Adaptation of the Children and Adolescents Psychological Distress Scale to Azerbaijani: Exploring its Relationship with Psychological Distress, Wellbeing, and Life Satisfaction

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ABSTRACT

Aim. In recent years, the concept of psychological distress among children and adolescents has emerged as a novel focal point in mental health research, garnering significant scholarly attention. This paper presents an investigation into the Children and Adolescents Psychological Distress Scale (CAPDS), including its adaptation to the Azerbaijani language.

Methods. Data was collected from 2217 adolescents for the adaptation study. During the adaptation process, confirmatory factor analysis, item response theory, network analysis, reliability coefficients, and predictive validity were examined.

Results. We validated the 10-item version of the CAPDS through confirmatory factor analysis. Item Response Analysis further demonstrated the robust discriminative capabilities of all scale items. Various reliability coefficients affirmed the commendable internal consistency of the CAPDS. The study also encompassed correlation and network analyses, shedding light on the intricate associations between CAPDS and key variables, including depression, anxiety, stress, mental well-being, and life satisfaction. Finally, an examination was conducted to assess whether the CAPDS could predict psychological distress, mental well-being, life satisfaction, and certain demographic variables.

Conclusion. This comprehensive inquiry into psychological distress among children and adolescents elucidates its profound individual and societal implications, providing valuable insights into a phenomenon that has become increasingly relevant in the contemporary social and educational landscape.

Keywords. Child and adolescents' distress, wellbeing, life satisfaction, depression, anxiety, stress, scale adaptation

Introduction

A crisis can be defined as a persistent psychological state resulting from dissatisfaction with one's inner self and the environment, which can profoundly impact an individual's core values and needs (Kuehn, 2022). This state is characterized by intense emotional turmoil and exerts a dominant influence on an individual's inner life. Crisis situations experienced by individuals frequently necessitate a reconfiguration of their personality (Lee & Crunk, 2020). Individuals encounter various psychological crises over the course of their lives, including the Covid-19 pandemic, which affected nearly every individual worldwide. The pandemic is associated with traumatic experiences, loss, and separation (Lee et al., 2020a), resulting in significant mental, social, economic, and health-related impacts. Therefore, the Covid-19 pandemic can be considered a global psychological crisis of contemporary times (Samuel et al., 2021).

As per the psychological literature, a crisis situation can escalate into a dangerous condition when individuals are unable to escape from it, confront it, or accept it. The novelty of the problem and the presence of uncertainties about the future have intensified people's psychological stress and anxiety, fostering fear and distress. It is widely recognized that uncertainty significantly contributes to elevated levels of fear and anxiety (Sharif-Esfahani, 2022). Concurrently, the new living environment created by the pandemic and the restrictions imposed in response have led to adverse outcomes. Experts have predominantly observed negative psychological responses to quarantine (Kira et al., 2021).

Observations suggest that the loss of freedom, the fear of infection, and isolation can create an environment conducive to post-traumatic stress, insomnia, and anger. Such symptoms can persist among patients and healthcare workers even after the quarantine has ended, spanning months and even years (González-Pando et al., 2022). Experiencing a life crisis implies recognizing a profound conflict within one's life, manifesting in an intensified form, and subsequently necessitates the mobilisation of all physical, mental, intellectual, and spiritual resources to overcome it. This, in turn, lays the foundation for a new phase in human development. In this context, it is worth considering the ideas of Vygotsky, who suggests that every negative symptom of a crisis conceals a positive element, which signifies the transition to a new, higher form (Hyman, 2012). Failure to overcome a psychological crisis can lead to the emergence of additional psychological issues. It is evident that a global disaster such as a pandemic can induce psychological distress in adolescents.

Individual differences play a significant role in the protracted process of brain development, characterised by continuous changes. While most adolescents gradually adapt to these changes, it is noteworthy that the crises and struggles they encounter regarding independence typically have a transient nature (Verhofstadt-Deneve, 1985). There is an established psychological and psychiatric treatment protocol designed to address disorders related to cognition, emotion, and behaviour that may impede

normal functioning in teenagers. Adolescents may encounter challenges in their family and peer relationships, school activities, as well as disruptions in their sleep and eating patterns. This developmental period is also associated with substantial psychological disturbances, which necessitate investigation to identify their underlying causes.

