



RESEARCH ARTICLE / ARAŞTIRMA YAZISI

# The Mediating Role of Emotion Regulation in the Relationship Between Problematic Social Network Use and Trait Anxiety

## Sosyal Ağların Sorunlu Kullanımı ve Sürekli Kaygı Arasındaki İlişkide Duygu Düzenlemenin Aracı Rolü

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### Abstract:

This study aimed to investigate the mediating role of emotion regulation (ER) in the relationship between problematic social network use (PSNU) and trait anxiety (TA) levels. Five hundred thirty-one adult participants residing in Türkiye took part in this correlational study. Data were collected using the Bergen Social Media Addiction Scale, the Trait Anxiety Inventory, and the Emotion Regulation Skills Scale. Structural equation modelling was employed to assess the mediating effect of ER. The findings revealed a significant positive relationship between PSNU and TA. Additionally, a significant negative relationship was observed between PSNU and ER, as well as between ER and TA. ER was found to mediate the relationship between PSNU and TA. When ER was incorporated into the model, the direct effect of PSNU on TA decreased but remained statistically significant, indicating a partial mediation effect. PSNU alone accounted for 24% of the variance in TA; however, with the inclusion of ER as a mediator, the explained variance increased to 51%. The research model was validated, and the theoretical framework was supported. The results suggest that difficulties in ER may contribute to the behavioural addiction cycle of PSNU. Therefore, it is recommended that the interrelationships among anxiety, ER difficulties, and PSNU be considered in clinical assessment and treatment processes.

**Keywords:** Addictive Behaviour, Social Media Addiction, Anxiety, Emotion Regulation.

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**Öz:**

Bu araştırmanın amacı sosyal ağların sorunlu kullanımı (SASK) ile sürekli kaygı düzeyi arasındaki ilişkide duygu düzenlemenin (DD)'nin aracı rolünü incelemektir. Türkiye'de ikamet eden toplam 531 yetişkin katılımcı; korelasyonel desenli olan bu çalışmada yer almıştır. Veriler Bergen Sosyal Medya Bağımlılığı Ölçeği, Sürekli Kaygı Envanteri ve Duygu Düzenleme Becerileri Ölçeği ile toplanmıştır. DD'nin aracı rolü yapısal eşitlik modellemesinde analiz edilmiştir. Bulgular, SASK ile sürekli kaygı arasında anlamlı pozitif bir ilişki olduğunu ortaya çıkarmıştır. SASK ve sürekli kaygı ile DD arasında anlamlı negatif bir ilişki gözlenmiştir. DD'nin SASK ile sürekli kaygı arasındaki ilişkiye aracılık ettiği belirlenmiştir. DD aracı değişken olarak modele dahil edildiğinde, SASK'nın sürekli kaygı üzerindeki doğrudan etkisi azalmış, ancak istatistiksel olarak anlamlı kalmaya devam etmiştir. Bu bulgu, DD'nin araştırma modelindeki kısmi aracı rolünü ortaya çıkarmıştır. SASK tek başına sürekli kaygıdaki varyansın %24'ünü açıklamıştır. DD'nin aracı değişken olarak modele dahil edilmesiyle, açıklanan varyans %51'e yükselmiştir. Araştırma modeli doğrulanmış ve teorik çerçeve desteklenmiştir. Sonuçlar, DD'deki güçlüklerin SASK'nın davranışsal bağımlılık döngüsüne katkıda bulunabileceğini göstermektedir. Bu nedenlerle, kaygı, DD güçlükleri ve SASK arasındaki karşılıklı ilişkilerin klinik değerlendirme ve tedavi süreçlerinde değerlendirilmesi önerilmektedir.

**Anahtar Kelimeler:** Davranışsal Bağımlılık, Sosyal Medya Bağımlılığı, Kaygı, Duygu Düzenleme.

**Introduction**

Behavioural addiction can manifest in various ways, including significant distress in daily life, difficulties in interpersonal relationships, a compulsive urge to repeat certain behaviours, and increasing challenges in self-regulation (Wegmann & Brand, 2020). The academic field increasingly acknowledges a spectrum of behavioural addictions that encompass patterns such as problematic social media use, compulsive exercise, and compulsive shopping. Within this recognized spectrum, problematic social network use (PSNU) has been identified as a distinct subtype of behavioural addiction (Vink, Van Beijsterveldt, Huppertz, Bartels & Boomsma, 2016).

