ORIGINAL RESEARCH

Curr Res Soc Sci (2026), 12(1) • 57-70

Need to Belong and Negative Affect: The Mediating Role of Executive Dysfunction

Aidiyet İhtiyacı ve Negatif Duygulanım: Yürütücü İşlev Disfonksiyonunun Aracı Rolü

Selin YILMAZ*

Adana Alparslan Türkeş Science and Technology University, Faculty of Economics, Administrative and Social Sciences, Department of Psychology, Adana, Türkiye

Abstract

This study sought to assess the mediating role of executive dysfunction, which refers to difficulties in managing, organizing, and regulating thoughts and behaviors, in the connection between the need to belong, defined as the desire to be accepted by and integrated into a social group and negative affect. A total of 395 university students, 232 female and 163 male, were recruited (Mage = 20.75, SD = 1.93). Need to belong, executive dysfunction, and negative affect were examined via the Need to Belong Scale, Executive Dysfunction Subscale of The Frontal Systems Behavior Scale, and Positive and Negative Affect Scale, respectively. Based on the results of the correlation analysis, a higher need to belong was associated with higher levels of negative affect and greater executive dysfunction. Furthermore, executive dysfunction was positively associated with negative affect. Two mediation models were tested to examine the relationships among need to belong, executive dysfunction, Overall, the findings suggest that the associations among need to belong, executive dysfunction, and negative affect may be bidirectional. These results highlight the importance of cognitive processes in understanding emotional difficulties related to belongingness needs.

Keywords: Belongingness, Emotion, Executive Functions.

Öz

Bu çalışma, bir sosyal grup tarafından kabul edilme ve bu gruba dahil olma arzusu olarak tanımlanan aidiyet ihtiyacı ile olumsuz duygulanım arasındaki ilişkide, düşünce ve davranışları yönetme, düzenleme ve kontrol etme konusunda yaşanan zorlukları ifade eden yürütücü işlev bozukluğunun aracı rolünü incelemeyi amaçlamıştır. 232'si kadın ve 163'ü erkek olmak üzere toplam 395 üniversite öğrencisi çalışmaya dahil edilmiştir (Myaş = 20.75, SS = 1.93). Aidiyet ihtiyacı, yürütücü işlev disfonksiyonu ve olumsuz duygulanım sırasıyla Aidiyet İhtiyacı Ölçeği, Frontal Sistem Davranış Skalası Yürütücü İşlev Disfonksiyonu Alt Ölçeği ve Pozitif ve Negatif Duygu Ölçeği ile ölçülmüştür. Korelasyon analizi sonuçlarına göre, daha yüksek aidiyet ihtiyacı, daha yüksek düzeyde olumsuz duygulanımı ve daha fazla yürütücü işlev bozukluğu ile ilişkilidir. Ayrıca, yürütücü işlev bozukluğu olumsuz duygulanım ile pozitif olarak ilişkilidir. Aidiyet ihtiyacı, yürütücü işlev bozukluğu ve olumsuz duygulanım arasındaki ilişkileri incelemek için iki aracı model test edilmiştir ve modellerde değişkenlerin yönü tersine çevrilmiştir. Genel olarak, bulgular aidiyet ihtiyacı, yürütücü işlev bozukluğu ve olumsuz duygulanım arasındaki ilişkilerin çift yönlü olabileceğini göstermektedir. Bu sonuçlar, aidiyet ihtiyaçlarıyla ilgili duygusal zorlukları anlamada bilişsel süreçlerin önemini vurgulamaktadır.

Anahtar Kelimeler: Aidiyet, Duygu, Yürütücü İşlev.

* Corresponding Author / Sorumlu Yazar: yilmaz-selin@outlook.com

Article Info / Makale Bilgileri:
Received / Gönderim: 09.03.2025 Accepted / Kabul: 25.05.2026

To cite this article / Atıf için:
Yılmaz, S. (2026). Need to belong and negative affect: The mediating role of executive dysfunction. *Curr Res Soc Sci, 12*(1), 57-70.

To link to this article / Bağlantı için:
http://dx.doi.org/10.30613/curesosc.1654198

Need to Belong and Negative Affect: The Mediating Role of Executive Dysfunction

As social beings, humans have the drive to establish and maintain interpersonal relationships, which is a basic need to belong (Baumeister & Leary, 1995). As a matter of fact, the need to belong is a basic motivation that involves repeated positive and supportive relationships with the same person or people (Leary et al., 2013). The need to belong can be found at different levels in individuals and has several emotional, cognitive, and behavioral implications. Particularly, it is predicted that unmet need to belong may cause medical, psychological (especially stress, cognitive problems, and adaptation problems), or behavioral pathologies beyond temporary emotional distress (Baumeister & Leary, 1995). Although previous research has thoroughly documented the emotional repercussions of unfulfilled belongingness needs, these findings have predominantly concentrated on affective and interpersonal processes. However, less is known about the cognitive processes that may underlie this relationship, especially the role of executive functioning, including self-regulatory control mechanisms pertinent to emotion regulation and goal-oriented behavior, which could influence how individuals manage their emotions and pursue social connections. Therefore, the present study aims to examine whether executive dysfunction explains the association between the need to belong and negative affect.

