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## Parallel Mediators between Difficulty in Emotion Regulation and Psychological Distress: TikTok and Rumination

**Abstract:** Individuals encounter challenging circumstances throughout their lives. Emotional control plays a role in dealing with these situations. Emotional regulation refers to the capacity to comprehend and consciously respond to one's emotional responses. Hence, the objective of this study was to examine the intermediary function of rumination and TikTok usage in the relationship between challenges in emotion regulation and psychological distress. We conducted the first analysis of the relationships between these variables. The study involved a cohort of 338 participants aged 18 and above. The study's data was analyzed using structural equation modeling (SEM) to investigate the mediation dimension. The study found that problematic TikTok use and rumination play a comparable function in mediating the relationship between emotion control and psychological suffering. The model revealed a positive correlation between emotion regulation problems and psychological discomfort, problematic TikTok use, and rumination. Enhancing the ability to regulate emotions is crucial for mitigating the risk of excessive TikTok usage in those experiencing psychological distress and rumination.

**Keywords:** *emotion regulation difficulty, rumination, psychological distress, problematic TikTok use*

### INTRODUCTION

Psychological distress refers to a condition of psychological suffering that greatly affects a person's overall well-being. It is characterized by emotions of apathy, hopelessness, sadness (as observed in depression), and tension and restlessness accompanied by anxiety (Mirowsky & Ross, 2002). Psychological distress, according to the American Psychological Association, refers to a collection of distressing physical and mental symptoms that arise from changes in mood experienced by the majority of individuals. Psychological distress is a significant condition characterized by intense discomfort that can potentially result in suicide ideation, as well as other health issues such as disrupted sleep patterns, anxiety, and dysphoria (Chan, 2006). According to a study by Williams and Hasking (2009), there is a positive correlation between psychological discomfort and non-suicidal self-harm conduct. This means that psychological distress can either be a coping technique for self-harm or it might be

a consequence of self-harm behavior. Individuals who have little ability to regulate their emotions may engage in self-harming behavior as a means of dealing with psychological distress, as indicated by the same study. Emotion regulation is the deliberate measure taken by an individual to manage, comprehend, and modify their powerful and transient emotional responses that arise during the pursuit of their objectives (Thompson, 1994). Emotion regulation difficulty is a significant factor contributing to psychological suffering (Ünlü Kaynakçı & Yerin Güneri, 2023). Undeniably, emotions hold a significant position in our lives that demands acknowledgment. People encounter intense emotions that require effective management in their everyday lives. In order to foster constructive connections with other individuals in society, it is imperative to possess the ability to manage and articulate one's emotions. The regulation of emotions serves as a fundamental requirement for effective functioning in this context (Gross et al., 2006). Several studies have examined the relationship between emotion regulation, rumination,



negative affect, depression, mindfulness, and perceived stress. One study found that both rumination and negative emotion regulation strategies played a mediating role in the relationship between negative affect and depression (Zuzama et al., 2020). Another study found that they also partially mediated the relationship between mindfulness and perceived stress (Cenkseven Önder & Utkan, 2018). The correlation analysis of a longitudinal study revealed that the level of difficulty in emotion management was strongly and positively associated with rumination. The study by Josefsson et al. (2017) found consistent and verifiable direct impacts of mindfulness on rumination and emotion control. Rumination is a significant cognitive activity that links specific elements of challenges in regulating emotions with post-traumatic stress disorder (PTSD) (Pugach et al., 2020). Furthermore, Ehrling and Ehlers (2014) demonstrated that rumination acts as a mediator in the connection between a diminished ability to regulate emotions and the development of post-traumatic stress disorder (PTSD).

