

# Navigating the Virtual Classroom: The Mediating Role of Psychological Distress in the Association between Psychological Flexibility and Academic Burnout in Adolescent Students

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## ABSTRACT

**Objective:** This research aims to investigate the relationship between psychological flexibility and academic burnout, considering the mediating role of psychological distress.

**Methods and Materials:** The participants included 769 students (386 girls and 383 boys) who completed the Educational Burnout Questionnaire (MBI-SS), the Depression, Anxiety, and Stress Scale (DASS-21), and the Acceptance and Action Questionnaire 2nd Edition (AAQ-II).

**Findings:** The structural model showed that psychological flexibility is negatively correlated with academic burnout, while psychological distress is positively correlated with academic burnout. Additionally, the results indicated that psychological distress mediates the relationship between psychological flexibility and academic burnout.

**Conclusion:** Based on these findings, it is recommended that educational programs integrate psychological flexibility training into school curricula to help students manage stress and negative emotions related to their studies. Interventions targeting psychological distress as a key factor in academic burnout could also be beneficial.

**Keywords:** Psychological flexibility, Academic burnout, Psychological distress

## 1. Introduction

Along with the expansion of the epidemic period, many educational institutions implemented online activities and soon changed the teaching-learning process (R.Radha, 2020). Such changes related to social distancing during the epidemic can affect the quality of students' lives and even lead to worsening mental disorders (Cao et al., 2020; Hasan & Bao, 2020; Silva et al., 2021).

Serious concerns about children and adolescents' mental health have been widely reported during the quarantine related to the pandemic and the closing of schools (Golberstein et al., 2020; Wang et al., 2020). Dealing with the challenges of the education period can provide resources for students that put them under pressure and endanger their health (Klainin-Yobas et al., 2016). Most likely, one of these predictable factors in online classes is academic burnout and related factors. Researchers have extended the study of

burning out to almost any job, even non-working samples such as students (Gerber et al., 2015).

The concept of burnout beyond the occupational field and as psychological constructs in educational advancement situations has been the focus of many researchers and is known as educational burnout (Walburg, 2014). Studies have shown that burnout can even affect students due to the similarity between their tasks and those in different jobs. Academic burnout is usually defined as emotional fatigue (feeling tired due to academic demands), pessimism (negative and pessimistic attitude towards studying), and academic ineffectiveness (feeling of incompetence) (Schaufeli et al., 2002).

According to the evidence, people who suffer from academic burnout may experience symptoms such as a loss of interest in academic subjects, an ongoing inability to participate in classes, a sense of dissatisfaction with the activities that take place in classes, a perception that academic activities are meaningless, and the inability to succeed academically (Yang & Farn, 2005). In addition to this, kids are significantly more likely to stop attending school (Bask & Salmela-Aro, 2013).

Lee and Ashforth have addressed two important reasons for understanding the cause of burnout: First, identifying the causal sequences of burnout that can facilitate early detection of burnout, thus preventing and treating it in its early stages before it becomes a chronic problem. Second, it is vital to create a theoretical process model that includes both the antecedents and consequences of educational burnout (Lee & Ashforth, 1993). Considering this, in this research, two important and influential factors in academic burnout, i.e., psychological flexibility and psychological distress, are examined together with academic burnout in one model.

People's voluntary response styles to emotional situations are important internal factors that affect their emotional experiences and may have a direct impact on their choice of activities and environments, and ultimately affect their social interactions and emotional health (Betts et al., 2009; Yap et al., 2007). One of the important factors in increasing mental health, creating a healthy lifestyle and less psychopathology is greater psychological flexibility (Tangney et al., 2004). This construct is defined as the ability to communicate with oneself and all current experiences (thoughts, feelings, and behaviors), as well as the ability to function in accordance with personal values even under adverse internal and external experiences (Bond et al., 2011). The premise of this

research is its impact and relationship with academic burnout, which has not been investigated in previous studies.