Psychological distress refers to a condition of emotional discomfort marked by symptoms commonly associated with depression, such as feelings of sadness, diminished interest, and hopelessness, as well as anxiety-related symptoms, including tension and excessive worry (Drapeau et al., 2012). However, scientific literature suggests that the term "psychological distress" is frequently used to describe a broad range of undifferentiated symptoms, including depression, anxiety, personality traits, functional impairments, and behavioural issues. Psychological distress denotes a condition of emotional suffering characterized by depressive symptoms such as sadness, loss of interest, and pessimism, alongside anxiety-related symptoms, including feelings of tension, irritability, and apprehension (Mirowsky & Ross, 2002; Satici & Deniz, 2020). It is often used to describe undifferentiated combinations of symptoms ranging from personality features and functional deficits to behavioural problems. Additionally, psychological distress can be a diagnostic criterion for certain psychiatric disorders that interfere with daily life, including conditions such as major depressive disorder, generalized anxiety disorder, obsessive-compulsive disorder, and post-traumatic stress disorder (Mahmoud et al., 2012). Moreover, experiencing psychological distress can be associated with a range of physical and psychological symptoms that are often associated with normal mood swings. It is also worth noting that psychological distress can signal the onset of various clinical disorders. In a study on psychological distress, the term was described as a state characterised by feelings of sadness, anger, anxiety, and problems with interpersonal relationships (Chalfant et al., 1990).

The COVID-19 pandemic, which entered Azerbaijan in March 2020, spread rapidly, increasing the number of infections and deaths and causing both personal and social trauma. Within the framework of the study, the literature was reviewed, and there was an increase in people's psychological distress related to the COVID-19 pandemic. In some studies, the existence of COVID-19 phobia (coronaphobia) was emphasised. Additionally, some studies showed that people's levels of psychological well-being decreased during the COVID-19 pandemic (López et al., 2020; Alfawaz et al., 2021). The significance of this study lies in how people experience levels of psychological distress and well-being during the COVID-19 pandemic and whether they develop COVID-19 phobia as a result. As COVID-19 has recently become a part of our lives, it has been the subject of many studies with its various effects. This study is expected to make a valuable contribution to the existing literature and support the advancement of future research.

The COVID-19 pandemic rapidly spread in Azerbaijan in March 2020, resulting in increased infections, deaths, and personal and social trauma. A literature review conducted in this study revealed that people experienced heightened psychological distress

during the pandemic, and some individuals developed coronaphobia (Lee et al., 2020b). Other studies showed that people's levels of psychological well-being decreased during the pandemic (López et al., 2020; Alfawaz et al., 2021; Satici et al., 2020).

Our study is important because it examines how people experience psychological distress and well-being during the pandemic and whether they develop coronaphobia. Since COVID-19 is a new phenomenon, numerous studies have examined its various effects, and this research aims to contribute to the literature and facilitate future investigations.

Psychological distress, including anxiety, fear, and depression, can affect individuals at various points in time, with epidemic outbreaks, such as COVID-19, having a profound impact on mental health (Torales et al., 2020). While pandemic diseases primarily present with physical symptoms, they also pose a significant risk to people's mental health. Previous studies on virus-related epidemic diseases, such as SARS, have shown that they can lead to various psychological problems, including stress, depressed mood, anxiety, and distress (Wu et al., 2005). It is, therefore, expected that people will experience distress during times of crises. Accordingly, we aimed to adapt the Children and Adolescent Psychological Distress Scale-CAPDS-10 for use in Azerbaijan.

The aim of the research

The adaptation of the Children and Adolescents Psychological Distress Scale (CAPDS-10) to Azerbaijan is of considerable importance for several reasons. Young people today are experiencing elevated stress levels due to a range of factors, including academic pressures, test anxiety, and family expectations. The global COVID-19 pandemic, which began in 2020, has further exacerbated stress among children and adolescents by disrupting their education and social interactions. As such, assessing the psychological distress levels of children and adolescents in the post-pandemic era is crucial. To measure these distress levels, the CAPDS-10 was developed as a psychometric tool (De Stefano et al., 2022). This study aims to evaluate the reliability coefficients and psychometric validity of the Azerbaijani version of the CAPDS-10.