When we consider psychological distress within the scope of sleep disorder, it is seen that it can be associated with rumination. According to a longitudinal study, while sleep duration decreased with age, rumination and psychological distress increased, and while rumination was a predictor of future psychological distress, distress also predicted rumination (Mazzer et al., 2019). Rumination is usually a reaction to stressful experiences and often stands out as a form of behavior that makes it difficult to cope (Öztürkler As & Babayiğit, 2023). Rumination, one of the important symptoms of depression, is defined as the process of thinking persistently about people's feelings and problems rather than the content of thoughts (Mor & Winquist, 2002; Nolen-Hoeksema et al., 2008). The findings of two studies, one of which was longitudinal, revealed that the interaction of rumination and stress predicted the increase in psychological distress (Morrison & O'Connor, 2005; Morrison & O'Connor, 2008). In another longitudinal study, a positive unidirectional relationship between psychological distress and rumination was also found (Buelens et al., 2019). A longitudinal study also found that rumination and concealment, which are emotional reactions, are positively correlated with psychological distress (Boyes et al., 2016).

One context in which psychological distress can be addressed is social media. Sampsa-Kanyinga and Lewis (2015) found that social media use for more than two hours a day was associated with increased levels of psychological distress. There are also longitudinal studies suggesting that there are relationships between problematic social media and internet use and psychological distress (Chang et al., 2022; Chen et al., 2020). Social networks are versatile platforms that provide individuals with the opportunity to participate in various virtual communities where they can interact in different types of interactions by offering a wide range of communication. These platforms offer a rich social experience in the digital world by facilitating people to connect, share information, and

interact based on common interests. To better understand the current impact of social media, it would be useful to consider that more than half of the world's population uses social media and these people spend about 2 and a half hours a day on social media (Datareportal, 2020). Social media use is a phenomenon that can also be associated with the concept of emotion regulation. Considering the number of users and the duration of daily use, the fact that social network use serves the purpose of emotion regulation can lead to problematic social network use making social network use a greater threat (Zsido et al., 2021). In addition, the results of a study found that there is a significant positive relationship between emotion regulation difficulties and addiction to social networking sites (Aurelia et al., 2023). A longitudinal study emphasized the importance of emotion regulation in the spontaneous recovery of problematic social media use in adolescents (Wartberg & Lindenberg, 2020). On the other hand, it can be said that rumination is a factor that contributes to the impulsive use of social media, as well as the use of technology as a way to distract themselves from ruminative thoughts (Davis, 2001). It is well established that there is a long-term association between depressive symptoms, both rumination and problematic smartphone use (Li et al., 2024). It is evident that rumination is an aberrant method of regulating emotions (Samtani & Moulds 2017). Individuals' tendency to use maladaptive emotion regulation strategies while on Facebook may also serve to increase their rumination levels when they are offline and prolong their distress symptoms (Tran, 2012). According to these findings, it is possible that rumination and problematic TikTok use are associated with psychological distress and emotion control. When it comes to social media use, platforms such as Facebook, Youtube, Twitter, Instagram, Whatsapp, and TikTok, which can be considered a new generation compared to these, can be mentioned. The fact that Turkey is among the top 10 countries in the world that use TikTok the most is important data for us to interpret the impact of TikTok on Turkey (Statistica, 2023). TikTok is one of the applications based on shooting and sharing short videos in general, and the videos shot here can also be shared on different social media platforms (Zhang et al., 2019). It is also known that TikTok has a harmless side such as mediating people to have fun, but it also contains a threat that can lead to addiction (Bizel et al., 2022).

In the light of the relevant literature review, the necessity and functionality of emotion regulation at every moment of life in the struggle of the individual with all these experiences cannot be ignored if we look at the social and psychological nature of human beings, along with the abundance of a wide variety of experiences that can confront people with psychological distress in their lives. In this struggle, the individual's lack of emotional regulation and psychological distress make it necessary to examine the tendency to ruminate with continuous thinking. On the other hand, the rapid development of technology, while moving social media platforms toward the center of human life, makes it possible to add another

phenomenon to this struggle. The fact that the use of social media becomes problematic in human life allows this issue to be evaluated within the scope of the formation of psychological distress and the need for emotion regulation, as in other problems. TikTok, which initially catered to children and young adults, has reportedly broadened its user base to encompass mainstream adults. While TikTok has not yet attained the same degree of popularity as Facebook and Instagram, it has quickly achieved strong traction among adults (Hellemans et al., 2021). Researchers consider TikTok as the fastest-growing social networking application (Weimann & Masri 2020). However, this rapidly growing platform also presents problems in terms of usage. The present study specifically analyzed the investigated topics within the context of TikTok, a contemporary phenomenon, as opposed to other social networking platforms. In this context, the research aims to examine the mediating role of rumination and problematic TikTok use between emotion regulation difficulties and psychological distress. Therefore, the following hypotheses will be tested.