The results of longitudinal studies have consistently provided evidence supporting the association between academic burnout experienced during high school and emotional difficulties, specifically symptoms of depression and anxiety (Kim et al., 2015; Salmela-Aro et al., 2009). The experience of prolonged and excessive academic stress has been found to result in a range of behavioral and psychological issues, such as academic burnout (Jung et al., 2015). Psychological distress is a term used to describe the general state of psychopathology of a person with a combination of symptoms of depression, anxiety, and perceived stress (Ohayashi & Yamada, 2012). Compared to young and older people, teenagers have more negative, mixed, frequent and intense emotional experiences, mainly because they are in a period that is associated with physical, psychological and social changes and can create intense emotional experiences (Silk et al., 2003) and this increases the importance of examining negative psychological issues such as distress in this group.

Previous studies have not extensively explored the relationship between psychological flexibility and academic burnout. Nevertheless, the investigation of the correlation between variables that are closely associated with psychological flexibility, such as resilience, has been observed (Smith & Emerson, 2021). Smith and Emerson (Smith & Emerson, 2021) have examined the inquiry into the role of resilience in the correlation between academic burnout and psychological distress. In their study, Cheng et al (Cheng et al., 2020) investigated the moderating effect of resilience on the association between academic burnout and depression. Prior studies have examined the association between academic burnout and psychological distress (Chen et al., 2022; secer, 2015; Yusoff et al., 2021). Prior research has investigated the association between psychological flexibility and psychological distress (Azadeh et al., 2015; Lappalainen et al., 2021; Livheim et al., 2015; Masuda & Tully, 2011; Puolakanaho et al., 2023; Wang et al., 2023).

This research focuses on investigating a model within the context of online classes, with the aim of enhancing the examination of psychological variables in students and the educational system. The objective is to assess students' performance, individual growth, commitment, and resilience. Additionally, the study aims to highlight the significance of the variable of academic burnout in determining students' success or failure (Fowler, 2015).

However, it is worth noting that when considering these variables within the framework of traditional classroom settings and predominantly in societies beyond the adolescent population, which has been identified by scholars as having a higher prevalence of psychological disorders (McLaughlin et al., 2011; Riediger & Klipker, 2014), there is a growing belief among certain researchers that the prevailing sentiments towards education during this stage tend to be predominantly negative (Moeller et al., 2020). Hence, the present study has examined the correlation between academic burnout and psychological flexibility, while considering the mediating role of psychological distress, within a model specific to the adolescent population.

The research hypotheses are as follows:

A: There is a relationship between psychological flexibility and academic burnout.

B: There is a relationship between psychological flexibility and psychological distress.

C: Psychological distress plays a mediating role between psychological flexibility and academic burnout.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The participants in this study included a total of 769 students, consisting of 386 girls and 383 boys. These students were selected from the entire population of high school students who were enrolled in online classes during the 2019-2020 academic year in Iran. The sampling method employed was a multi-stage cluster approach, whereby several cities and schools were initially chosen. Out of the total participants, 273 individuals (35.5%) were in their first year of secondary school, 258 individuals (33.6%) were in their second year, and 238 individuals (30.9%) were in their third year. On average, these students achieved a grade point average of 18.32 (The grade point average (GPA) of students in Iran is out of 20). Furthermore, their average age was determined to be 14.19 years. To collect data for the study, online questionnaires were designed and distributed to the participants through Iran Education and Training's official virtual education network. The current research was conducted based on the rules of the Declaration of Helsinki (Holm, 2013). Necessary permissions to distribute the questionnaire were obtained from education and schools. The participants were assured of the confidentiality of their information and answers. The (informed) consent form was provided to the students along with the questionnaires. Also,

Parents' informed consent form was given to the students along with the questionnaires so that they could answer the questionnaires after their parents' approval and permission. The collected data was subsequently analyzed using Amos24 and SPSS24 software packages.

### 2.2. Measures

Depression, Anxiety, and Stress Scale (DASS-21): The participants answered the subscales of anxiety, stress, and depression from the DASS-21 scale. The reliability and validity of DASS-21 have been estimated and confirmed in prior research (Antony et al., 1998; Lovibond & Lovibond, 1995) and in Iranian population (Aazami et al., 2017; Kakemam et al., 2022). Participants expressed their degree of agreement on a four-point Likert scale from 0 (never applies to me) to 3 (extremely applies to me). In this research, Cronbach's alpha values for total score, depression, anxiety, and stress were 0.93, 0.87, 0.82, and 0.82, respectively, and the scale and sub-scales showed good reliability.

