavioral therapy could be implemented in residency programs.

In addition to these clinical implications, the sample distribution in terms of gender (120 females, 93 males) and the participation of residents from diverse specialties of medicine all around Turkey were the strengths of the current study. However, there were some limitations. Firstly, the generalizability of the findings was restricted due to relatively small sample size and convenience sampling. Secondly, although some patterns of relationships were indicated, causal inferences could not be made as the design of the current study was correlational. Thirdly, even though the responses were anonymous, and the measures were reliable, results were based on self-report and the social desirability bias may have played a role.

The present study focused on the discrepancy dimension of maladaptive perfectionism. Adaptive perfectionism dimensions (high standards, conscientious perfectionism, self-oriented perfectionism, perfectionistic strivings, order, and organization) were demonstrated to be positively associated with self-esteem, subjective well-being, perceived ability and social support and negatively related to adversities such as depression (Rice et al., 1998; Slaney et al., 2001; Wang & Zhang, 2017). Considering that adaptive

perfectionism can play a protective role against depression, it is important that future studies measure maladaptive and adaptive dimensions of perfectionism together. In the literature, the impostor phenomenon was dominantly operationalized as the score from the Clance Impostor Phenomenon Scale (CIPS) developed by Clance (1985). Even though the Impostorism Scale administered in the present study was previously shown to correlate with the CIPS (Leary et al., 2000), the direct comparison of the current findings with the previous studies is not possible. Thus, Turkish adaptation of the CIPS would be an important contribution to the literature on impostor phenomenon. Lastly, future studies should also include self-esteem as a variable because it was observed to be highly related to maladaptive perfectionism, impostor phenomenon, and depression (Cokley et al., 2018; Preusser et al., 1994).

Conclusion

Residency training is a time with various physical, cognitive, emotional, and social challenges as the residents are expected to keep in mind large amounts of information, work long hours with little or no sleep, have little time for recreation and self-care, deal with patients and patients' relatives and attend to orders requested by their senior residents and professors (Aysan et al., 2008). Along with these challenges, the current findings revealed that residents were also likely to experience inner difficulties such as discrepancy, impostor phenomenon and depression which are related to each other. Thus, discrepancy and impostor phenomenon were important traits when considering the psychological well-being of residents and the relationships between them deserve future research.

Compliance with Ethical Standards The present study was approved by the Ethical Committee of Bahçeşehir University on 27.12.2018 (Trial number: 20021704-604. 01.01-4635)

Conflict of Interest The authors declare that they have no conflict of interest.

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