Methods

Participants and procedure

The study involved 2,217 adolescents aged 11 to 18 years (M = 13.14, SD = 1.70), with 1,302 (58.7%) females and 915 (41.3%) males participating. Based on the participants' educational levels and socio-economic status, the profile of our study participants is as follows: In terms of the mothers' educational backgrounds,

1426 participants (47.3%) have completed high school, 675 participants (22.4%) have a university degree, and 116 participants (3.9%) have a master's degree. Regarding the fathers' educational levels, 1419 participants (47.3%) have completed high school, 706 participants (23.5%) hold a university degree, and 92 participants (3.1%) have a master's degree. In terms of socio-economic status, 1275 participants (42.5%) fall into the middle category, 119 participants (4%) have a lower socio-economic status, and the rest are classified as having a higher socio-economic status. Furthermore, more than half of the participants (63%) report having good relationships with their peers, while only 5.2% report having poor relationships. Additionally, all participants are currently enrolled in grades 5 through to 11.

Measures

The CAPDS-10 was translated into Azerbaijani and subjected to a back-translation process, with the final version being approved after a thorough discussion. Participants were initially requested to complete a researcher-designed questionnaire aimed at gathering demographic information, including family composition and interpersonal relationships. This article also examined the validity and reliability of the scale based on item response theory criteria. Several measurement tools were used in this study.

The Depression, Anxiety, and Stress Scale—21 items (DASS-21), developed by Peter Lovibond and Shanks Lovibond (1995), comprises 21 items divided into three subscales: depression (e.g., "I couldn't seem to experience any positive feeling at all"), anxiety (e.g., "I experienced trembling"), and stress (e.g., "I felt that I was rather touchy"). The scale evaluates negative emotional symptoms using a 4-point Likert scale (0 = did not apply to me at all, 3 = applied to me very much or most of the time). In a clinical sample, the internal consistency reliability coefficients, as measured by Cronbach's alpha, were $\alpha = 0.87$ for the depression subscale, $\alpha = 0.85$ for the anxiety subscale, and $\alpha = 0.81$ for the stress subscale.

The Satisfaction with Life Scale (SWLS), developed by Ed Diener, Robert Emmons, Randy Larsen, and Sharon Griffin (1985), is a brief 5-item tool designed to measure global cognitive assessments of life satisfaction. The SWLS evaluates life satisfaction using a 6-point Likert scale, where 0 represents "extremely satisfied" and 5 indicates "extremely dissatisfied." Reliability analysis of the SWLS demonstrated an internal consistency coefficient of Cronbach's alpha = 0.74.

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS), jointly created by Warwick and Edinburgh Universities in 2006, comprises 15 positively worded items aimed at assessing a population's mental wellbeing (e.g., "I have been feeling relaxed"). The WEMWBS utilises a 4-point Likert scale (1 = "I totally disagree," 4 = "I totally agree"). A Cronbach's alpha score of 0.89 (student sample) and 0.91 (population sample) suggests some item redundancy in the scale.

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS), developed collaboratively by Warwick and Edinburgh Universities in 2006, consists of 15 positively worded items designed to assess mental well-being in a population (e.g., "I have been feeling relaxed"). The scale employs a 4-point Likert scale (1 = "I totally disagree," 4 = "I totally agree"). Reliability analysis revealed Cronbach's alpha scores of 0.89 for a student sample and 0.91 for a general population sample, indicating a degree of item redundancy within the scale.

Data analysis

In the data analysis phase, we utilized a range of statistical techniques to address the key objectives of our study. To establish the structural validity of the Children and Adolescents Psychological Distress Scale-10 (CAPDS-10) among Azerbaijani adolescents, a Confirmatory Factor Analysis (CFA) was conducted. Additionally, Item Response Theory (IRT) was applied to further examine the scale's properties. To assess the criterion-related validity of the adapted scale, we explored its relationships with established measures of depression, anxiety, stress, overall well-being, and life satisfaction. Reliability analyses were performed using both Cronbach's alpha and McDonald's omega coefficients. Moreover, network analysis was employed to explore the interrelationships between the variables. Lastly, to evaluate the predictive validity of the adapted scale, regression analyses were conducted to determine whether factors such as gender, age, number of children, psychological distress, well-being, and life satisfaction could predict the scale scores.