Acceptance and Practice Questionnaire, 2nd Edition (AAQ-II): The participants answered the questions of the AAQ-II questionnaire. The reliability and validity for this scale have been estimated and confirmed in previous studies (Bond et al., 2011; Pennato et al., 2013) and in Iranian population (Imani, 2016). Participants' answers are placed on a 7-item Likert scale from 1 (not true at all) to 7 (always true). Of course, to measure psychological flexibility, the scoring of this scale has been done in reverse in this research. In this research, the alpha coefficient for this questionnaire was 0.88, and it showed good reliability.

Maslach Burnout Inventory-Student Survey (MBI-SS): The participants responded to the emotional exhaustion, cynicism, and academic ineffectiveness subscales of the MBI-SS scale. The validity and reliability of the scale have been confirmed in past studies (Ilic et al., 2017; Schaufeli et al., 2002) and in Iranian society (Jenatferidooni et al., 2018). Participants indicated their level of agreement on a four-point Likert scale from 0 (never) to 6 (always). In this study, the alpha coefficients for the total score, emotional exhaustion, pessimism, and academic inefficiency were .82, .90, .84, and .88, respectively, and the scale and subscales showed good reliability.

### 2.3. Data Analysis

First, confirmatory factor analysis (CFA) was utilized to assess the measurement model. Then structural equation

modeling was utilized to analyze the possible routes connecting academic burnout, psychological distress, and psychological flexibility. Amos24 was used to construct both measurement and structural models. Model fit was assessed using the comparative fit index (CFI), root mean square error of approximation (RMSEA), and Tucker-Lewis index (TLI). Suggested cut-off values for indices of fit were as follows: GFI (Goodness of fit index), CFI, AGFI (Adjusted goodness of fit index), and TLI equal to or greater than .90; RMSEA less than 0.08 (Arbuckle, 2006); and CMIN/df in the range of 2–5 (Hooper et al., 2008).

### 3. Findings and Results

Table 1 shows the correlation matrix, mean, standard deviation, and skewness of the research variables. As can be

seen in Table 1, there is a significant positive relationship between academic burnout and its dimensions, psychological distress and its dimensions, and a significant negative relationship with psychological flexibility. Also, the relationship between psychological distress and its dimensions with psychological flexibility is positive and significant. ( $p < 0.01$ ).

There is a significant relationship between academic burnout ( $r = 0.14$ ,  $\text{sig} < 0.01$ ); psychological flexibility ( $r = -0.12$ ,  $\text{sig} < 0.01$ ); psychological distress ( $r = 0.11$ ,  $\text{sig} < 0.01$ ) and age. Also There is a significant relationship between academic burnout ( $r = -0.12$ ,  $\text{sig} < 0.01$ ); psychological flexibility ( $r = 0.15$ ,  $\text{sig} < 0.01$ ); psychological distress ( $r = -0.10$ ,  $\text{sig} < 0.01$ ) and average.

**Table 1**

*Means, Standard Deviations, Skewness, Kurtosis and Correlation of Variables Matrix*

Variables	1	2	3	4	5	6	7	8	9
1.Academic Burnout	1								
2.Exhau.E	.83**	1							
3.Cyniasm	.85**	.76**	1						
4.Inefficacy	.66**	.21**	.27**	1					
5.Distress	.56**	.52**	.51**	.29**	1				
6.Anxiety	.46**	.44**	.41**	.24**	.90**	1			
7.Depression	.55**	.48**	.49**	.31**	.93**	.75**	1		
8.Stress	.55**	.52**	.52**	.25**	.93**	.79**	.81**	1	
9.Flexibility	-.55**	-.51**	-.53**	-.26**	-.79**	-.71**	-.75**	-.73**	1
Mean	26.16	8.83	6.61	10.71	24.79	6.71	8.34	9.73	39.15
Standard deviation	17.80	7.59	7.10	8.18	24.43	7.82	9.65	8.92	9.96
Skewness	.51	7.14	.91	.82	1.34	1.62	1.43	.97	-1.15
Kurtosis	-.53	-.31	-.36	.42	1.59	2.75	1.46	.47	.63

Note: \*\*  $p < .01$

The results of the CFA for the instruments (academic burnout, psychological distress, and psychological flexibility) had a suitable and sufficient fit. Goodness of fit indexes (GFIs and CFIs  $> 0.95$ ) and RMSEAs  $< 0.05$ ) and the standard factor loadings for academic burnout were between 0.5 and 0.86, for psychological distress between 0.42 and 0.81, and for psychological flexibility between 0.62 and 0.81.