Beyond being conceptualized as fundamental, powerful, and pervasive human motivation (Baumeister & Leary, 1995), the need to belong differs across individuals and is shaped by underlying psychological and developmental processes. From the perspective of attachment theory, individuals with insecure attachment styles are more likely to be highly sensitive to rejection and to have a stronger need for social acceptance; this is because early relational experiences shape internal working models of the self and others (Bowlby, 1982). Indeed, the positive correlation between the need to belong and anxious attachment supports this theory (Leary et al., 2013). In individuals with an anxious attachment style, a certain lack of confidence regarding the likelihood of receiving acceptance and a sense of belongingness may lead to a low sense of acceptance and, consequently, a strong need to belong. Similarly, self-esteem has consistently been identified as a fundamental variable of individual difference; individuals with low self-esteem tend to have a greater need for external validation and exhibit a stronger need for a sense of belonging (Leary, 2021; Low et al., 2022). Furthermore, contemporary psychodynamic approaches emphasize that early relational experiences contribute to internalized expectations of acceptance and rejection, which in turn shape interpersonal sensitivity and belongingness (Fonagy & Target, 2003; Zimmer-Gembeck et al., 2021). Consistent with this perspective, recent studies reported that individuals with a higher sensitivity to rejection have lower levels of social acceptance and exhibit a heightened responsiveness to interpersonal threats, which may in turn intensify their need to belong and social approval (Leary et al., 2013; Giovazolias, 2024; Zimmer-Gembeck et al., 2021). In light of all these findings, it can be said that the increase in belonging anxiety may lead to a greater focus on social evaluation and interpersonal relationships, which in turn may place additional demands on cognitive control and self-regulation processes. Taken together, these perspectives argue that the need to belong is not merely a fundamental and universal drive but also a psychologically heterogeneous construct affected by individual differences in attachment patterns, self-evaluations, and relationship schemas. Even more importantly, these individual differences may operate through underlying cognitive processes that can shape how individuals perceive, interpret, and respond to social experiences, thereby influencing their emotional reactions. In addition to individual differences, cultural context may also play a vital role in establishing belongingness needs and related emotional states. From a cultural psychology perspective, individuals in collectivist cultures place greater emphasis on social harmony, group membership, and interpersonal connections than those in individualist cultures; in this context, the need to belong takes on a more central role in self-perception, which can increase individuals'

sensitivity to social evaluation, social exclusion, and relational breakdowns (Markus & Kitayama, 1991; Triandis, 1995). Empirical studies highlight that individuals from collectivist cultures may exhibit stronger emotional and cognitive responses to threats to their sense of belonging, because social interactions are more intimately linked to identity and self-esteem in these cultures (Cross et al., 2011; Park & Kitayama, 2020). In conclusion, cultural orientation can influence the intensity of belonging needs, as well as shape the potential relationships between these needs and cognitive processes and negative emotions.

When the need to belong is threatened, individuals may be affected not only emotionally but also cognitively. Consistent with this perspective, an increased need to belong has been associated with heightened negative emotions (Leary et al., 2013). This is because threats to belongingness increase the necessity to monitor social cues and rebuild interpersonal connections, thereby placing a significant strain on limited cognitive resources (Baumeister & Leary, 1995). This increased emphasis on social appraisal may divert attentional resources toward concerns about belonging, reducing the capacity available for higher-order cognitive processes (Baumeister et al., 2002). Thus, executive dysfunction may represent a critical cognitive mechanism that binds heightened concerns about sense of belonging to emotional distress. In this context, executive functions may be particularly susceptible under conditions of social threat.

Executive functions have been conceptualized as a multifaceted constellation encompassing four abilities: goal setting, planning, executing goal-oriented plans, and effective performance (Lezak, 2004). That is, executive functions include high-order cognitive skills such as cognitive flexibility, working memory, inhibition, planning and problem solving, fluency, goal-directed behavior, and attention. These functions are responsible for generating thoughts, selecting goals, planning actions, self-monitoring, and the ability to flexibly adapt and adjust behavior to feedback (Stuss et al, 1986). Executive functions, known as an important frontal lobe function, play a critical role in the ability to adapt to a constantly changing world (Stuss & Levine, 2002). It has been suggested that only individuals with intact executive functions can be independent, socially responsible, effectively self-sufficient, and productive, while individuals with impaired executive functions may have difficulties in achieving goals, adapting to new situations, and managing social interactions (Lezak, 2004). Accordingly, executive functions may play a key role in coping with threats to belongingness. However, it is noteworthy that studies mostly focus on different psychological factors rather than cognitive factors in the negative emotions that individuals experience when their basic sense of belonging is threatened. For example, depending on different characteristics such as low psychological flexibility, rejection sensitivity, and low self-esteem, individuals may experience higher feelings of distress in response to social exclusion or rejection (Akçay & Kayiş, 2023; Büttner et al., 2021; Lei et al., 2024; Waldeck et al., 2023). So far, relatively few studies have focused on executive dysfunction as a potential mechanism that could explain the relationship between the need for belonging and negative emotional states. Therefore, it is deemed valuable to determine the cognitive mechanisms that can mediate the negative emotions that may arise due to the increased need to belong.

Taken as a whole, these findings suggest that cognitive processes may play a critical role in explaining the link between need to belong and negative affect. We propose executive dysfunction as a mediator in this relationship because threats to belongingness are likely to increase cognitive load, disrupt self-regulatory capacity, and bias attention toward social concerns, thereby impairing executive functioning. In turn, impaired executive functioning may hinder effective emotion regulation and increase vulnerability to negative affect. Particularly, most empirical studies in literature examine the impact of the need to belong on cognition, emotion, and behavior by applying acute social exclusion and rejection procedures. Positive, constructive interpersonal bonds are likely to generate positive emotions, whereas

these bonds that are disrupted through social exclusion are more likely to generate negative emotions. Accordingly, social exclusion and rejection threaten the need to belong and trigger negative affective consequences, such as anxiety, anger, and sadness (Martínez-Monteagudo et al., 2020; Reiter-Scheidl et al., 2018; Wang et al., 2017). In particular, it has been revealed that individuals with a high need to belong have more negative emotional repercussions to social exclusion than individuals with a low need to belong (Beekman et al., 2016). All in all, negative affective states increase with the increase of the need to belong (Lei et al., 2024; Leary et al., 2013; Leary, 2021; Schneider et al., 2017; Wang et al., 2022).