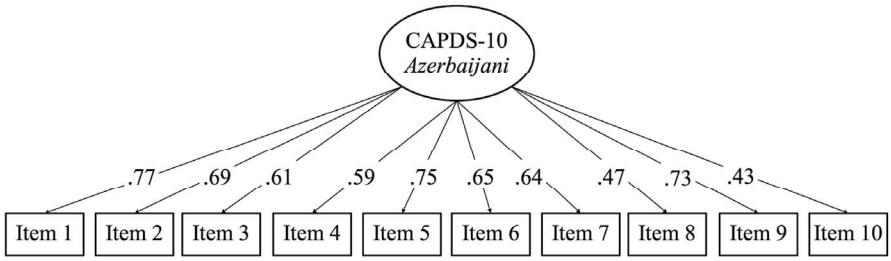
Results

The Confirmatory Factor Analysis (CFA), performed using the Maximum Likelihood method, aimed to confirm a unidimensional structure consistent with the original 10-item scale. Several fit indices were employed to evaluate the model's adequacy, including the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI), and Adjusted Goodness of Fit Index (AGFI). The ratio of Chi-Square (χ^2) to degrees of freedom was also considered. The CFA results indicated that the factor loadings for the items ranged from .430 to .771, with all loadings being statistically significant. The evaluation of the goodness-of-fit indices for the Children and Adolescents Psychological Distress Scale-10 (CAPDS-10) revealed an acceptable fit for the two-dimensional model ($\chi^2(35, N=2217) = 418.84$; CFI = .951; GFI = .961; IFI = .951; NFI = .947; SRMR = .0371; RMSEA = .070).

These results suggest that the scale's structure aligns well with the data, demonstrating acceptable fit indices.

Figure 1

Standardized factor loading of the CAPDS-10 Azerbaijani version



Source. Own research.

Upon the establishment of the scale's structure, Item Response Theory (IRT) analysis was carried out. As presented in Table 1, the discrimination parameter values (a) spanned from 1.31 to 2.79. In accordance with the guidelines proposed by Colin Baker (2001), a total of 14 items were categorised as possessing a very high level of discrimination, while one item remained classified as high. These findings signify that the CAPDS-10 exhibited the utmost discriminatory capacity within the scope of this analysis.

Table 1

IRT results for the CAPDS-10

Item	a coefficient	Z	p > |z|
Item 1	2.79	22.74	.001
Item 2	2.37	21.38	.001
Item 3	1.91	20.24	.001
Item 4	1.61	20.90	.001
Item 5	2.69	21.76	.001
Item 6	1.84	22.70	.001
Item 7	1.77	22.44	.001
Item 8	1.38	17.54	.001
Item 9	2.46	22.28	.001
Item 10	1.31	15.32	.001

Source. Own research.

The internal consistency reliability of the scale was assessed using three distinct coefficients: Cronbach's alpha, McDonald's omega, and Guttmann's lambda. The Cronbach's alpha coefficient was found to be .872, indicating a strong level of reliability. Similarly, McDonald's omega also yielded a value of .872, further supporting the scale's robust reliability. Guttmann's lambda coefficient returned a value of .867, confirming that the items on the scale effectively measure the same underlying construct. Collectively, these findings provide strong evidence for the reliability of the CAPDS-10.

To assess the criterion-related validity of the Azerbaijani version of the CAPDS-10, the study utilized three established measures: the Depression, Anxiety, and Stress Scale, the Mental Wellbeing Scale, and the Satisfaction with Life Scale (see Table 2). All correlations were found to be statistically significant ($p < .001$). As anticipated, the CAPDS-10 showed positive correlations with depression ($r = .729$), anxiety ($r = .701$), and stress ($r = .736$). In contrast, these factors were negatively correlated with mental well-being ($r = -.510$) and life satisfaction ($r = -.627$).