Griffiths (2005) identified six key components commonly observed in behavioural addictions. These include the increasing centrality of the behaviour in an individual's life (salience), the need for more frequent engagement to achieve the same effect (tolerance), the use of the behaviour as a means of altering mood (mood modification), the experience of negative emotional or physical states when attempting to stop (withdrawal), the emergence of interpersonal or functional difficulties (conflict), and the tendency to resume the behaviour after attempts to quit (relapse). Examining PSNU through the lens of behavioural addiction reveals analogous patterns. Specifically, PSNU is characterized by an excessive allocation of motivation, time, and effort towards social network use, often at the expense of psychosocial well-being, interpersonal relationships, occupational or academic responsibilities, and other significant life domains (Andreassen & Pallesen, 2014).

Although research on the prevalence of PSNU remains limited, some studies have reported rates as high as 17% (Meng et al., 2019) and 18% (Salari et al., 2023). Recent investigations have explored the psychological factors underlying individuals' attachment to social networks. Kuss and Griffiths (2017) identified several contributing factors to PSNU, including the fear of missing out (FOMO) on social connections and anxiety related to mobile phone disconnection, known as nomophobia. These findings align with those of Andreassen and colleagues (2016), who reported that PSNU is associated with elevated levels of depression and anxiety. Gaming disorder, a form of behavioural addiction, has been identified as being associated with difficulties in emotion regulation (Elkin & Kılınçel, 2024). The mental health

implications of PSNU have become increasingly evident, with studies finding connections to various psychological challenges, from attachment issues (Bai et al., 2024; Bassi, Mancinelli, Salcuni, Gori, & Musetti, 2023) to attention problems and sleep disturbances (Hussain & Griffiths, 2021). Personality traits also play a role, as research points to links with neuroticism (Gugushvili, Täht, Schruoff-Lim, Ruiter, & Verduyn, 2024) and narcissistic tendencies (Hou, Ren, Rozgonjuk, Xi, & Möttus, 2024). A review of studies conducted between 2013 and 2023 reveals that the relationship between PSNU and social anxiety has been examined in a limited number of studies (Balci, Tiryaki, & Karakuş, 2024). The relationship between social network use and mental health appears to be complex, with anxiety emerging as a particularly salient factor; it may both contribute to maladaptive behaviour and be exacerbated by it (Wong et al., 2019; Brailovskaia, Schillack, & Margraf, 2020). Sirota, Moskovchenko, Yaltonsky, and Yaltonskaya (2019) observed that highly anxious individuals often turn to social networks as a means of alleviating anxiety-related distress. Cognitive Behavioral Therapy has been demonstrated to be an efficacious treatment for social anxiety disorder (Çelikel, & Karaaziz, 2025).

Contemporary research suggests that individuals commonly adopt three distinct strategies when managing maladaptive emotion regulation (ER): avoidance, suppression, and rumination. Empirical evidence has shown that the use of such maladaptive strategies is significantly associated with elevated anxiety levels (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Furthermore, the investigation conducted by Fokker, Zong, & Treur (2021) established that PSNU often functions as an avoidance-based coping mechanism, exhibiting patterns characteristic of other behavioral addictions. Their research revealed that individuals struggling with PSNU often experience more negative emotions, manage stress poorly, and frequently use distraction to cope. This aligns with Sirota et al.'s (2019) findings that difficulties in managing emotions and high anxiety levels often go hand in hand with PSNU. Elevated levels of GAD symptoms have been demonstrated to indicate an augmented proclivity for emotion regulation challenges, concomitant with a pronounced intensification of anxiety symptoms (Vatan, & Battaloğlu, 2024).

This study investigates the potential mediating role of difficulties in ER in the relationship between PSNU and trait anxiety (TA). Two primary research questions guide this research: (1) What are the interrelationships among PSNU, TA, and difficulties in ER? (2) To what extent do difficulties in ER function as a mediator in the established association between PSNU and TA?