In the literature, it is emphasized that individuals' insufficiently satisfied belonging motivations may cause them to engage their limited cognitive resources (Baumeister et al., 2002; Dong & Zong, 2023). Hence, it is suggested that gaining social acceptance may be a protective factor against cognitive disruptions due to negative emotional experiences (Ni et al., 2020). Recent studies on social exclusion suggested the threats to belongingness to be related to cognitive dysfunctions (Peralta et al., 2025; Pfundmair et al., 2024; Themanson et al., 2014). Excluded people immediately feel a threat to their basic need to belong. These individuals' efforts to compensate for their threatened basic needs may reduce their cognitive performance (Williams, 2009). These individuals' efforts to compensate for their threatened basic needs may reduce their cognitive performance when measured at the neural and behavioral levels (Peralta et al., 2025; Themanson et al., 2014; Xu et al., 2020). To date, much research has determined the association between social exclusion and executive function and has revealed that experience of exclusion disrupts working memory (Diamond, 2013; Fuhrmann et al., 2019; Xu et al., 2018), inhibitory control (Buelow et al., 2015; Otten & Jonas, 2013; Xu et al., 2020), and conflict monitoring (Bernstein et al., 2010; Themanson et al., 2014). Executive dysfunction thought to be due to an increased need to belong (Chester & DeWall, 2014; Xu et al., 2020). People with a high need to belong are anxious about acceptance and belonging (Leary et al., 2013). Thus, a greater need to belong may encourage people to pay more attention to seeking social connections, resulting in executive dysfunction (Peng et al., 2023). In summary, executive dysfunction may be an important source of emotional distress resulting from an increased need to belong. Besides, it was reported that individuals with poor executive functions have higher levels of negative affect (Madian et al., 2019). In particular, it has been shown that disruptions in executive functions can suppress effective emotion regulation strategies (Hui et al., 2023). Therefore, more severe negative emotional reactions to stressful situations may occur due to poor executive functioning (Feng et al., 2022; Sanchez-Lopez et al., 2019). As a result, the increased need to belong may lead to disruptions in executive function performance and therefore may increase negative affective state.

A growing body of evidence shows that negative emotions may also disrupt executive functions. Accordingly, it has been demonstrated that a high intensity of negative emotions, such as anxiety and distress, deplete cognitive resources, impair attention control, and diminish working memory capacity, thereby weakening executive processes (Eysenck et al., 2007; Pessoa, 2020; Shields et al., 2021). In this regard, it has been reported that affective distress is associated with reduced activation of prefrontal regions during tasks requiring cognitive flexibility—that is, the ability to alter a given mental framework—and that difficulties in executive function performance are observed under conditions of negative emotional load (Kragel et al., 2022; Shackman & Wager, 2021). Such deficits in executive functions can hinder effective self-regulation, restrict individuals' capabilities to regulate their social behavior, and raise their sensitivity to signals of rejection or exclusion. Consequently, individuals may experience greater uncertainty in social interactions and a reduced sense of social connection; these feelings, in turn, may strengthen their motivation to regain a sense of belonging. This possibility points out that the associations between the need to belong, executive dysfunction and negative emotional states may not be unidirectional, and that alternative pathways should also be taken into account.

Therefore, cognitive reassessments of social connection in response to increased negative emotions can bring about a strong need to belong. Hinged on the literature, it is proposed that an increased need to belong may lead to cognitive load and impairments in executive functions, which in turn may play a role in the increase in negative emotions. Although alternative pathways are also possible, negative emotions may be linked to a decline in executive function efficiency, which can subsequently influence individuals' need to belong.

The Current Study

Evidence from the literature demonstrates a close interrelationship between the need to belong, executive functioning, and affect. Theoretical approaches stress belongingness as a fundamental interpersonal motivation; an unfulfilled need to belong may create cognitive and self-regulatory demands that are associated with difficulties in executive functioning and increased negative affect. From this viewpoint, executive dysfunction may serve as a cognitive mechanism underlying the association between need to belong and negative affect. Nevertheless, despite increasing evidence connecting belongingness need, executive functioning, and negative affect, these variables have seldom been analyzed within a unified mediation framework. On the one hand, alternative directional pathways are also theoretically feasible. Particularly, negative affect may hinder executive functioning, thereby influencing individuals' interpersonal motivations, including their need to belong. Consequently, alongside the proposed model, an alternative reverse mediation model was also examined to provide a more comprehensive understanding of the relationships among these variables. Accordingly, the following hypotheses were proposed:

H1. Need to belong, executive dysfunction, and negative affect will be positively associated.

H2. Executive dysfunction will mediate the association between need to belong and negative affect (proposed model)

H3. Executive dysfunction will mediate the reverse association between negative affect and need to belong (alternative model)

Method

Participants

A total of 395 university students from Adana Alparslan Türkeş Science and Technology University in Türkiye formed the participant group of this study (M_{age} = 20.75, SD = 1.93, range: 18–28). Of the participants, 232 (58.7%) were female, and 163 (41.3%) were male. The convenience sampling method was utilized in the recruitment of the participants. The sample size was determined using G*Power 3.1 (Faul et al., 2009) based on an a priori power analysis for linear multiple regression with $\alpha = .05$, power $(1 - \beta) = .80$, and a small effect size ($f^2 = .02$), as recommended by Cohen (1988). It was estimated that a minimum of 395 participants would be required; therefore, the current sample size of 395 was deemed generally sufficient to achieve 80% statistical power.

Measures

Need to Belong Scale

The initial version of this scale was designed by Leary et al. (2013) and adjusted into Turkish by Yılmaz and Alan (2024). In the Turkish version, the need to belong was assessed through the 5 items with a one-dimensional structure on a 5-point Likert-type scale. This scale measures individuals' general motivation to be accepted, included, and to avoid social rejection within interpersonal relationships, rather than belonging to a specific group (Leary et al., 2013). Example items include "I want other people to accept me" and "It bothers me a great deal when I am not included in other people's plans."

The Cronbach's alpha coefficient for reliability was gauged to be .73. This coefficient was gauged to be .74 in the present study. A greater total score on the test represents a greater degree of need to belong.

Executive Dysfunction Subscale of The Frontal Systems Behavior Scale (FrSBe)

The Frontal Systems Behavior Scale (FrSBe) was originally developed by Grace et al. (1999), and its Turkish reliability and validity study in a clinical sample was conducted by Akça Kalem (2004). In the present study, executive dysfunction was conceptualized as self-reported difficulties in cognitive regulation, behavioral control, flexibility, and goal-directed functioning in daily life. The FrSBe consists of 46 items and three subscales (apathy, disinhibition, and executive dysfunction) rated on a 5-point Likert-type scale (1 = almost never, 5 = almost always). In the present study, executive dysfunction was assessed using the 17-item Executive Dysfunction subscale of the FrSBe. Example items from this subscale include “I repeat certain behaviors or get stuck on particular thoughts,” “I am inflexible and have difficulty changing routines,” and “I show poor judgment and have difficulty with problem-solving.” In the current study, the Cronbach Alpha coefficient of the executive dysfunction subscale was calculated as .80. A higher score on the subscale reflects a higher level of executive dysfunction.

