



## Psychometric properties of the Indonesian version of the Depression Anxiety Stress Scale: Factor structure, reliability, gender, and age measurement invariance

Darmawan Muttaqin,<sup>1\*</sup> Serena Ripa<sup>2</sup>

<sup>1</sup>Faculty of Psychology, Universitas Surabaya, Surabaya – Indonesia, <sup>2</sup>Centro la Famiglia Onlus, Naples – Italy

**Abstract:** Measurement instruments that have satisfactory psychometric properties are needed to improve mental health research and services, especially in the effort to measure, identify, and monitor the psychological problems experienced by individuals. The purpose of this study is to examine the psychometric properties of the Indonesian version of the Depression Anxiety Stress Scale (DASS). The study involved 1,922 participants from Surabaya aged between 16 and 26. The data were obtained using the convenience sampling method. Testing of the factor structure, reliability, and measurement invariance of the Indonesian DASS was performed using a confirmatory factor, composite reliability, and multi-group analysis. It was found that a bifactor model consisting of specific (depression, anxiety, and stress) and general (psychological distress) factors was the best structure for the DASS. Furthermore, the model also showed satisfactory composite reliability and measurement invariance across genders. The results indicated that the Indonesian version of the DASS was a valid and reliable instrument for measuring and comparing depression, anxiety, stress, and psychological distress between genders in the Indonesian sample.

**Keywords:** DASS; factor structure; measurement invariance; psychological distress; reliability

**Abstrak:** Alat ukur yang memiliki properti psikometri yang memuaskan diperlukan untuk meningkatkan penelitian dan pelayanan kesehatan mental. Khususnya sebagai upaya untuk mengukur, mengidentifikasi, dan memantau permasalahan psikologis yang dialami oleh individu. Tujuan penelitian ini adalah menguji properti psikometri dari Depression Anxiety Stress Scale (DASS) versi Indonesia. Penelitian ini melibatkan 1922 partisipan berusia 16-26 tahun yang sedang berada di Surabaya. Pengambilan data dilakukan dengan metode convenience sampling. Pengujian struktur faktor, reliabilitas, dan invariansi pengukuran dari DASS versi Indonesia dilakukan dengan menggunakan analisis konfirmatori faktor, reliabilitas komposit, dan analisis multi-kelompok. Penelitian ini menemukan bahwa model bifaktor yang terdiri dari faktor spesifik (depresi, kecemasan, dan stres) dan faktor umum (distres psikologis) merupakan struktur faktor terbaik dari DASS versi Indonesia. Selain itu, DASS versi Indonesia memiliki reliabilitas komposit yang memuaskan dan terdapat invariansi pengukuran gender. Temuan ini mengindikasikan bahwa DASS versi Indonesia merupakan alat ukur yang valid dan reliabel untuk mengukur dan membandingkan depresi, kecemasan, stres, dan distres psikologis antar gender pada sampel Indonesia.

**Kata Kunci:** DASS; distres psikologis; invariansi pengukuran; reliabilitas; struktur faktor

\*Corresponding Author: Darmawan Muttaqin ([darmawan.muttaqin@staff.ubaya.ac.id](mailto:darmawan.muttaqin@staff.ubaya.ac.id)), Faculty of Psychology, Universitas Surabaya, Jl. Raya Kalirungkut, Surabaya 60293 – Indonesia.

## Introduction

Depression, anxiety, and stress have become a major concern for mental health practitioners and researchers worldwide. However, they are psychological problems often handled by clinical psychologists (Borkovec, Echemendia, Ragusea, & Ruiz, 2006) and not all sufferers receive adequate treatment (Downs, Boucher, Campbell, & Dasse, 2013; Kataoka, Zhang, & Wells, 2002). Providing and using measurement instruments with satisfactory psychometric properties have been a major challenge for mental health practitioners and researchers. Therefore, in order to improve research and services in the mental health field, a measurement instrument is needed for measuring, identifying, and monitoring psychological problems experienced by individuals (Henkel, 2003; Liptzin, 2009; Ronk, Korman, Hooke, & Page, 2013).