## Method

### Sample

A convenient sampling method was employed in the study, with 531 participants residing in Türkiye. All participants

were informed about the study in advance, and informed consent was obtained. Ethical approval was granted by the Samsun University (Türkiye) Ethics Committee (Decision no: 2024/48; Date: 14/06/2024). This study adopted a correlational design, and the inclusion criteria were as follows: participants had to be 18 or older and active users of social networks. By the prescribed protocol, participants with psychiatric or neurological complaints that could potentially affect the study's results were excluded from the study. Power analyses indicated a minimum of 431 participants were required for the study group (Cohen, 1988; Westland, 2010). The demographic characteristics of the sample are presented in Table 1.

**Table 1.** Demographic Characteristics of the Participants

Variable	Subcategory	Number of Participants	Percentage (%)
Age Group	18–22 years	162	30.5
	23–38 years	227	42.7
	38+ years	142	26.7
Gender	Female	375	70.6
	Male	156	29.4
Educational Level	Primary-Secondary Education	4	0.8
	High School	18	3.4
	Associate Degree/Undergraduate Student	253	47.6
	Undergraduate Graduate	167	31.4
	Postgraduate Student	26	4.9
	Postgraduate Graduate	63	11.9
<b>Total</b>		<b>531</b>	<b>100</b>

### Data Analysis

The data was collated online via the SurveyMonkey.com platform. The resulting data sets were prepared using the SPSS 22 programme. Structural equation modelling analysis was conducted using AMOS.

### Data Collection Tools

#### Bergen Social Media Addiction Scale

The scale assesses PSNU using a 5-point Likert scale. It was originally developed by Andreassen and colleagues (2016) and adapted into Turkish by Demirici (2019). The internal consistency coefficient was 0,88.

#### Trait Anxiety Inventory

The inventory, initially developed by Spielberger, Gorsuch, and Lushene (1970), measures levels of TA. Le Compte and Öner (1985) adapted the scale into Turkish. The reliability coefficient of the Turkish version was reported as .84 in a study conducted by Gül Akman and Ceyhan (2009).

#### Emotion Regulation Skills Scale

Initially developed by Berking and Znoj (2008), the scale assesses ER skills. The 27-item scale assesses ER across nine sub-dimensions: understanding, awareness, body sensations, acceptance, preparing for confrontation,

clarity, self-support, tolerance, and reframing. Higher total scores indicate greater ER skills. The Turkish adaptation (Vatan & Oruçlular Kahya, 2018) reported a Cronbach's alpha reliability coefficient of 0,95. The scale is a self-report instrument utilizing a 5-point Likert scale.

## Findings

### Problematic Social Network Use

A significant difference in PSNU was observed across age groups [ $F(2, 528) = 29,21; p < 0,001$ ]. The 18–22 age group ( $M = 19,45; SD = 5,21$ ) reported higher PSNU levels compared to both the 23–38 age group ( $M = 17,11; SD = 5,10; p < 0,001$ ) and the 38+ age group ( $M = 15,12; SD = 5,67; p < 0,01$ ).

A significant relationship was found between daily social network usage duration and PSNU [ $F(5, 525) = 33,68; p < 0,001$ ]. Individuals who used social networks for 6 hours or more per day ( $M = 19,92; SD = 5,48$ ) had significantly higher PSNU scores compared to those using social networks for 30 minutes or less ( $M = 12,89; SD = 4,32; p < 0,001$ ), 30 minutes to 1 hour ( $M = 14,30; SD = 4,89; p < 0,001$ ), and 1-2 hours ( $M = 15,71; SD = 5,14; p < 0,001$ ).

A significant relationship was also found between the frequency of checking social networks and PSNU [ $F(5,$

525) = 26,85;  $p < 0,001$ ]. Individuals who checked social networks 30 or more times per day ( $M = 20,76$ ;  $SD = 5,47$ ) had significantly higher PSNU scores than those checking 1–5 times ( $M = 14,12$ ;  $SD = 5,11$ ;  $p < 0,001$ ), 6–10 times ( $M = 15,35$ ;  $SD = 5,21$ ;  $p < 0,01$ ), and 16–20 times ( $M = 14,90$ ;  $SD = 5,34$ ;  $p < 0,001$ ).