Positive and Negative Affect Scale (PANAS)

PANAS, formed by Watson et al. (1988) and adjusted into Turkish by Gencoz (2000), was utilized to assess affective states. The scale consists of 20 items rated on a 5-point Likert-type scale, with 10 items measuring negative affect and 10 items measuring positive affect. The positive affect subscale was retained to preserve the standard structure of the PANAS and to allow for a more comprehensive assessment of affective states; however, only the negative affect subscale scores were used for analyses in line with the study’s focus on negative affect and the proposed hypotheses. Example items from the negative affect subscale include “distressed,” “upset,” “guilty,” and “nervous.” Internal consistency coefficients for negative affect was gauged as .83 (Gencoz, 2000). Cronbach's alpha coefficients for the current study were .88 for negative affect subscale.

Procedure and Data Analysis

Before the onset of the current study, the approval of the Social and Human Sciences Scientific Research and Publication Ethics Committee of Adana Alparslan Türkeş Science and Technology University, Türkiye, was received (Date and Approval Number: February 5, 2025, and 01/5). The participants granted informed consent to participate in the study, and participants were offered that they might voluntarily withdraw from recruitment at any moment. Data collection was completed by distributing the scales to the subjects in person. Participants who reached their classes fulfilled the scales in approximately 15-20 minutes.

All analyses of the present study were executed through SPSS 23 (IBM Corp., 2015) and Process Macro 4.2 (Hayes, 2022). The analyses were initiated by ensuring the normality assumptions of the main variables, and hence, skewness and kurtosis values were deemed to be within an acceptable range (-2, +2) (Kim, 2013). In addition, the mean and standard deviation of the need to belong, executive dysfunction, and negative affect were gauged. Then, Pearson correlation coefficient analysis was performed to reveal the association between all these variables. In line with the study aims, two mediation models were tested. In the first model, need to belong was specified as the independent variable, negative affect as the dependent variable, and executive dysfunction as the mediator. In the second (reverse) model, negative affect was specified as the independent variable, need to belong as the dependent variable, and executive dysfunction as the mediator. Regression, total effect, direct effect, and indirect effect in this mediator model occurred through the 5000 bootstrap samples method at a 95% confidence interval (CI) (Hayes, 2022). Unless CI involves zero, the mediator hypothesis would be supported.

Results

The descriptive statistics and Pearson correlation coefficients for each of the main present study variables were depicted in Table 1. According to the correlation analysis results, the need to belong was positively correlated with executive dysfunction (r = .20, $p < .001$) and negative affect (r = .18, $p < .001$). In addition, executive dysfunction was positively correlated with negative affect (r = .45, $p < .001$).

Table 1

Descriptive Statistics and Correlations

Variables	1	2	3	M	SD	Skewness	Kurtosis
1. Need to Belong	-			14.13	4.02	.11	-.33
2. Executive Dysfunction	.20***	-		40.92	9.61	.44	.12
3. Negative Affect	.18***	.45***	-	23.57	7.70	.60	.15

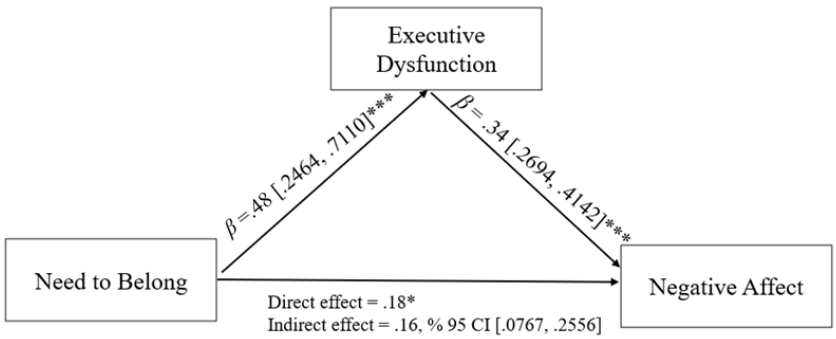
****p<.001*

The first mediation model (Process Model 4) was set forth to clarify whether executive dysfunction has a mediating role in the association between the need to belong and negative affect (Figure 1). At first, the need to belong significantly predicted executive dysfunction ($\beta = .48$, $SE = .12$, $t = 4.05$, $p < .001$). In addition, the need to belong significantly predicted negative affect ($\beta = .34$, SE = .10, $t = 3.59$, $p < .001$). When the executive dysfunction was added to the model as a mediator variable, the direct effect of need to belong on negative affect decreased but remained significant ($\beta = .18$, $SE = .09$, $t = 2.02$ $p = .043$), and the indirect effect was significant ($\beta = .1636$, 95% *CI* [.0767, .2556]). Consequently, executive dysfunction partially mediates the association between need to belong and negative affect.

A reverse mediation model (PROCESS Model 4) was tested to examine whether executive dysfunction mediates the relationship between negative affect and need to belong (Figure 2). First, negative affect significantly predicted executive dysfunction ($\beta = .56$, $SE = .06$, $t = 9.85$, $p < .001$). In addition, negative affect significantly predicted need to belong ($\beta = .09$, $SE = .03$, $t = 3.59$, $p < .001$). When executive dysfunction was included as a mediator, the direct effect of negative affect on need to belong decreased but remained significant (β = .06, SE = .03, t = 2.02, p = .043), and the indirect effect was also significant ($\beta = .0350$, 95% *CI* [.0077, .0623]). These findings indicate that executive dysfunction partially mediates the relationship between negative affect and need to belong.