The Depression Anxiety Stress Scale (DASS) is a tool for measuring depression, anxiety, and stress (Lovibond & Lovibond, 1995). Information research into its psychometric properties was first conducted using exploratory and confirmatory factor analysis methods, and it was found that the DASS had a three-factor structure, namely depression, anxiety, and stress. Furthermore, a relatively moderate positive correlation was found between the subscales for the three factors. The results of convergent validity testing by correlating the anxiety subscale with the Beck Anxiety Inventory produced a correlation coefficient of 0.81, while the correlation between the depression subscale and the Beck Depression Inventory produced a correlation coefficient of 0.74. Research conducted by Lovibond and Lovibond (1995) found that the DASS had good psychometric properties for measuring depression, anxiety, and stress. Furthermore,

Lovibond and Lovibond explain the differences in the measurement objectives of each DASS subscale. First, the depression subscale measures situations in which individuals experience loss of self-esteem and feel unable to achieve their expected life goals. Second, the anxiety subscale measures the fear response when individuals face situations that give rise to anxiety. Finally, the stress subscale measures feelings of annoyance or frustration when individuals experience continuous tension beyond their tolerance.

Between 2000 and 2020, the DASS was tested for its psychometric properties in various countries around the world. For example, in Europe, research was conducted in Italy (Bottesi et al., 2015; Severino & Haynes, 2010); Sweden (Alfonsson, Wallin & Maathz, 2017); Spain (Bados, Solanas, & Andrés, 2005); England (Crawford & Henry, 2003; Henry & Crawford, 2005; Page, Hooke, & Horison, 2007); and Portugal (Apóstolo, Mendes, & Azeredo, 2006; Xavier et al., 2017). In the Americas, studies on the psychometric properties of DASS included participants from the United States (Daza, Novy, Stanley, & Averill, 2002; Kia-Keating et al., 2018; Moore, Dowdy, & Furlong, 2017) and from Brazil (Patias, Machado, Bandeira, & Deli'Aglia, 2016; Vignola & Tucci, 2014). Furthermore, other studies have examined these properties in South Africa (Coker, Coker, & Sanni, 2018; Dreyer, Henn, & Hill, 2019); Australia (Ng et al., 2007; Randall, Thomas, Whiting, & McGrath, 2017; Tully, Zajac, & Venning, 2009); and New Zealand (Medvedev, Krägeloh, Titkova, & Siegert, 2018). In Asia, several versions of the DASS have been examined, including in Turkish (Hekimoglu, Altun, Kaya, Bayram, & Bilgel, 2012; Yıldırım, Boysan, & Kefeli, 2018); Arabic (Ali et al., 2017); Nepalese (Tonsing, 2014); Persian (Asghari, Saed, & Dibajnia, 2008);

Korean (Lee et al., 2019); Vietnamese (Le et al., 2017; Tran et al., 2013); and Malaysian (Musa et al., 2007) versions, and their psychometric properties tested.

In general, the DASS has been used to measure depression, anxiety, and stress in both clinical samples (Almhdawi et al., 2020; Joplin & Petar Vrklevski, 2017; Wang, You, Lin, Xu, & Leung, 2017) and the general population (Conley, Shapiro, Huguenel, & Kirsch, 2020; Negi, Khanna, & Aggarwal, 2019; Schnapp, O'Neal, & Vaughn, 2020). This is supported by the psychometric property information of DASS used in clinical samples (Le et al., 2017; Musa et al., 2007; Yohannes, Dryden, & Hanania, 2019) and the general population (Medvedev et al., 2018; Severino & Haynes, 2010; Sinclair et al., 2012). Regarding the clinical samples, psychometric property testing of the DASS has been made by studying psychiatric patients (Apóstolo et al., 2006; Ng et al., 2007; Vignola & Tucci, 2014); patients with depression (Clara, Cox, & Enns, 2001; Lee et al., 2019); and in terms of mood (Page et al., 2007; Yildirim et al., 2018), anxiety and mental disorders (Hekimoglu et al., 2012); and brain injury (Randall et al., 2017). Participants such as adolescents (Mellor et al., 2015; Moore et al., 2017); college students (Lee, 2019; Norton, 2007; Osman et al., 2012; Patias et al., 2016); and workers (Dreyer et al., 2019) are often included in studies that examine the psychometric properties of the DASS.