#### Trait Anxiety

A significant difference in TA was also observed based on the number of days participants used social networks per week [ $F(6, 524) = 6,81$ ;  $p < 0,001$ ]. Individuals using social networks 7 days per week ( $M = 48,94$ ;  $SD = 5,39$ ) reported higher TA levels compared to those using social networks for 1 day per week ( $M = 45,12$ ;  $SD = 4,76$ ;  $p < 0,001$ ) and 3 days per week ( $M = 46,50$ ;  $SD = 5,21$ ;  $p < 0,01$ ).

#### Emotion Regulation

A significant difference in ER scores was found based on the number of times participants posted on social networks per day [ $F(5, 525) = 9,63$ ;  $p < 0,001$ ]. Individuals posting six or more times per day ( $M = 110,40$ ;  $SD = 17,10$ ) had significantly higher ER scores than those who never posted ( $M = 95,00$ ;  $SD = 16,00$ ;  $p < 0,001$ ). There was no significant difference between the other groups.

#### Research Model

This study examines the mediating role of ER in the relationship between PSNU and TA. Given the nature of the measurement tools used, higher scores on PSNU and TA scales indicate greater levels of these traits, while higher scores on ER measures reflect enhanced ER functionality. This study addresses the following research questions:

A: To what extent does ER mediate the relationship between PSNU and TA?

A1: Is PSNU significantly positively associated with levels of TA?

A2: Are higher levels of ER skills significantly negatively associated with PSNU?

A3: Are higher levels of ER skills significantly negatively associated with levels of TA?

To examine whether ER plays a mediating role in the relationship between PSNU and TA, a direct path was first established between PSNU and TA (path c). Standardised direct and indirect path coefficients for the model are presented in Table 2.

**Table 2.** Standardised Direct and Indirect Path Coefficients for The Model

	Emotion regulation		Trait anxiety	
	$\beta$	SH	B	SH
Problematic social network use (A <sub>1</sub> )			0,49	0,04
R <sup>2</sup>			0,24	
Problematic social network use (A <sub>2</sub> )	-0,37	0,12		
R <sup>2</sup>	0,14			
Problematic social network use (A)			0,29	0,03
Emotion regulation (A <sub>3</sub> )			-0,55	0,01
R <sup>2</sup>			0,51	
Indirect Impact			-0,17 ( -0,21; -0,14)	

The results indicated a positive and statistically significant relationship between PSNU and TA, with PSNU positively predicting TA ( $\beta = 0,49$ ;  $p < 0,05$ ). This finding suggests that a one-unit increase in PSNU corresponds to a 0.49-unit increase in TA. Moreover, PSNU accounted for 24% of the variance in TA ( $R^2 = 0,24$ ), indicating a substantial

direct effect. Having established that higher PSNU levels predict increased TA, the next step was introducing ER as a mediator. Standardised path coefficients analysis results for problematic social network use on TA are presented in Table 3.

**Table 3.** Standardised Path Coefficients Analysis Results for Problematic Social Network Use on Trait Anxiety

Hypothesis relationships	Standard $\beta$	p- value	Accept- Rejected
A <sub>1</sub> = Problematic social network use → Trait anxiety	0,49	***	Accepted

Research questions A<sub>2</sub> and A<sub>3</sub> examined whether ER significantly predicts PSNU and TA, thereby supporting its role as a mediating variable. The results indicated that PSNU significantly and negatively predicted ER ( $\beta = -0,37$ ;  $p < 0,05$ ), providing an affirmative answer to research question A<sub>2</sub>. This suggests that a one-unit increase in PSNU leads to a 0.37-unit decrease in ER.

Similarly, ER significantly and negatively predicted TA ( $\beta = -0,55$ ,  $p < 0,05$ ), answering research question A<sub>3</sub>. This finding implies that a one-unit increase in ER results in a 0.55-unit decrease in TA. Standardised path coefficients for problematic social network use on ER and ER on TA are presented in Table 4.