Figure 1

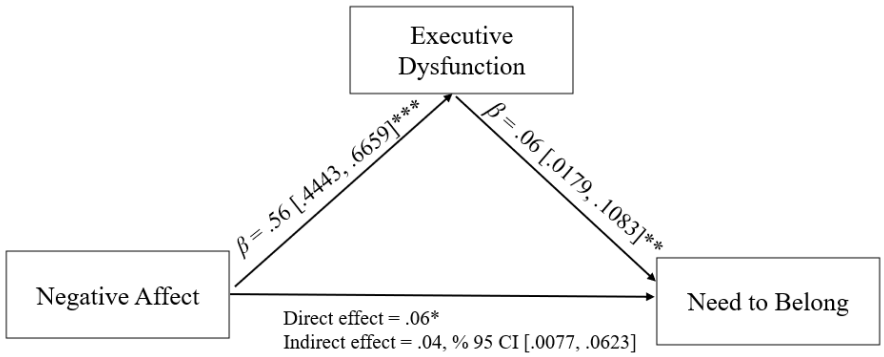
Model 1: Need to Belong as a Predictor



**p<.05, ***p<.001*

Figure 2

Model 2: Negative Affect as a Predictor



**p<.05, **p<.01, ***p<.001*

Discussion

The present study aimed to investigate the associations between the need to belong, executive dysfunction, and negative affect, as well as whether executive dysfunction mediates the relationships between the need to belong and negative affect across alternative directional models. Consistent with H1, the need to belong was positively related to both executive dysfunction and negative affect, while executive dysfunction was positively related to negative affect. In other words, a greater need to belong was related to greater negative affect and executive dysfunction, while greater executive dysfunction was related to greater negative affect. Furthermore, in line with H2, executive dysfunction partially mediated the association between need to belong and negative affect. In addition, supporting H3, executive dysfunction also partially mediated the alternative directional pathway from negative affect to need to belong. These findings demonstrated that the relationships between the need to belong, executive dysfunction and negative emotional states may operate reciprocally, through cognitive and emotional processes, rather than following a strictly unidirectional pathway.

A sufficiently fulfilled sense of belonging has been conceived as a basic human motivation that is consistently and closely linked to emotional well-being. In this context, the heightened need for a sense of belonging is likely to give rise to distressing emotional states. This positive correlation can be explained by the need to belong hypothesis, which posits that threats to meaningful social connections are a primary source of psychological distress (Baumeister & Leary, 1995). Empirical provides further support for this assumption by showing that negative affect tends to increase with an increase in the need to belong (Leary et al., 2013; Leary, 2021). In other words, individuals with a high desire for social acceptance and perceived inadequate social acceptance are more likely to experience elevated negative affect. In fact, recent research on social exclusion supports these findings by consistently emphasizing that a perceived threat to one's sense of belonging leads to negative emotional experiences and psychological distress (Lei et al., 2024; Schneider et al., 2017; Wang et al., 2022). From an attachment theory perspective, early relational experiences are assumed to shape internal working models of the self and others, which influence how individuals perceive and respond to interpersonal situations. Accordingly, attachment theory suggests that emotional reactions to threats to social connection may vary across individuals depending on these internalized relational schemas (Bowlby, 1982). From the perspective of attachment theory, it is believed that early attachment experiences shape internal working models of the self and others, thereby influencing how an individual perceives and reacts to interpersonal relationships. Based on this, attachment theory claims that emotional responses to threats to social bonds may vary between individuals depending on these internalized attachment patterns (Bowlby, 1982). In addition to all this, it is conceivable that the cultural context may also shape these

emotional processes. Considering that the sample in the present study is likely to reflect relatively collectivistic and interdependent cultural tendencies, concerns regarding social conformity and a sense of belonging to a group may be particularly noteworthy. As threats to a sense of belonging may be experienced more intensely in such contexts, negative emotional reactions may be more pronounced than in more individualistic cultural environments. (Markus & Kitayama, 1991; Triandis, 1995).

As predicted, the mediation model showed that the need to belong is one antecedent of executive dysfunction. This finding supports earlier studies that revealed a negative relationship between the need to belong and executive functions (Chester & DeWall, 2014; Xu et al, 2020). These studies emphasized that executive function performance decreases as the need to belong increases. Meanwhile, the findings are parallel to studies in the literature reporting that social exclusion can impair various executive function domains (Fuhrmann et al., 2019; Themanson et al., 2014; Xu et al., 2018; Xu et al., 2020). People who feel inadequately accepted and have a strong need to belong may experience an increase in executive dysfunctions. In other words, unmet belongingness needs may occupy limited attentional resources and slow down information processing speed (Xu et al., 2020). In addition, individuals with a strong need to belong may exhibit heightened sensitivity to social cues and greater concern about interpersonal evaluation (Baumeister & Leary, 1995; Pickett et al., 2004), which may increase attentional demands in social contexts. Given that executive functions serve to facilitate goal-directed behavior, attention and emotion regulation, and adaptation to changing social demands (Lezak, 2004 ; Stuss & Levine, 2002), when the need to belong becomes more salient, individuals may devote more cognitive resources to monitoring social signs of acceptance and rejection, leaving fewer resources for higher-level cognitive control processes. Consistent with this cognitive framework, the present findings also demonstrate that greater executive dysfunction is associated with higher levels of negative affect. Accordingly, executive dysfunction increases, and individuals appear to experience more intense negative emotional states. Previous studies similarly reported that strong executive functions are a protective factor against negative emotional states (Madian et al., 2019), whereas deficits in these functions increase vulnerability to negative affect (Cox et al., 2019). Executive function abilities may be an important mechanism supporting emotion regulation skills (Madian et al., 2019). Accordingly, executive dysfunction can lead to emotion dysregulation and therefore to depressive symptoms (Hui et al., 2023). Especially, individuals who have difficulties in executive functioning skills may experience more negative emotions, such as anxiety and worry, when faced with stressful situations (Feng et al., 2022; Sanchez-Lopez et al., 2019). Consequently, this pattern is also conceptually consistent with models that suggest that executive control processes are necessary for reducing emotional responses and maintaining adaptive coping in the face of social or psychological stressors (Gross, 1998; Pessoa, 2020; Shackman & Wager, 2021).