Figure 1 shows the standard coefficients of the structural model of the relationships between academic burnout, psychological distress, and psychological flexibility. The absolute values of all the standard values of the factor

loadings are above 0.32. The standardized coefficient ( $\beta$ ) of psychological flexibility on academic burnout has been obtained as -0.32, which shows that the greater the amount of flexibility in students, the lower the level of burnout. The standardized coefficient of psychological flexibility on psychological distress was found to be -0.88, which shows that increasing flexibility in students reduces distress, and it seems that flexibility has a reducing effect on distress. The standardized coefficient of distress on burnout is 0.36, which indicates the increasing effect of distress on academic burnout.

**Figure 1**

*Structural Model and Pathway Coefficients*

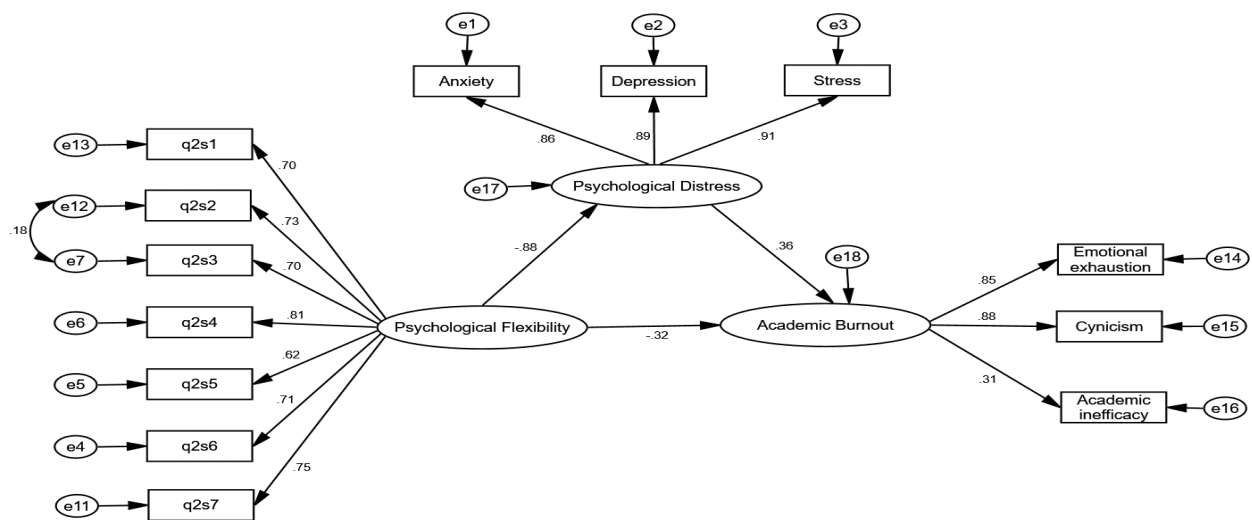


Table 2 shows all the fit indices of the structural model of the relationship between psychological flexibility, academic burnout, and psychological distress. The  $\chi^2/df$  index is acceptable with a value of 2.93, considering an acceptable value between 3 and 5. TLI, IFI, AGFI, GFI, and CFI indices are equal to 0.95, and consider the acceptable value is above 0.9, the values of these indices are acceptable. RMSEA as a significant fit index was 0.05, which is considered acceptable for values below 0.08.

The dimension and sub-dimensions of “from initiation to outcome” (attention, infatuation, longing, love, increased interaction, conflict, successful resolution of

conflict/termination at this stage, complete love in case of prior success) were placed in the “processes” category. The dimensions and sub-dimensions of “positive outcomes” (goal orientation, movement toward change, increased self-confidence, enhanced social skills, emotional growth) and “negative outcomes” (shift in priorities, mood swings, academic decline, psychological harm following romantic failure, irrational decision-making) were classified under “outcomes.” These placements are summarized in Table 2, and Figure 1 visually presents the explanatory matrix of adolescent dimensions.