**Table 4.** Standardised Path Coefficients for Problematic Social Network Use on Emotion Regulation and Emotion Regulation on Trait Anxiety

Hypothesis relationships	Standard $\beta$	p- value	Accept- Rejected
A <sub>2</sub> = Problematic social network use → Emotion regulation	-0,37	***	Accepted
A <sub>3</sub> = Emotion regulation → Trait anxiety	-0,55	***	Accepted

Since the relationships queried in A<sub>1</sub>, A<sub>2</sub>, and A<sub>3</sub> were statistically significant, ER's mediating role in the relationship between PSNU and TA (A) was further examined. To determine the significance of the indirect effect, a 5,000-bootstrap sample was generated with a 95% confidence interval (CI) using the Monte Carlo technique (Preacher & Hayes, 2008). The direct effect of PSNU on TA in Model A was 0,29, while the indirect effect of ER (the mediating variable) was -0,17. The analysis confirmed that the indirect effect coefficient was significant ( $\beta = -0,17$ ;  $p < 0,05$ ), as there was no zero within the 95% CI (-0,21; -0,14). This result validates A, demonstrating that ER mediates the relationship between PSNU and TA.

Moreover, adding ER as a mediator reduced the effect of PSNU on TA ( $\beta = 0,29 < \beta = 0,49$ ;  $p < 0,05$ ) while maintaining its significance. This finding confirms that ER is a "partial mediator" in this relationship. Before including ER in the model, PSNU explained 24% of the variance in TA ( $R^2 = 0,24$ ). After incorporating ER as a mediating variable, the variance explained increased to 51% ( $R^2 = 0,51$ ), indicating a substantial improvement in explanatory power. Finally, the goodness-of-fit indices for the final model were compared to acceptable thresholds, as presented in Table 5. The observed values confirmed that the theoretical model fit the data well.

**Table 5.** Goodness-of-Fit Indices for the Final Mediation Model

Index of Fit	Value Obtained	Comment	Reference Values	References
CMIN/sd	3,44	Good Fit	$\leq 8$	
CFI	0,85	AC	$\geq 0,85$	(Byrne, 2016)
GFI	0,81	AC	$\geq 0,80$	(Marsh et al.,1988)
AGFI	0,78	AC	$\geq 0,75$	(Chau, 2007)
IFI	0,85	AC	$\geq 0,85$	(Byrne, 2016)
RMR	0,11	AC	$\leq 0,15$	(Kenny & McCoach, 2003)
RMSEA	0,068	AC	$\leq 0,10$	(MacCallum, Browne & Sugawara, 1996)

Acceptable Fit: AC

## Discussion

The present study sought to elucidate the complex interplay between PSNU, TA, and ER. It confirmed a significant positive relationship between PSNU and higher levels of TA. Furthermore, higher proficiency in ER skills was significantly associated with lower levels of both PSNU and TA. These results prove that ER functions as a partial mediator in the relationship between PSNU and TA.

Individuals aged 18-22 years tend to exhibit higher levels of PSNU compared to other age groups. The developmental characteristics of young adulthood may make this group particularly vulnerable to psychosocial risks, increasing their susceptibility to excessive social network use. The elevated level of PSNU observed in the 18-22 age group, as compared to other age demographics, aligns with the findings of a preceding study (Andreassen, Torsheim, Brunborg, & Pallesen, 2015; Fokker et al.,

2021). Furthermore, the analyses revealed a robust correlation between daily social network utilisation duration and checking frequency with PSNU scores. These findings are consistent with extant literature demonstrating that prolonged social network engagement significantly contributes to the development and maintenance of PSNU. The research results indicated no significant gender differences in PSNU levels. The current results align with those reported in earlier studies (Kuss & Griffiths, 2017).

The analysis yielded a marked elevation in TA levels among frequent social network users compared to those who used the social networks less often. The study identified elevated levels of TA among young adults, reinforcing that TA may play a significant role in both the development and maintenance of PSNU. These findings underscore the significance of individual differences in social network usage patterns. This observation is consistent with prior empirical evidence (Orben & Przybylski, 2019).

The study found a positive relationship between PSNU and TA, indicating that higher PSNU levels are associated with increased TA ( $A_1$ ). The variance in TA explained by PSNU was 24%. This finding is consistent with previous research demonstrating a significant association between PSNU and TA (Wang, Yang, & Elhai, 2022).