In addition, the findings of the second model confirm that heightened negative affect may exacerbate executive dysfunction and thereby intensify the need to belong. Namely, these findings indicate that the association between negative affect and need to belong may reflect bidirectionality rather than unidirectionality. In line with empirical studies highlighting the cognitive implications of affective distress, elevated negative emotional states can deplete cognitive resources, impair attention control, and disrupt executive function (Eysenck et al., 2007; Pessoa, 2020; Shields et al., 2021). Such disruptions may undermine people’s ability to effectively regulate interpersonal anxiety, increase their susceptibility to cues related to exclusion and rejection, and heighten their motivation to re-establish social connections and a sense of belongingness. Viewed from this perspective, executive dysfunction may function not only as a result of a threat to the sense of belonging but also as a cognitive mechanism through which negative affective states influence interpersonal motivations. Interpreting the statistical significance of both models requires caution, especially considering the study's cross-sectional nature. To be precise, whilst the first proposed model is theoretically rooted in the literature, which highlights

threats to belonging as precursors to cognitive and emotional difficulties, the alternative second model reveals that a negative affect may also predict impairments in executive function and thereby shape belonging needs. For this reason, the current data may indicate reciprocal and mutually reinforcing mechanisms rather than a purely linear causation. Ultimately, further longitudinal and experimental studies are required to shed light on the temporal sequence and possible bidirectional dynamics between the need to belong, executive function, and negative affect.

Limitations

Though these findings offer valuable insights into the relationship between the need to belong, executive dysfunction, and negative affect, several limitations must also be considered. Firstly, since the study employed a cross-sectional approach, the observed associations, including the alternative pathways tested, should be interpreted as correlational rather than causative. Secondly, all variables were evaluated by self-reported measures; such an approach may lead to common-method bias and fail to accurately represent the objective features of executive processes. To improve measurement validity, performance-based neuropsychological tests and multi-method assessment techniques should be incorporated into future research. The third limitation of the current study is that young adults were recruited in this study, so the outcomes could not be generalizable to any other age group. Hence, future studies in different age groups as well as clinical sample groups (i.e., depression and anxiety disorders) may enrich literature. Lastly, the observed associations may have been impacted by cultural and environmental factors unique to the current group, indicating the need for replication in other varied cultural situations.

Implications

In summary, the present research has some theoretical and practical implications. Theoretically, the study broadens the scope of research on belongingness by highlighting executive dysfunction as a potential cognitive mechanism linking interpersonal needs with emotional consequences. This supports an integrative framework in which social motivation and cognitive control systems collectively shape emotional well-being.

From an applied perspective, the results suggest that interventions targeting executive functions, such as cognitive rehabilitation programs centering on enhancing executive functions or mindfulness-based strategies, may be instructive in the prevention and treatment of negative affective states in individuals with heightened belongingness needs. Such interventions may be quite effective in educational and clinical settings, where difficulties with emotion regulation and relational sensitivity are prevalent. Meanwhile, interventions aimed at reducing emotional distress can also help to preserve executive functions and foster healthier experiences of interpersonal harmony and a sense of belonging. More generally, the current findings emphasize the need to address both cognitive and emotional processes in preventive mental health interventions, particularly among young adults who may be vulnerable to social stress, sensitivity to rejection, and challenges in emotional regulation within social contexts.

Compliance with Ethical Standards

Ethical Approval

The study was approved by the Adana Alparslan Türkeş Science and Technology University Research and Publication Ethics Board (No. 05.02.2025-01.5).

Informed Consent

Informed consent was obtained from all individual participants involved in the study.

Author Contributions

The author solely conducted the review and wrote the manuscript.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

References

Akça-Kalem, Ş. (2004). *The reliability and validity studies of the Turkish from of frontal systems behaviour scale* (FrSBe). Master's Thesis. İstanbul University.

Akçay, A., & Kayiş, A. R. (2023). Cyberostracism and knowledge sharing: The mediating role of social anxiety in e-learning environments. *Journal of Educational Technology and Online Learning, 6* (1), 33-47. https://doi.org/10.31681/jetol.1097719

Baumeister, R. F. ve Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497-529. https://doi.org/10.1037/0033-2909.117.3.497

Baumeister, R. F., Twenge, J. M., & Nuss, C. K. (2002). Effects of social exclusion on cognitive processes: Anticipated aloneness reduces intelligent thought. *Journal of Personality and Social Psychology, 83*(4), 817. https://doi.org/10.1037/0022-3514.83.4.817

Beekman, J. B., Stock, M. L., & Marcus, T. (2016). Need to belong, not rejection sensitivity, moderates cortisol response, self-reported stress, and negative affect following social exclusion. *The Journal of Social Psychology, 156*(2), 131-138. https://doi.org/10.1080/00224545.2015.1071767

Bernstein, M. J., Sacco, D. F., Brown, C. M., Young, S. G., & Claypool, H. M. (2010). A preference for genuine smiles following social exclusion. *Journal of Experimental Social Psychology, 46*(1), 196-199. https://doi.org/10.1016/j.jesp.2009.08.010

Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). Basic Books. (Original work published 1969)

Buelow, M. T., Okdie, B. M., Brunell, A. B., & Trost, Z. (2015). Stuck in a moment and you cannot get out of it: The lingering effects of ostracism on cognition and satisfaction of basic needs. *Personality and Individual Differences, 76,* 39-43. https://doi.org/10.1016/j.paid.2014.11.051

Büttner, C. M., Rudert, S. C., & Greifeneder, R. (2021). Depressed and excluded: Do depressive symptoms moderate recovery from ostracism?. *Journal of Affective Disorders, 294,* 730-736. https://doi.org/10.1016/j.jad.2021.07.075

Chester, D. S., & DeWall, C. N. (2014). Prefrontal recruitment during social rejection predicts greater subsequent self-regulatory imbalance and impairment: neural and longitudinal evidence. *NeuroImage, 101,* 485-493. https://doi.org/10.1016/j.neuroimage.2014.07.054.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Cox, R. C., Jessup, S. C., & Olatunji, B. O. (2019). Executive dysfunction and emotion dysregulation explain the effects of insomnia symptoms on repetitive negative thinking. *Cognitive Therapy and Research, 43*(6), 995-1004. https://doi.org/10.1007/s10608-019-10033-y