**Table 2**

*Fit Indices of Structure Model*

Models	df	X <sup>2</sup>	$\chi^2/df$	TLI	IFI	AGFI	GFI	CFI	RMSEA	SRMR
Primary model	62	198.50	3.20	.97	.97	.94	.96	.96	.05	.03
Revised model	61	179.00	2.93	.97	.98	.94	.98	.96	.05	.03

Note X<sup>2</sup>= chi-square; df = degrees of freedom; CFI = comparative fit index; RMSEA = root mean square error of approximation; AGFI= Adjusted goodness of fit index; GFI= Goodness of fit index; TLI= Tucker-Lewis index; SRMR= Standardized Root Mean Square Residual; IFI= Incremental Fit Index.

Table 3 shows the standardized (B) and non-standardized (b) path coefficients. The standardized coefficients of psychological flexibility on psychological distress and academic burnout are negative. In addition, psychological distress has a positive effect on academic burnout ( $p < 0.01$ ).

All factor loadings are also significant ( $p < 0.01$ ). Also, the mediating effect of psychological distress between academic exhaustion and flexibility is confirmed and significant ( $p < 0.01$ ) and its b value is -0.51 and its B value is -0.28.

**Table 3**

*Pathway Coefficients and Factor Loadings*

Pathway	b	S.E.	B	C.R.	p
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Psychological Distress	<-	Psychological Flexibility	-4.43	.22	-.88	-20.15	***
Academic Burnout	<-	Psychological Distress	.34	.08	.35	3.91	***
Academic Burnout	<-	Psychological Flexibility	-1.56	.45	-.32	-3.46	***
Anxiety	<-	Psychological Distress	1.00		.85		
Depression	<-	Psychological Distress	1.28	.03	.88	32.67	***
Stress	<-	Psychological Distress	1.21	.03	.91	34.07	***
q2s6	<-	Psychological Flexibility	1.00		.71		
q2s5	<-	Psychological Flexibility	.75	.04	.61	16.21	***
q2s4	<-	Psychological Flexibility	1.09	.05	.80	21.10	***
q2s3	<-	Psychological Flexibility	.99	.05	.69	18.32	***
q2s7	<-	Psychological Flexibility	1.05	.05	.75	19.73	***
q2s1	<-	Psychological Flexibility	1.03	.05	.70	18.40	***
q2s2	<-	Psychological Flexibility	1.05	.05	.73	19.23	***
Emotional exhaustion	<-	Academic Burnout	1.00		.85		
Cynicism	<-	Academic Burnout	.96	.04	.88	22.96	***
Academic inefficacy	<-	Academic Burnout	.39	.04	.31	8.22	***

Note. \*\*\*  $p < 0.001$

#### 4. Discussion and Conclusion

The aim of this study was to examine the relationship between psychological flexibility and psychological distress with academic burnout among secondary students in online classes. Based on the findings, a significant negative association was observed between psychological flexibility and academic burnout, which aligns with previous research investigating the link between job burnout and psychological flexibility (Gamble, 2019; Martínez-Rubio et al., 2021; Puolakanaho et al., 2020; Sarabia-Cobo et al., 2021).

Considering the importance and complex role of psychological flexibility in health, it is assumed that psychological flexibility is important for both girls and boys and protects them from mental health problems (Azevedo & Matos, 2015). In contrast, when individuals exhibit common psychological inflexibility, they tend to engage in attempts to control their thoughts and emotions, which can lead to many forms of psychopathology (Kashdan & Rottenberg, 2010). It seems that considering the reduction role ( $\beta = -0.32$ ) of psychological flexibility on psychological issues such as academic burnout, their negative relationship can be justified and predicted.