The majority of the studies examining the factor structure of the DASS have found that the three-factor correlation model consisting of depression, anxiety, and stress is the best factor structure for it (Asghari et al., 2008; Bados et al., 2005; Clara et al., 2001; Crawford & Henry, 2003; Daza et al., 2002; Dreyer et al., 2019; Lee et al.,

2019; Mellor et al., 2015; Musa et al., 2007; Norton, 2007; Page et al., 2007; Xavier et al., 2017; Yildirim et al., 2018). This is consistent with the conceptualization of the DASS to measure these three factors (Lovibond & Lovibond, 1995). However, several studies have suggested that the DASS could be used to measure psychological distress. This is in line with recent findings which show that a bifactor model consisting of a general factor (psychological distress) and three specific factors (depression, anxiety, and stress) is the best structure for the DASS (Henry & Crawford, 2005; Le et al., 2017; Moore et al., 2017; Randall et al., 2017). This is supported by other studies which have found that such a model has better accuracy than the three-factor correlation (Alfonsson et al., 2017; Bottesi et al., 2015; Kia-Keating et al., 2018; Osman et al., 2012). However, these studies found that both models had a satisfactory model fit when constructed to test the factor structure of the DASS.

The DASS psychometric property information reported in several previous studies is not only related to the factor structure but also to the reliability. The studies have reported that it has satisfactory internal consistency (0.74 to 0.92) with regard to the depression, anxiety, and stress subscales (Bados et al., 2005; Coker et al., 2018; Musa et al., 2007; Norton, 2007; Tonsing, 2014) as well as for the entire scale measuring psychological distress (Bottesi et al., 2015; Osman et al., 2012; Tran et al., 2013). Apart from the factor structure and reliability, previous research also found that there was national DASS measurement invariance. Furthermore, such invariance was found in a research on Australia, Chile, China, and Malaysia (Mellor et al., 2015); on six Asian countries, Malaysia, Indonesia, Singapore, Sri Lanka, Taiwan, Thailand (Oei, Sawang, Goh, &

Mukhtar, 2013), and on eight other countries, namely Brazil, Canada, Hong Kong, Romania, Taiwan, Turkey, UAE, and the United States (Zanon et al., 2020). The findings regarding the national measurement invariance of the DASS indicate that it does not have any potential bias and could be used to compare depression, anxiety, stress, and psychological distress across nations.

The DASS has in fact been adapted for Indonesian use by Muttaqin, Yunanto, Fitria, Ramadhanty, and Lempang (2020). However, information regarding the psychometric properties of the Indonesian version is still limited to the factor structure. Muttaqin et al. (2020) examined this structure by compiling a three-factor correlation model, finding that the model had a satisfactory fit, with GFI, CFI and RMSEA coefficients of 0.978, 0.988, and 0.053 respectively. However, the model was prepared using the item parceling method, which could cause difficulties in detecting any inaccuracy in the measurement model (Bandalos, 2002; Little, Cunningham, Shahar, & Widaman, 2002). Therefore, the drawbacks of using this method encouraged us to re-examine the factor structure of the DASS without using parceling items.

In order to complement the limited psychometric property information on the Indonesian version of the DASS, researchers have been encouraged to conduct tests on its reliability and measurement invariance. Measurement invariance testing has been performed to check the potential for bias between groups due to the inaccuracy of the items used in measuring a construct in a particular group (Chen, 2008; Cheung & Rensvold, 2002). Potential bias, such as gender or age differences, could also threaten the accuracy of the DASS. The measurement invariance testing has been based on configural

invariance (the number of factors and item composition being equivalent between groups); metric invariance (the factor load on each item being equivalent between groups); and scalar invariance (the factor load and intercept on each item being equivalent between groups). In addition, testing has been based on covariance invariance (the covariance among latent factors being equivalent between groups) (Byrne & van de Vijver, 2010; van de Schoot, Lugtig, & Hox, 2012; Vandenberg & Lance, 2000).