Cross, S. E., Hardin, E. E., & Gercek-Swing, B. (2011). The what, how, why, and where of self-construal. *Personality and Social Psychology Review, 15*(2), 142–179. https://doi.org/10.1177/1088868310373752

Diamond, A. (2013). Executive functions. *Annual Review of Psychology, 64*(1), 135-168. https://doi.org/10.1002/9781118732373.ch7

Dong, H., & Zong, X. (2023). Effects of social exclusion on inhibitory control and working memory—Focusing on hard-of-hearing college students. *International Journal of Frontiers in Sociology, 5*(2), 79-84. https://doi.org/10.25236/IJFS.2023.050214

Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion, 7*(2), 336–353. https://doi.org/10.1037/1528-3542.7.2.336

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Feng, Y. C., Krahé, C., Koster, E. H., Lau, J. Y., & Hirsch, C. R. (2022). Cognitive processes predict worry and anxiety under different stressful situations. *Behaviour Research and Therapy, 157*, 104168. https://doi.org/10.1016/j.brat.2022.104168

Fonagy, P., & Target, M. (2003). Psychoanalytic theories: Perspectives from developmental psychopathology. *Development and Psychopathology, 15*(2), 457–465. https://doi.org/10.1017/S0954579403000241

Fuhrmann, D., Casey, C. S., Speekenbrink, M., & Blakemore, S. J. (2019). Social exclusion affects working memory performance in young adolescent girls. *Developmental Cognitive Neuroscience, 40,* 100718. https://doi.org/10.1016/j.dcn.2019.100718

Gencoz, T. (2000). Positive and negative affect schedule: A study of validity and reliability. *Türk Psikoloji Dergisi, 15* (46), 19-28.

Giovazolias, T. (2024). The relationship of rejection sensitivity to depressive symptoms in adolescence: The indirect effect of perceived social acceptance by peers. *Behavioral Sciences, 14*(1), 10. https://doi.org/10.3390/bs14010010

Grace, J., Stout, J. C., & Malloy, P. F. (1999). Assessing frontal lobe behavioral syndromes with the frontal lobe personality scale. *Assessment, 6*(3), 269-284. https://doi.org/10.1177/107319119900600307

Hayes, A. F. (2022). *Introduction to the mediation, moderation and conditional analysis: A regression-based approach.* (3rd ed.) Guilford Press.

Hui, Q., Yao, C., & You, X. (2023). The mechanism of executive dysfunction in depressive symptoms: the role of emotion regulation strategies. *Current Psychology, 42*(4), 3340-3348. https://doi.org/10.1007/s12144-021-01528-7

IBM Corp. (2015). *IBM SPSS statistics for Windows* (Version 23.0) [Computer software]. IBM Corp.

Judd, C. M., Yzerbyt, V. Y., & Muller, D. (2014). Mediation and moderation. In H.T. Reis & C. M. Judd (Eds.), Handbook of research methods in social and personality psychology (2nd ed., pp. 653-676). Cambridge University Press.

Kim, H. Y. (2013). Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics, 38*(1), 52. https://doi.org/10.5395/rde.2013.38.1.52

Kragel, P. A., Reddan, M. C., LaBar, K. S., & Wager, T. D. (2022). Emotion and the brain: A meta-analytic review of functional neuroimaging studies. *Nature Reviews Neuroscience, 23*(2), 98–114. https://doi.org/10.1038/s41583-021-00558-6

Leary, M. R. (2021). The need to belong, the sociometer, and the pursuit of relational value: Unfinished business. *Self and Identity, 20*(1), 126-143. https://doi.org/10.1080/15298868.2020.1779120

Leary, M. R., Kelly, K. M., Cottrell, C. A., & Schreindorfer, L. S. (2013). Construct validity of the need to belong scale: Mapping the nomological network. *Journal of Personality Assessment, 95(*6), 610-624. https://doi.org/10.1080/00223891.2013.819511

Lei, Y., Li, M., Lin, C., Zhang, C., & Yu, Z. (2024). The effect of ostracism on social withdrawal behavior: the mediating role of self-esteem and the moderating role of rejection sensitivity. *Frontiers in Psychology, 15,* 1411697. https://doi.org/10.3389/fpsyg.2024.1411697

Lezak, M. D. (2004). *Neuropsychological Assessment.* Oxford University Press.

Low, D., Lapsley, D. K., & Jasienska, G. (2022). Self-esteem as a dynamic system responsive to social evaluation. *Scientific Reports,* 12, 10260. https://doi.org/10.1038/s41598-022-10260-6

Madian, N., Bredemeier, K., Heller, W., Miller, G. A., & Warren, S. L. (2019). Repetitive negative thought and executive dysfunction: An interactive pathway to emotional distress. *Cognitive Therapy and Research, 43*, 464-480. https://doi.org/10.1007/s10608-018-9966-x.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*(2), 224–253. https://doi.org/10.1037/0033-295X.98.2.224

Martínez-Monteagudo, M. C., Delgado, B., Díaz-Herrero, Á., & García-Fernández, J. M. (2020). Relationship between suicidal thinking, anxiety, depression and stress in university students who are victims of cyberbullying. *Psychiatry Research, 286,* 112856. https://doi.org/10.1016/j.psychres.2020.112856

Ni, Y., Tein, J. Y., Zhang, M., Zhen, F., Huang, F., Huang, Y., ... & Mei, J. (2020). The need to belong: A parallel process latent growth curve model of late life negative affect and cognitive function. *Archives of Gerontology and Geriatrics, 89*, 104049. https://doi.org/10.1016/j.archger.2020.104049

Otten, M., & Jonas, K. J. (2013). Out of the group, out of control? The brain responds to social exclusion with changes in cognitive control. *Social Cognitive and Affective Neuroscience, 8*(7), 789-794. https://doi.org/10.1093/scan/nss071

Park, B., & Kitayama, S. (2020). Interdependent selves show heightened sensitivity to social evaluation: Cultural influences on emotional and cognitive processes. *Current Opinion in Psychology, 32,* 1–5. https://doi.org/10.1016/j.copsyc.2019.05.008

Peng, S., Ruan, X., Tao, D., & Xuan, B. (2023). Influence of social exclusion on cool and hot inhibitory control in Chinese college students. *International Journal of Environmental Research and Public Health, 20*(3), 2433. https://doi.org/10.3390/ijerph20032433