According to the results of Figure 1 and Table 3, there is a significant negative relationship between psychological flexibility and psychological distress along with its dimensions, which is consistent with the results of previous studies (Azadeh et al., 2015; Lappalainen et al., 2021; Livheim et al., 2015; Masuda & Tully, 2011; Puolakanaho et al., 2023; Wang et al., 2023). Also, in previous research in the field of Corona and in different populations, the effect of resilience on distress and their negative relationship have been investigated (Akbari et al., 2021; Huang et al., 2021;

McCracken et al., 2021; Wąsowicz et al., 2021). Compared to people with high psychological flexibility, people with low psychological flexibility usually report high levels of psychological distress (17), have less stability and tolerance to pain (Zettle et al., 2005) and use maladaptive coping strategies to deal with stress (such as denial (Karekla & Panayiotou, 2011)). It seems that the type of students' answers is effective in dealing with negative psychological issues such as distress in online classes, and these factors have a lot to do with a person's level of flexibility.

Based on the results of Figure 1 and Table 3, there is a significant positive relationship between psychological distress and academic burnout, which is in line with the results of previous research (Chen et al., 2022; Koçak & Secer, 2018; seçer, 2015; Yusoff et al., 2021). The close relationship between depression (one of the dimensions of distress) and burnout has been clearly confirmed (Salmela-Aro et al., 2009). On the other hand, according to Maslach's opinion about the excessive involvement of people with stressful job aspects leading to burnout (Maslach, 2003), as well as the opinion of Caballero and his colleagues in this regard, long-term stress in an organizational complex leads to burnout. (Caballero Domínguez & Bresó, 2015), it is possible to understand the close relationship between academic burnout and stress, which can be seen in the results of previous studies (Huang & Lin, 2010; Jung et al., 2015; Shariffard et al., 2020). Also, the positive relationship between anxiety and academic burnout has been confirmed in Fernandez-Castillo's research (Fernández-Castillo, 2021). Despite all these interpretations, the positive relationship between distress and academic burnout was expected, which can be seen in the results of the present study.

The mediating role of psychological distress between academic burnout and flexibility is confirmed and significant ( $b = -.515$ ;  $p = .002$ ). This model has not been investigated in previous research, but Smith and Emerson have put the dimensions of academic burnout between resilience and psychological distress in a similar model (Smith & Emerson, 2021). The effect of distress in the current research model on the dimensions of academic burnout is similar to the Smith and Emerson model, but regarding the effect of psychological flexibility on the dimensions of burnout, compared to the effect of resilience in the Smith and Emerson model, its value is in two dimensions of emotional exhaustion. And pessimism is more, and in the case of academic inefficiency, it is less. And this shows that psychological flexibility is more effective in the first two dimensions, and resilience is more effective in the dimension of academic inefficiency.

It seems that psychological flexibility, either directly or through psychological distress, can have a reduction role on academic burnout in high school students, and even in past studies, this variable was considered as one of the basic factors for improving mental health and the ability of a person to cope with psychological distress and protection against psychological pathology (Hayes et al., 2006; Kashdan & Rottenberg, 2010), and it can act as a protective factor for mental and physical health (Grégoire et al., 2020).

The findings of this research showed that increasing students' psychological flexibility is a reduction factor on psychological distress ( $\beta = -0.88$ ) and academic burnout ( $\beta = -0.32$ ). With the reduction of psychological distress and its positive effect on academic burnout, it seems that by planning on the factors related to this variable, there is hope to reduce the amount of academic burnout. It is hoped that the results of this research will help in identifying the causal sequence of burnout and creating a theoretical process model to prevent and treat it in the early stages before it becomes a chronic problem.

## 5. Limitations & Suggestions

This study includes data collected through self-reported measurements in an online survey, and the possibility of not understanding the concepts and content of the questionnaire questions, the possibility of participant bias, and the degree of trust in the participant's answers in answering the questionnaire questions are among its limitations.

Based on these findings, it is recommended that educational programs integrate psychological flexibility

training into school curricula to help students manage stress and negative emotions related to their studies. Additionally, interventions targeting psychological distress as a key factor in academic burnout could be beneficial. Early identification of students at risk for academic burnout and early intervention using psychological flexibility strategies could prevent the escalation of burnout. Future studies should address these limitations by using larger and more diverse samples, longitudinal designs, and mixed methods for data collection. Furthermore, research into the underlying mechanisms of this relationship, the effectiveness of interventions, and moderating factors such as social support, learning environment, and academic demands can provide a deeper understanding of the role of psychological flexibility in the prevention and treatment of academic burnout in adolescents.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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## Authors' Contributions

All authors equally contributed to this article.

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