In general, this study aims to examine the psychometric properties of the Indonesian DASS, with three objectives. First, it aims to examine its factor structure; second, to test its reliability; and finally, to examine the invariance of the gender and age measurements.

## Method

### *Participants*

Using a non-probabilistic convenience sample, 1922 participants were recruited through an online survey from Surabaya city. They were aged between 16 and 26 ( $M = 20.835$ ,  $SD = 2.284$ ), and comprised 948 (49.3%) adolescents aged from 16 to 20 ( $M = 18.936$ ,  $SD = 0.870$ ) and 974 (50.7%) adults aged between 21 and 26 ( $M = 22.684$ ,  $SD = 1.622$ ). From the gender perspective, the participants consisted of 953 (49.6%) males and 969 (50.4%) females. They were 36 (1.9%) diploma program students, 1262 (65.7%) undergraduates, 153 (8.0%) master's program students, and 408 (21.2%) individuals who were working, with the remaining 63 (3.3%) providing other answers. The majority of the participants (77.9%) had grown up in big cities, while the rest lived in small cities (19.3%) and villages (2.8%).

### Measures

The Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995) was used to measure depression (seven items, such as “I felt I wasn’t worth much as a person”); anxiety (seven items, such as “I felt I was close to panic”); and stress (seven items, for example, “I found it difficult to relax”). The DASS used four response options ranging from 0 (never) to 3 (often). The DASS used in this study was the Indonesian version adapted by Muttaqin et al. (2020).

### Procedures

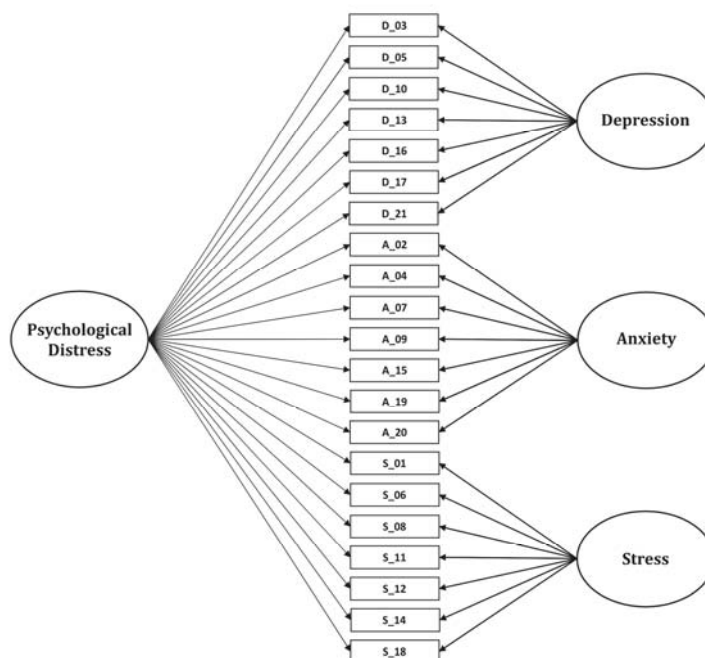
Data were collected from 2018/09/02 to 2020/04/04. The participants were contacted directly or through an advertising campaign on social media (WhatsApp, LINE, and Instagram).

Before they became involved in the study, they were asked to read and complete the research informed consent form stating their willingness or unwillingness to be involved in the research. Initially, 1934 individuals agreed to participate; however, 12 incomplete questionnaires were deleted, so a definitive sample of 1922 participants were obtained.

Confirmatory factor analysis through the IBM SPSS AMOS 21 program with maximum likelihood estimation (Arbuckle, 2012) was used to evaluate the factor structure of the Indonesian DASS version. Based on results from previous research, the version was evaluated for its factor structure using two models, namely three-factor correlation arranged by including 21 items