*H1.* There is a positive relationship between difficulties in emotion regulation and psychological distress.

*H2.* Problematic TikTok use has a mediating role between emotion dysregulation and psychological distress.

*H3.* Rumination has a mediating role between difficulty in emotion regulation and psychological distress.

*H4.* There is a parallel mediation role of problematic TikTok use and rumination between difficulty in emotion regulation and psychological distress.

## METHOD

### Participants and Procedure

A total of 338 participants, 117 males (34.6%) and 221 (65.4%) females, aged between 18-48 years, participated in the study. Participants voluntarily completed the consent form. The participants included in the study were reached through social media and online with the convenience sampling method.

## MEASURES

### Problematic TikTok Use Scale

The scale developed by D'souza et al. (2022) consists of 16 items and is a 5-point Likert type (1 = never and 5 = always). The Turkish adaptation study of the scale was conducted by Günlü et al. The scale has three sub-dimensions: obsession, escape, and lack of control. A minimum score of 16 points and a maximum score of 80 points can be obtained from the scale. The Cronbach's alpha reliability of the scale is 0.90 and the Cronbach's alpha reliability of the sub-dimensions of the scale is 0.85 for obsession, 0.90 for escape, and 0.85 for lack of control.

### Rumination Scale for Interpersonal Error

The scale was developed by Wade, Vogel, Liao, and Goldman (2008) and adapted into Turkish by Oral and Arslan (2017). It is a 5-point Likert-type scale consisting

of 6 items. Scale items are rated from 1 (strongly disagree) to 5 (strongly agree). A minimum of 6 and a maximum of 30 points can be obtained from the scale. The increase in the scores obtained from the scale indicates that the level of rumination related to interpersonal error increases in the individual. There is no reverse-scored item. Cronbach's alpha internal consistency reliability coefficient was found to be 0.88 and the test-retest correlation was 0.76.

### Difficulty in Emotion Regulation Scale

The Emotion Regulation Difficulty Scale-8 developed by Penner, Steinberg and Sharp (2022) was adapted into Turkish by Ekşi and Erik (2023). The scale consists of a total of 8 items and four sub-dimensions and the sub-dimensions are purpose, impulse, non-acceptance and strategy. In the 5-point Likert-type scale, items are scored as 1= Almost never (0-10%), 2= Sometimes (11-35%), 3= About half the time (36-65%), 4= Most of the time (66-90%), 5= Almost always (91-100%). The lowest score that can be obtained from the scale is 8 and the highest score is 40. A high score on the scale indicates that the difficulty in emotion regulation is high. The internal consistency value of the scale was found to be  $\alpha = 0.87$ , while the internal consistency value found for its sub-dimensions varied between 0.68 and 0.77.

### Psychological Distress Scale

Altun, Özen, and Kuloglu (2019) adapted the Kessler Psychological Distress Scale (K10-PSÖ, Psychological Distress Scale) developed by Kessler et al. (2003) into Turkish. It is a 5-point Likert-type scale consisting of 10 items (1-never, 5-constantly). The lowest score that can be obtained from the scale is 10 and the highest score is 50. A higher score on the scale indicates more psychological distress. In the validity and reliability tests, Cronbach's alpha=0.95 was calculated.