Table 2

Correlations of the Azerbaijani CAPDS-10 and the Other Scales with Confidence Intervals

Well-being measures	**Azerbaijani CAPDS-10**	
	R	95% C. I.
Depression	.729***	.703 – .755
Anxiety	.701***	.674 – .728
Stress	.736***	.713 – .756
Mental wellbeing	-.510***	-.547 – -.475
Life satisfaction	-.627***	-.657 – -.596

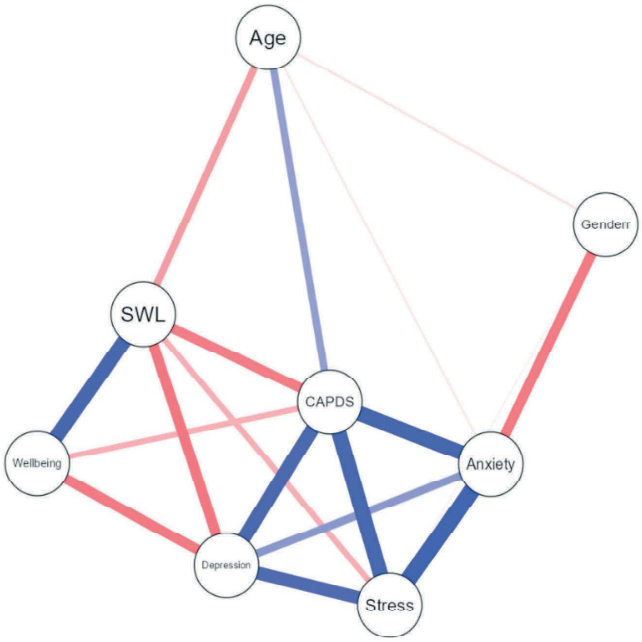
Note. $N = 2217$; *** $p < .001$

Source. Own research.

The network analysis findings pertaining to the interrelationships between the Azerbaijani CAPDS-10 and other variables are visually depicted in Figure 1. It is evident that CAPDS-10 exhibited robust connections with depression, anxiety, stress, and mental wellbeing.

Figure 2

Network analysis for the CAPDS-10



Source. Own research.

Table 3, as presented below, provides an overview of the regression analysis outcomes concerning the predictive impact of age, gender, class, child number, and psychological distress, mental wellbeing, and life satisfaction on Azerbaijani—CAPDS-10.

Table 3

Regression Results of Predictive Validity

Variables	Azerbaijani-CAPDS-10		
	β	*T*	*p*
Age	.001	.036	.972
Gender	.001	-.039	.969
Class	.104	3.11	.002
Child number	-.007	-.589	.556
Psychological distress	.665	41.75	< .001
Mental wellbeing	-.075	-5.17	< .001
Life satisfaction	-.133	-.812	< .001

Source. Own research.

The regression findings reveal that Azerbaijani-CAPDS-10 exhibited a positive prediction from psychological distress (β = .665) and class (β = .104). In contrast, Azerbaijani-CAPDS-10 demonstrated negative predictions associated with mental wellbeing (β = -.075), life satisfaction (β = -.133). Age (β = .001), gender (β = .001), and the children number (β = -.007) did not significantly predict CAPDS-10.

Discussion

The Child and Adolescents Psychological Distress Scale-10 (CAPDS-10) is a widely utilized tool that has been adapted into multiple languages, with its validity and reliability having been previously evaluated. This study sought to examine the psychometric properties of the Azerbaijani version of the CAPDS-10 specifically for children and adolescents in school settings. The research sought to investigate the impact of the COVID-19 pandemic on the mental health of children and adolescents in Azerbaijan. The findings indicate that during the pandemic, children and adolescents experienced at least one symptom of anxiety, depression, or stress. These results underscore the adverse effects of COVID-19 on mental health, consistent with recent studies that have reported symptoms of anxiety, depression, and stress among the general population in China because of the COVID-19 pandemic (Jiang et al., 2020; Qiu et al., 2020; Wang et al., 2020).

Based on the conducted Confirmatory Factor Analysis (CFA), the CAPDS-10 demonstrated acceptable fit indices. The CFA results revealed that all fit indices met the acceptable criteria, and the standardised factor loadings were significant. Thus, the unidimensional structure of the Azerbaijani CAPDS-10 was confirmed. The one-dimensional 10-item CAPDS-10 scale was applied to Azerbaijani children and adolescents, and the results were consistent with the original version.