Figure 1

*Conceptual bifactor model of the Indonesian DASS version*



consisting of seven depression, anxiety, and stress items. The bifactors were arranged as in the three-factor correlation model, but with an additional common factor, namely psychological distress (Figure 1). Second, model fit indexes, namely the Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA), were used to evaluate the measurement model of the Indonesian DASS. Such a model is stated to have conformity with the data if its GFI and CFI coefficients are greater than or equal to 0.90 (Bentler & Bonett, 1980; Cole, 1987; Kline, 2014) and the RMSEA coefficient is less than 0.08 (Kline, 2014; Schreiber, Nora, Stage, Barlow, & King, 2006; van de Schoot et al., 2012). Composite reliability calculations were also used to evaluate the measurement model. Furthermore, when the composite reliability coefficient is greater than 0.70, it can be stated that the model has satisfactory internal consistency (Hair, Hult, Ringle, & Sarstedt, 2014). Finally, a multi-group analysis was made to evaluate the measurement invariance of gender and age. The measurement model can be considered to have measurement invariance in gender and age when there is a difference in

the CFI and RMSEA coefficients of less than - 0.010 and 0.015 respectively (Chen, 2007).

## Results

The results of the confirmatory factor analysis (Table 1) show that the measurement model of the Indonesian DASS version, which was compiled from the three-factor correlation and bifactor models, had a satisfactory fit model. This is because the two models had GFI and CFI coefficients greater than 0.90, and a RMSEA coefficient of less than 0.08. However, the bifactor model was a better fit than the three-factor one, and also when it was tested on males, females, adolescents, and adults.

The correlation between the subscales (Table 2) is highly positive. Furthermore, the depression subscale has a positive relationship with the anxiety subscale ( $r = 0.782$ ,  $p < 0.001$ ) and the stress subscale ( $r = 0.791$ ,  $p < 0.001$ ). In addition, the anxiety subscale had a positive relationship with the stress subscale ( $r = 0.981$ ,  $p < 0.001$ ). The Indonesian DASS has a satisfactory composite reliability of 0.872, 0.806, 0.816, and 0.917 for the depression, anxiety, stress subscales, and psychological distress subscale respectively.

**Table 1**  
*Model Fit Indices of the Indonesian DASS Version*

	Model fit indices			
	$\chi^2/df$	GFI	CFI	RMSEA
Three-factor correlation model				
Total sample (n = 1922)	8.800	0.918	0.917	0.064
Males (n = 953)	4.790	0.913	0.918	0.063
Females (n = 969)	5.628	0.899	0.903	0.069
Adolescents (n = 948)	5.145	0.907	0.901	0.066
Adults (n = 974)	4.802	0.913	0.921	0.063
Bifactor model				
Total sample (n = 1922)	5.567	0.954	0.956	0.049
Males (n = 953)	3.370	0.938	0.947	0.054
Females (n = 969)	3.473	0.944	0.953	0.051
Adolescents (n = 948)	3.448	0.944	0.947	0.051
Adults (n = 974)	3.324	0.947	0.956	0.049

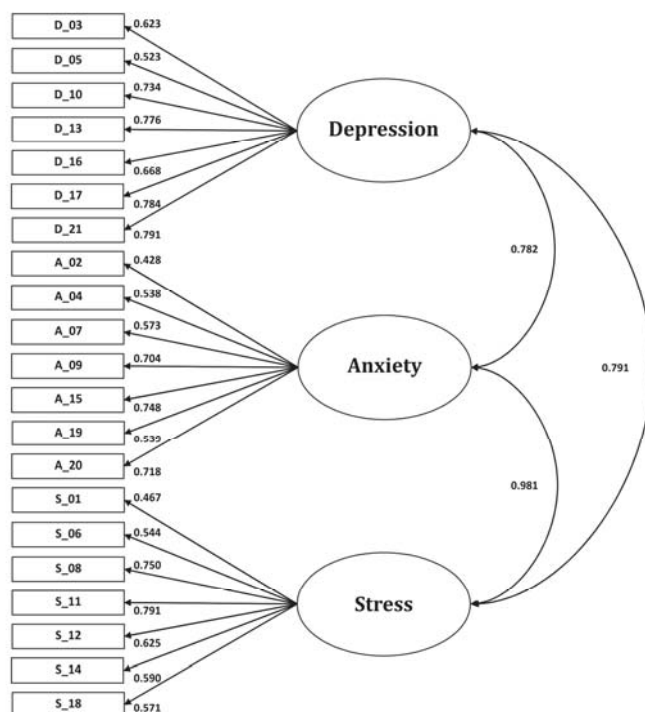


**Table 2**  
Correlation and Composite Reliability of the Indonesian DASS

	Depression	Anxiety	Stress
Depression	(0.872)		
Anxiety	0.782*	(0.806)	
Stress	0.791*	0.981*	(0.816)