PSNU was negatively associated with ER, suggesting that higher PSNU levels correspond to greater ER difficulties ( $A_2$ ). Given that PSNU can be categorized as an avoidance behavior, which is a defining feature of behavioral addictions, this finding is consistent with the maladaptive coping framework. Individuals with poor ER skills may turn to social networks as a means of avoidance, which sustains their problematic usage patterns. The relationship between PSNU and ER difficulties has been extensively documented in prior research (Bassi et al., 2023; Chirico et al., 2024; Ciudad-Fernández, Zarco-Alpuente, Escrivá-Martínez, Herrero & Baños, 2024; Fokker et al., 2021; Tamir & Gross, 2011; Wartberg, Thomasius & Paschke, 2021). Moreover, experimental research has suggested that enhancing ER skills may be beneficial in addressing PSNU-related behaviors (Drach, Orloff & Hormes, 2021). A negative association was observed between ER and TA ( $A_3$ ). This finding suggests that improving functional ER skills may reduce TA levels. These results align with previous research (Paucsik, Baeyens, Tessier & Shankland, 2024; Yan & Xiao, 2024), identifying ER difficulties as a key factor in sustaining TA.

The study confirmed that ER partially mediates the relationship between PSNU and TA (A). The indirect effect was statistically significant, indicating that the observed mediation was unlikely to be due to random variation. Furthermore, upon the inclusion of ER in the model, the direct effect of PSNU on TA decreased significantly, though it remained statistically significant. This finding substantiates the partial mediating role of ER. These results suggest that the effect of PSNU on TA is partially attributable to deficits in ER skills- a conclusion that aligns with previous research exploring similar pathways. For instance, Marino et al. (2023) identified emotion dysregulation as a key mediator between PSNU, attachment style, and social anxiety. Similarly, prior studies investigating the link between PSNU and ER difficulties (Andangsari et al., 2019; Hussain, Wegmann & Griffiths, 2021) have reported findings consistent with the present study.

The final structural equation model yielded robust fit indices, validating the hypothesised structural relationships. All goodness-of-fit indicators fell within the prescribed theoretical thresholds, substantiating the model's structural integrity. These empirical findings provide compelling evidence that the study's theoretical framework demonstrates strong concordance with the observed data, offering substantive insights into the mediating role of ER in the relationship between PSNU and TA.

## Conclusion

PSNU has been conceptualized as a maladaptive coping mechanism and a form of avoidance behavior. Individuals experiencing chronic anxiety may engage in PSNU as a means of alleviating negative emotions. The tendency to suppress distressing emotional experiences through PSNU

appears to be a significant factor in the persistence and escalation of problematic usage patterns. The present study demonstrated that ER difficulties may perpetuate the cycle of behavioral addiction, reinforcing PSNU and exacerbating emotional distress. Consistent with this perspective, the findings revealed that ER partially mediates the relationship between PSNU and TA, highlighting the interdependent nature of these psychological constructs.

Given the relationships between anxiety, worry, ER difficulties, and PSNU, these factors should be carefully considered in clinical assessments and intervention strategies.

The development of ER skills and anxiety management strategies can contribute to the reduction of symptoms associated with PSNU. Awareness of factors that precipitate and perpetuate PSNU can be increased, relapse prevention plans can be developed, and the development of active coping mechanisms can promote behaviour change and symptom reduction. Cognitive behavioural therapy can be adapted to address both TA and the cognitions that contribute to PSNU. Functional analysis of PSNU behaviour and cognitive restructuring of anxiety-related worry can be used. Dialectical Behaviour Therapy, with its ER modules, may effectively address ER difficulties contributing to PSNU.

However, it is important to acknowledge that this study employed a correlational research design, which does not establish causal relationships between PSNU, TA, and ER. Furthermore, PSNU is a complex and multidimensional process influenced by various individual factors. Individual differences may shape PSNU trajectories in unique ways. To gain a comprehensive understanding of these dynamics, longitudinal studies are recommended, as they would provide robust evidence regarding the long-term interactions between PSNU, anxiety, and ER.

## Declarations

### Ethical Approval

The Samsun University (Türkiye) Ethics Committee granted ethical approval (Decision no: 2024/48; Date: 14/06/2024).

### Consent to Participation

Informed consent was obtained from all participants.

### Consent to Publication

Not applicable.

### Availability of Data and Materials

Data may be made available upon reasonable request.

### Conflict of Interest

The author declares that there is no conflict of interest.

### Funding

Not applicable.

### Author Contributions

The author is responsible for the research. The author has read and approved the final version of the article.

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