### Data Analysis

The data obtained based on the information provided by the participants within the scope of the research were analyzed using SPSS and AMOS programs. Firstly, normality analyses, descriptive statistics, reliability analyses, and correlation analyses were performed for the relationships between the concepts of emotion regulation difficulty, problematic TikTok use, rumination, and psychological distress. As a result of the significant relationships between the concepts, structural equation modeling, which is analyzed quantitatively in terms of many parameters and is a powerful statistic, was started. While conducting SEM, the measurement test between the concepts was first conducted by taking into account the recommendations of the literature, and then the path analysis was started (Kline, 2011). If the tested measurement fit values were acceptable, the structural model was started. The goodness of fit indices recommended by Hu and Bentler (1999) were taken as criteria for the results of the tested measurement and SEM. In this context, in addition to the chi-square ( $\chi^2$ ) and degrees of freedom,

CFI, NFI, TLI, SRMR, and RMSEA values were calculated. As critical values, the ratio of  $\chi^2$  to degrees of freedom should be less than 5, CFI, NFI, and TLI values should be higher than .90, and SRMR and RMSEA values should be lower than .80 (Hu & Bentler 1999; Tabachnick & Fidell, 2001). Then, to determine which model is the best model in SEM, AIC and ECVI values were examined as well as the chi-square difference test. Whichever model has smaller AIC and ECVI values is accepted as the best model (Akaike 1987; Browne and Cudeck 1993).

To strengthen and support the study, bootstrapping was used to strengthen the significance of the mediation test (Preacher & Hayes, 2008). With the bootstrapping process, the number of samples was increased to 5000 and a confidence interval was created with the bootstrap value. The absence of zero in this confidence interval indicates that the mediation is significant.

## RESULTS

In this section, descriptive statistics and correlation analyses are presented. Then, the results of the measurement model and the structural model are presented. Finally, the results of the bootstrapping process are presented.

The normality assumption of the variables should be within  $\pm 2$  for skewness and  $\pm 7$  for kurtosis (Finney & DiStefano, 2006). In Table 1, Skewness are between (-.399 and 1.946) and Kurtosis is between (-.586 and 3.34), which shows a normal distribution.

When the relationships between variables are examined in Table 1, it is seen that difficulties in emotion regulation and problematic TikTok use ( $r: .22$   $p < .001$ ), difficulties in emotion regulation and rumination ( $r: .47$   $p < .001$ ), difficulties in emotion regulation and psychological distress ( $r: .51$   $p < .001$ ), psychological distress and problematic TikTok use ( $r: .24$   $p < .001$ ), psychological distress and rumination ( $r: .36$   $p < .001$ ), rumination and problematic TikTok use ( $r: .19$   $p < .001$ ).

Considering the measurement model, there are 4 latent variables and 11 observed variables consisting of emotion regulation difficulty, problematic TikTok use, rumination, and psychological distress variables. According to the measurement results,  $\chi^2/SD$ : 2.237, GFI .961, CFI .978, NFI .961, TLI .968, RFI .943, IFI .978, SRMR .027, RMSA .061. Factor loadings ranged between .55 and .96.

In the post-measurement structural model, firstly, the model in which problematic TikTok use and rumination were fully mediated between adults' emotion regulation difficulties and psychological distress was tested. In the partial mediation model, there is no direct path between the independent and dependent variables. As a result of the analysis, significant results were obtained, and fit values ( $\chi^2/SD$ : 3.47, GFI .937, CFI .953, NFI .936, TLI .935, RFI .912, IFI .953, SRMR .086, RMSA .086, AIC 191.086, ECVI .567). The partial mediating role of problematic TikTok use and rumination was examined between emotion regulation difficulties and psychological distress in the other model. In partial mediation, there is a direct path between the independent and dependent variables. After significant results were obtained, fit values were examined ( $\chi^2/SD$ : 3.47, GFI .937, CFI .953, NFI .936, TLI .935, RFI .912, IFI .953, SRMR .086, RMSA .086, AIC 191.086, ECVI .567). Since both models were significant and their goodness of fit was at an acceptable level, AIC and ECVI values and chi-square difference test were examined to determine which model explained the model better. According to the results of the chi-square difference test, it is understood that the direct path added between difficulties in emotion regulation and psychological distress is significant and contributes to the model ( $\Delta\chi^2 = 50.75$ ,  $sd = 1$ ,  $p < .001$ ). In addition, the AIC and ECVI values of the partial mediation model are smaller than the AIC and ECVI values of the full mediation model. Therefore, the partial mediation model was preferred.