\*p < 0.001

**Figure 2**  
Factor Structure of the Three-factor Correlation Model of the Indonesian DASS



The results of the multi-group analysis show that the three-factor correlation and bifactor models of the Indonesian DASS version have gender measurement invariance (see Table 3)). This is because both models fulfil the CFI coefficient difference of less than -0.010 and the RMSEA coefficient difference of less than 0.015, based on metric, scalar, and covariance invariance. However, both models only fulfilled the metric

invariance in the age measurement invariance test. This was because the CFI coefficient difference was greater than -0.010 and the RMSEA coefficient difference was less than 0.015 on the scalar invariance and covariance. However, the bifactor model had a better fit in terms of configural, metric, and scalar invariances than the three-factor correlation.

**Table 3***Gender and Age Measurement Invariance of the Indonesian DASS*

	Model fit indices				Model comparison	
	$\chi^2$	df	CFI	RMSEA	$\Delta$ CFI	$\Delta$ RMSEA
<b>Three-factor correlation model</b>						
Gender measurement invariance						
1. Configural invariance	1937.715	382	0.910	0.046		
2. Metric invariance (compared to 1)	1957.060	393	0.910	0.045	0.000	-0.001
3. Scalar invariance (compared to 2)	2056.172	414	0.906	0.045	-0.004	0.000
4. Covariance invariance (compared to 2)	2068.246	417	0.905	0.045	-0.005	0.000
Age measurement invariance						
1. Configural invariance	1850.117	372	0.912	0.045		
2. Metric invariance (compared to 1)	1906.055	393	0.910	0.045	-0.002	0.000
3. Scalar invariance (compared to 2)	2267.035	414	0.889	0.048	-0.021	0.003
4. Covariance invariance (compared to 2)	2307.787	417	0.887	0.049	-0.023	0.004
<b>Bifactor model</b>						
Gender measurement invariance						
1. Configural invariance	1204.699	336	0.950	0.037		
2. Metric invariance (compared to 1)	1264.977	378	0.949	0.035	-0.001	-0.002
3. Scalar invariance (compared to 2)	1365.411	399	0.945	0.036	-0.004	0.001
Age measurement invariance						
1. Configural invariance	1137.702	336	0.952	0.035		
2. Metric invariance (compared to 1)	1270.222	378	0.947	0.035	-0.005	0.000
3. Scalar invariance (compared to 2)	1627.106	399	0.927	0.040	-0.020	0.005

## Discussion

The purpose of this study was to examine the psychometric properties of the Indonesian DASS version in the form of factor structure, reliability, gender, and age invariance measurements. It was found that the three-factor correlation and bifactor models had a satisfactory fit when used to test the DASS factor structure. The bifactor model was the better of the two because it had better accuracy when tested on the total sample and a separate sample of men, women, adolescents, and adults. It was also found that the Indonesian DASS had satisfactory internal consistency and an invariance in gender measurements. However, the study did not find any invariance in age measurements based on scalar invariance and covariance.

The results related to the bifactor model showed it was a better fit than the three-factor correlation one, although both models were found

to have a satisfactory model fit. These findings are similar to those of previous studies (Alfonsson et al., 2017; Bottesi et al., 2015; Kia-Keating et al., 2018; Osman et al., 2012). However, this is in contrast to the majority of previous studies, which found the best factor structure for the DASS in the form of a three-factor correlation model (Asghari et al., 2008; Bados et al., 2005; Clara et al., 2001; Crawford & Henry, 2003; Daza et al., 2002; Dreyer et al., 2019; Lee et al., 2019; Mellor et al., 2015; Musa et al., 2007; Norton, 2007; Page et al., 2007; Xavier et al., 2017; Yildirim et al., 2018). This is not surprising as these studies did not include the bifactor model as an alternative for the DASS. Moreover, when some researchers attempted to compare the models, they found that only the bifactor model had a satisfactory fit, while the three-factor correlation model did not fit the data (Henry & Crawford, 2005; Le et al., 2017; Moore et al., 2017; Randall et al., 2017).