Peralta, V., Sánchez-Torres, A. M., Gil-Berrozpe, G., de Jalón, E. G., Moreno-Izco, L., Peralta, D., … Rosero, A. (2025). Neurocognitive and social cognitive correlates of social exclusion in psychotic disorders: A 20-year follow-up cohort study. *Social Psychiatry and Psychiatric Epidemiology, 60*(2), 413–426. https://doi.org/10.1007/s00127-024-02742-x

Pessoa, L. (2020). Emotion and the interactive brain: Insights from neuroscience. *Annual Review of Psychology, 71*, 393–423. https://doi.org/10.1146/annurev-psych-010419-051116

Pfundmair, M., Stöger, L. M., & Steffens, C. (2024). Ostracism and suggestibility: How temporary cognitive deficits drive suggestibility after ostracism. *The Journal of Social Psychology, 164(*6), 896-912. https://doi.org/10.1080/00224545.2023.2211251

Pickett, C. L., Gardner, W. L., & Knowles, M. (2004). Getting a cue: The need to belong and enhanced sensitivity to social cues. *Personality and Social Psychology Bulletin, 30*(9), 1095-1107. https://doi.org/10.1177/01461672032620

Reiter-Scheidl, K., Papousek, I., Lackner, H. K., Paechter, M., Weiss, E. M., & Aydin, N. (2018). Aggressive behavior after social exclusion is linked with the spontaneous initiation of more action-oriented coping immediately following the exclusion episode. *Physiology & Behavior, 195*, 142-150. https://doi.org/10.1016/j.physbeh.2018.08.001

Sanchez-Lopez, A., Koster, E. H., Van Put, J., & De Raedt, R. (2019). Attentional disengagement from emotional information predicts future depression via changes in ruminative brooding: A five-month longitudinal eye-tracking study. *Behaviour Research and Therapy, 118*, 30–42. https://doi.org/10.1016/j.brat.2019.03.013

Schneider, F. M., Zwillich, B., Bindl, M. J., Hopp, F. R., Reich, S., & Vorderer, P. (2017). Social media ostracism: The effects of being excluded online. *Computers in Human Behavior, 73* (2017), 385–393. https://doi.org/10.1016/j.chb.2017.03.052

Shackman, A. J., & Wager, T. D. (2021). The emotional brain: Functional circuits underlying affect and cognition. *Trends in Cognitive Sciences, 25*(9), 741–756. https://doi.org/10.1016/j.tics.2021.06.003

Shields, G. S., Sazma, M. A., & Yonelinas, A. P. (2021). The effects of acute stress on core executive functions: A meta-analysis and comparison with cortisol. *Psychological Bulletin, 147*(6), 545–574. https://doi.org/10.1037/bul0000328

Stuss, D. T., & Levine, B. (2002). Adult clinical neuropsychology: lessons from studies of the frontal lobes. *Annual Review of Psychology, 53*(1), 401-433. https://doi.org/10.1146/annurev.psych.53.100901.135220

Stuss, D. T., Benson, D. F., Clermont, R., Della Malva, C. L., Kaplan, E. F., & Weir, W. S. (1986). Language functioning after bilateral prefrontal leukotomy. *Brain and Language, 28*(1), 66-70. https://doi.org/10.1016/0093-934X(86)90091-X

Themanson, J. R., Ball, A. B., Khatcherian, S. M., & Rosen, P. J. (2014). The effects of social exclusion on the ERN and the cognitive control of action monitoring. *Psychophysiology, 51*(3), 215-225. https://doi.org/10.1111/psyp.12172.

Triandis, H. C. (1995). *Individualism and collectivism*. Westview Press.

Waldeck, D., Pancani, L., Morris, E. M., Adie, J., Holliman, A., & Tyndall, I. (2023). Perceived ostracism and paranoia: A test of potential moderating effects of psychological flexibility and inflexibility. *Current Psychology, 42* (33), 29138-29148. https://doi.org/10.1007/s12144-022-04008-8

Wang, J., Lloyd-Evans, B., Giacco, D., Forsyth, R., Nebo, C., Mann, F., & Johnson, S. (2017). Social isolation in mental health: a conceptual and methodological review. *Social Psychiatry and Psychiatric Epidemiology, 52*(12), 1451-1461. https://doi.org/10.1007/s00127-017-1446-1

Wang, T., Mu, W., Li, X., Gu, X., & Duan, W. (2022). Cyber-ostracism and wellbeing: A moderated mediation model of need satisfaction and psychological stress. *Current Psychology, 41*, 4931-4941. https://doi.org/10.1007/s12144-020-00997-6

Watson, D., Clark, A., Lee. & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070. https://doi.org/10.1037/0022-3514.54.6.1063

Williams, K. D. (2009). Ostracism: A temporal need-threat model. *Advances in Experimental Social Psychology, 41*, 275-314. https://doi.org/10.1016/S0065-2601(08)00406-1

Xu, M., Qiao, L., Qi, S., Li, Z., Diao, L., Fan, L., Zhang, L., & Yang, D. (2018). Social exclusion weakens storage capacity and attentional filtering ability in visual working memory. *Social Cognitive and Affective Neuroscience, 13*(1), 92–101. https://doi.org/10.1093/scan/nsx139

Xu, M., Li, Z., Qi, S., Fan, L., Zhou, X., & Yang, D. (2020). Social exclusion modulates dual mechanisms of cognitive control: Evidence from ERPs. *Human Brain Mapping, 41*(10), 2669-2685. https://doi.org/10.1002/hbm.24970

Yılmaz, S., & Alan, R. (2024). Need to belong and cognitive flexibility in young adults: Mediating role of negative affect and moderating role of agreeableness. *Current Approaches in Psychiatry, 16*(Supplement 1), 79-86. https://doi.org/10.18863/pgy.1432666

Zimmer-Gembeck, M. J., Nesdale, D., McGregor, L., & Mastro, S. (2021). Rejection sensitivity and social behavior: A meta-analytic review. *Psychological Bulletin, 147*(4), 356–389. https://doi.org/10.1037/bul0000319