In Item Response Theory (IRT) analysis, the reliability of all items was assessed, and their fit to the model was evaluated. This study represents the first instance of IRT analysis for this research, and the consistency of its results has been established. All values for the Azerbaijani CAPDS-10 exceeded 1.0. According to Baker (2001), a value greater than 1.0 is indicative of high discrimination. Therefore, the IRT results suggest that the items of the Azerbaijani CAPDS-10 are effective in discriminating between better and poorer performance and exhibit adequate item difficulty.

The internal consistency of the CAPDS-10 items was found to be acceptable, with a Cronbach's alpha coefficient of 0.70. To assess the internal consistency reliability of items, various techniques were employed in this research. In this regard, Cronbach's alpha, McDonald's omega, Gutmann's lambda, and reliability of CAPDS-10 items were thoroughly examined. In the original development study of the CAPDS-10 (De Stefano et al., 2022), the Cronbach's alpha was reported

as 0.84. However, it is generally accepted that reliability above 0.70 is adequate (Nunnally, 1978). In this study, the values of Cronbach's alpha (0.70), McDonald's omega (0.84), and Gutmann's lambda (0.84) fall within acceptable limits.

The analysis of criterion-related validity revealed a strong positive correlation between the CAPDS-10 and measures of depression, anxiety, and stress. Additionally, it was observed that the CAPDS-10 had a negative association with life satisfaction. Moreover, the results of the CAPDS-10 indicated a positive relationship between psychological distress, depression, anxiety, stress, and life satisfaction. The continuous exposure to news concerning the global death toll and infection rates due to the pandemic has led children and adolescents to experience fear, anxiety, and depression. Concerns about the risk of infection have contributed to widespread fear among the general population (Lin, 2020).

In the examination of the criterion-related validity of the Azerbaijani CAPDS-10, a positive relationship was observed between psychological distress and symptoms of anxiety, stress, and depression. Conversely, a negative relationship was identified between psychological distress, well-being, and life satisfaction (Aliyev et al., 2024). These findings align with existing literature and provide support for the criterion-related validity of the CAPDS-10 (De Stefano et al., 2022). Network analysis was conducted to explore these relationships, and the results corroborated the findings obtained from criterion-related validity.

Regarding the predictive validity of the CAPDS-10 in Azerbaijan, it was determined that factors such as gender, age, and the number of children are not associated with increased psychological distress. However, a higher grade level was predictive of elevated levels of psychological distress. Furthermore, the analysis of predictive validity indicated that anxiety, stress, and depression are factors contributing to increased psychological distress. Therefore, there is a proportional relationship between psychological distress and symptoms of anxiety, stress, and depression. In other words, as anxiety, stress, and depression levels increase in children and adolescents, their psychological distress also increases. The relevant literature supports this relationship, showing a direct correlation between psychological distress and symptoms of anxiety, stress, and depression, as well as an inverse relationship with life satisfaction. In essence, when psychological distress decreases, well-being and life satisfaction tend to increase (Lahav, 2020).

Research has consistently shown that the COVID-19 pandemic has had a direct impact on the mental health of children and adolescents, leading to elevated levels of psychological distress (Fiorillo & Gorwood, 2020). The pandemic has been linked to increased fear, anxiety, and depression, and has emerged as a significant and positive predictor of psychological distress. These findings align with those of several previous studies (Bilsky et al., 2020; Brown et al., 2018; Lee & Crunk, 2020; Lee et al., 2020a; Samuel et al., 2021; Saravanan et al., 2020; Satici et al., 2020).

Limitations

While we have taken diligent efforts to make our study as comprehensive as possible, it is essential to recognise certain limitations. Firstly, our study primarily aimed to establish correlations between variables and adapt the scale, which prevented us from establishing cause-and-effect relationships. Additionally, the age range of our participants was restricted, representing another constraint. A further limitation pertains to the geographical distribution of our respondents, with a majority hailing from the capital city. Future studies should aim to include participants from various regions for more comprehensive insights. Furthermore, the online nature of the research limited our ability to assess the participants' understanding of the survey questions.

Conclusion

In this study, we successfully adapted the Children and Adolescents Psychological Distress Scale to the Azerbaijani adolescent population. Our analyses have demonstrated that the CAPDS-10 is a valid and reliable measurement tool for use in Azerbaijan. In conclusion, it is imperative to conduct additional longitudinal and experimental studies to gain a deeper understanding of the psychological distress concept and to further examine its associations with potential risk factors.

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