The findings showing the bifactor model to be the best structure for the Indonesian DASS version indicate that the DASS could be used to measure depression, anxiety, stress, and psychological distress. This is because the bifactor model has been considered to be an alternative to the hierarchical model as it can test specific and general factors at the same time (Chen, Hayes, Carver, Laurenceau, & Zhang, 2012; Zhang, Sun, Cao, & Drasgow, 2020). Furthermore, Reise (2012) states that bifactor model testing could be used to identify the ability of items to measure general and specific factors that are in accordance with their construct (Reise, 2012). Therefore, the Indonesian DASS could be an alternative measuring instrument for psychological distress, which is considered a common characteristic of psychopathological symptoms and mood disorders (Bottesi et al., 2015).

This study found a high positive correlation between the Indonesian DASS subscales. This is similar to previous studies, which also found that there was a correlation coefficient greater than 0.70 between the subscales (Apóstolo et al., 2006; Crawford & Henry, 2003; Daza et al., 2002; Oei et al., 2013; Sinclair et al., 2012; Tonsing, 2014). Furthermore, other studies have also found relatively moderate correlation coefficients between the DASS subscales (Asghari et al., 2008; Bados et al., 2005; Lee, 2019; Musa et al., 2007). The existence of a positive correlation between the subscales is in accordance with the conceptualization of the DASS, based on the fact that depression, anxiety, and stress are positively related to each other (Lovibond & Lovibond, 1995).

It was found that the Indonesian DASS version had satisfactory internal consistency. This is

because each subscale had composite reliability greater than 0.80. Moreover, a composite reliability coefficient greater than 0.90 was found for the total score of the DASS which measures psychological distress. A measurement model could be considered to have good internal consistency if it fulfills the requirement of a minimum composite reliability coefficient of greater than 0.70 (Hair et al., 2014). This is similar to previous studies, which have also found that the DASS has a reliability coefficient greater than 0.80 when used for measuring depression, anxiety, and stress (Apóstolo et al., 2006; Asghari et al., 2008; Crawford & Henry, 2003; Daza et al., 2002; Lee, 2019; Patias et al., 2016; Sinclair et al., 2012; Vignola & Tucci, 2014; Xavier et al., 2017; Yıldırım et al., 2018), and a reliability coefficient greater than 0.90 when used for measuring psychological distress (Henry & Crawford, 2005; Kia-Keating et al., 2018; Le et al., 2017; Page et al., 2007; Randall et al., 2017; Tully et al., 2009).

No studies have previously examined the invariance of gender and age measurement in the DASS. However, this study found an invariance of gender measurements based on configuration, metric, and scalar invariance in the Indonesian DASS. This indicates that there is no difference in the number of factors and the composition of items between the male and female samples (Chen, 2008). Furthermore, this study also found that the Indonesian DASS version only fulfilled metric invariance in the age measurement invariance test. The absence of scalar invariance in this test indicates the differences in response between the adolescent and adult samples. This difference could be due to the fact that the age groups had different understandings of the same item (Blankson & McArdle, 2015; Horn &

Mcardle, 1992; Millsap & Kwok, 2004; Millsap & Olivera-Aguilar, 2012). Furthermore, it also indicates that the Indonesian DASS could only be used to compare depression, anxiety, stress, and psychological distress between genders.

In general, this study contributes to the psychometric properties of the Indonesian DASS version. Therefore, it could be used precisely to measure depression, anxiety, stress, and psychological distress in the Indonesian sample, especially in the general population. However, there are several limitations to this study. First, it did not test the convergent validity of the Indonesian DASS. Information on such validity could be used to evaluate the fit of the DASS measurement results. This is because through convergent validity testing the validated results of a measuring instrument would be tested for correlation with other instruments that have the same construct (Bandalos, 2018; Carlson & Herdman, 2012; Furr, 2011). Second, this study only involved participants from the general population. Therefore, the fit of this version for depression, anxiety, stress, and psychological distress in a clinical sample is still unclear.