In line with all these results, the model in which problematic TikTok use and rumination have a partial mediating role between emotion regulation difficulties and psychological distress of adults was determined. The path coefficients of this model are given in Figure 1.

After the bootstrapping process was carried out to strengthen and support the research, it was seen that the direct path coefficients of emotion regulation difficulty towards psychological distress, as well as problematic TikTok use and rumination, were significant (bootstrap: .103 95% confidence interval, lower limit- upper limit: .035, .180). Considering all these results, it can be said that adults' problematic TikTok use and rumination levels play a partial mediating role between emotion dysregulation and psychological distress. In addition, according to the model, it can be stated that problematic TikTok use and rumination have a parallel mediating role between emotion dysregulation and psychological distress.

**Table 1**

	N	Mean	SD	Skewness	Kurtosis	1	2	3
1 – Problematic TikTok use	338	21.63	9.39	1.94	3.34	-		
2 – Rumination	338	19.26	6.36	-.339	-.586	.19**	-	
3 – Difficulty regulating emotion	338	19.35	7.79	.401	-.531	.22**	.47**	-
4 – Psychological distress	338	25.68	8.34	.543	.088	.24**	.36**	.51**

\*\* $p < .001$

## DISCUSSION

Psychological distress, which is characterised by symptoms such as a negative mood and fatigue, refers to a mental state that includes depression and anxiety and is milder than a clinical mental illness (Cockerhama et al., 2006). The fact that it makes the living conditions of individuals difficult makes it necessary to cope with this mental state. The fact that difficulty in emotion regulation contributes to higher levels of psychological distress (Guerrini-Usubi et al., 2002) shows the importance of emotion regulation in coping with psychological distress. Through this study, it was aimed to test the mediating role of rumination and TikTok use between emotion dysregulation and psychological distress. According to the results, rumination and problematic TikTok use have a parallel mediation role between emotion dysregulation and psychological distress. The hypotheses are discussed below based on this result.

Firstly, the relationship between difficulties in emotion regulation and psychological distress was analyzed. According to the results of the analysis, the hypothesis that there is a significant positive relationship between emotion regulation difficulties and psychological distress was confirmed. Emotion regulation difficulties have an important role in causing psychological distress (Ünlü Kaynakçı & Yerin Güneri, 2023). As a result, if individuals' emotion regulation skills are improved, it may be possible to reduce the possibility of suffering from psychological distress.

In the other hypothesis, the mediating role of problematic TikTok use between emotion regulation difficulties and psychological distress was examined and found to be correct. Chang et al. (2020) found a unidirectional relationship between problematic social media use and psychological distress in a longitudinal study. In addition, in another longitudinal study, prevention of problematic use was significantly associated with the prevention and growth of psychological distress (Chang et al., 2022). On the other hand, a longitudinal study has shown that emotion regulation skills in middle childhood have an role on internet addiction in adolescence (Cimino & Cerniglia, 2018). Based on these results, it may be possible to reduce psychological distress by controlling problematic TikTok use with emotion regulation.

In another hypothesis, the mediating role of rumination between difficulties in emotion regulation and psychological distress was tested and its accuracy was supported. Buelens et al. (2019) found a positive unidirectional relationship between psychological distress and rumination in their longitudinal study. On the other hand, emotion regulation difficulty was measured in a study, and positive relationships between rumination were shown (Josefsson et al., 2017). In this context, it can be said that rumination will decrease and the increase in psychological distress can be prevented by increasing the individual's emotion regulation skills.

It is important to note that the present study can only elucidate these connections within the parameters of the

variables investigated. Furthermore, it should be emphasized that these variables are also associated with various concepts. The mediation function of depressive tendencies in the association between neuroticism and consciousness with TikTok use disorder has been demonstrated in prior studies within the realm of personality traits (Montag & Markett, 2024). Furthermore, there exists a negative correlation between neuroticism and both problematic social media use and psychological discomfort (Đurić et al., 2024; McKenzie et al., 2012). It is well established that procrastination mediates the link between problematic TikTok use and depression symptoms (Rogowska & Cincio, 2024). When examining other personality qualities linked to psychological suffering, it was noted that progressive increases in extraversion and consciousness were accompanied by reductions in distress over time. Previous research by Joshanloo (2024) showed that higher levels of distress were associated with lower emotional stability, while higher levels of agreeableness were associated with lower distress. Conversely, there is a positive correlation between neuroticism and problematic smartphone use, as well as a negative correlation between conscientiousness and emotion regulation impairments and impulse control difficulties (Horwood & Anglim, 2021). Empirical evidence suggests that emotional overproduction plays a mediating role in the association between neuroticism and rumination (Hervas & Vazquez, 2011). Given these factors, it is important to note that in addition to the personality trait connections of the concepts in issue and the results of the present study, the concepts in the literature that may be confounding variables in future research should be examined.

Finally, the main hypothesis was to test the parallel mediating role of problematic TikTok use and rumination between emotion dysregulation and psychological distress. At the end of the study, it was found that increased emotion dysregulation increased psychological distress, rumination, and problematic TikTok use. In the related literature review, it has been observed that problematic social media and internet use has been associated with psychological distress and rumination in separate studies (Chang et al., 2022; Chen et al., 2020; Davis, 2001), and it has also been noticed that this can serve the purpose of emotion regulation (Zsido et al., 2021). Furthermore, the discovery that fear of missing out (FoMO) and dwelling on the past (rumination) play a part in the link between social anxiety and problematic Facebook use suggests that the current study's results (Dempsey et al., 2019) are comparable. Although the study findings show a positive correlation between rumination and internet use disorder, other factors, like negative emotional states, underscore the importance of rumination in explaining internet use disorder (Castro-Calvo et al., 2022). Elhai et al. (2020) found a positive correlation between negative smartphone use, including rumination and distress reduction, and greater problematic smartphone use. It can be thought that it may be beneficial for individuals to have no difficulty in emotion regulation to overcome psychological distress, ruminative thoughts, and problematic TikTok use.

## CONCLUSION

Looking at the results of the present research the partial mediation role of problematic TikTok use and rumination between emotion regulation and psychological distress was reached. This result tested the parallel mediating role of problematic TikTok use and rumination between difficulty in emotion regulation and psychological distress and the hypothesis was confirmed. The relationships between these variables have been investigated for the first time. It can be considered a quantitative model explaining the relationship between emotion regulation difficulties, psychological distress, problematic TikTok use, and rumination among Turkish adults. As life continues, there is a need to be with emotions and regulate them at all times. Therefore, difficulties experienced in this regulation cause the person to experience rumination, problematic social media use, and therefore-also suffer psychological distress. Within the framework of these results, it may be recommended to make programs that will increase emotional regulation. This study will make an important contribution to the literature for a more peaceful life in terms of regulating emotions.

## LIMITATIONS AND FUTURE RESEARCH

Although the study examined the mediating role of problematic TikTok use and rumination on the relationship between emotion regulation difficulties and psychological distress, it should be noted that there are some limitations. First, the generalizability of the sample and sample size is limited. It consists only of Turkish adults. Therefore, its generalizability can be increased in adults in different cultures and in different large samples. Occasionally, certain governments impose rules or restrictions on the use of social media platforms in accordance with their political determinations. Yang (2024) identifies TikTok as one of these platforms. The interpretation of the correlations between the categories should be based on the fact that the sample in the present study comprises Turkish adults and that TikTok usage is free in Turkey. An investigation into nations without TikTok usage or age groups with reduced TikTok usage can provide valuable insights into the connections between the key factors from many viewpoints. Secondly, it might have been possible to look at different concepts other than problematic TikTok use and rumination as mediator variables. The research is limited to the mediating role of the mentioned concepts between emotion regulation difficulty and psychological distress. Thirdly, participants participated according to their own ideas regarding the collection of data. Different data collection methods can also be used. Finally, our research is a cross-sectional. Cross-sectional studies are insufficient to establish causality. For this reason, longitudinal studies might focus on causality. As another suggestion, psycho-educational programs can be created to reduce emotion regulation difficulties.

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