In order to improve the fit of the measurement results from the Indonesian DASS, convergent validity needs to be tested. This could be done by using other measuring instruments that have the same construct. For example, the Beck Depression Inventory-II (Beck et al., 1996), the Patient Health Questionnaire-9 (Kroenke, Spitzer, & Williams, 2001), or the Center for Epidemiologic Studies Depression Scale-Revised (Radloff, 1977) could be used to measure depression. In addition, the Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988),

Generalized Anxiety Disorder (Spitzer, Kroenke, Williams, & Löwe, 2006), the Mood and Anxiety Symptom Questionnaire-90 (Watson et al., 1995), or the State-Trait Anxiety Inventory Y-II (Spielberger, Gorsuch, & Lushene, 1970) could also be used to measure anxiety. Finally, the Perceived Stress Questionnaire (Fliege et al., 2005), Perceived Stress Scale (Cohen & Herbert, 1996), or Adolescent Stress Questionnaire (Byrne, Davenport, & Mazanov, 2007) could be used to measure stress. Moreover, further tests need to be conducted on the psychometric properties of the Indonesian DASS using clinical samples.

## Conclusion

Based on the results, it is concluded that the Indonesian DASS is a valid and reliable measuring instrument for depression, anxiety, stress, and psychological distress in the Indonesian sample, especially in the general population. This is because it has the best factor structure in the form of three specific factors (depression, anxiety, and stress) and a general factor (psychological distress), and it has very satisfactory composite reliability. Furthermore, it could be used to compare scores for depression, anxiety, stress, and psychological distress in terms of gender.

## Conflicts of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Funding

The author(s) received no financial support for the research of this article.[]

## References

- Alfonsson, S., Wallin, E., & Maathz, P. (2017). Factor structure and validity of the Depression, Anxiety and Stress Scale-21 in Swedish translation. *Journal of Psychiatric and Mental Health Nursing*, 24(2–3), 154–162. <https://doi.org/10.1111/jpm.12363>
- Ali, A. M., Ahmed, A., Sharaf, A., Kawakami, N., Abdeldayem, S. M., & Green, J. (2017). The Arabic version of the Depression Anxiety Stress Scale-21: Cumulative scaling and discriminant-validation testing. *Asian Journal of Psychiatry*, 30, 56–58. <https://doi.org/10.1016/j.ajp.2017.07.018>
- Almhdawi, K. A., Alazrai, A., Kanaan, S., Shyyab, A. A., Oteir, A. O., Mansour, Z. M., & Jaber, H. (2020). Post-stroke depression, anxiety, and stress symptoms and their associated factors: A cross-sectional study. *Neuropsychological Rehabilitation*, 1–14. <https://doi.org/10.1080/09602011.2020.1760893>
- Apóstolo, J. L. A., Mendes, A. C., & Azeredo, Z. A. (2006). Adaptation to Portuguese of the Depression, Anxiety and Stress Scales (DASS). *Revista Latino-Americana de Enfermagem*, 14(6), 863–871. <https://doi.org/10.1590/S0104-11692006000600006>
- Arbuckle, J. L. (2012). *IBM SPSS Amos 21 users guide*. Amos Development Corporation.
- Asghari, A., Saed, F., & Dibajnia, P. (2008). Psychometric properties of the Depression Anxiety Stress Scales-21 (DASS-21) in a non-clinical Iranian sample. *International Journal of Psychology*, 2(2), 82–102.
- Bados, A., Solanas, A., & Andrés, R. (2005). Psychometric properties of the Spanish version of Depression, Anxiety and Stress Scales (DASS). *Psicothema*, 17(4), 679–683.
- Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 9(1), 78–102. [https://doi.org/10.1207/S15328007SEM0901\\_5](https://doi.org/10.1207/S15328007SEM0901_5)
- Bandalos, D. L. (2018). *Measurement theory and applications for the social sciences*. The Guilford Press.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56(6), 893–897. <https://doi.org/10.1037/0022-006X.56.6.893>
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the revised Beck Depression Inventory-II*. Psychological Corporation.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88(3), 588–606. <https://doi.org/10.1037/0033-2909.88.3.588>
- Blankson, A. N., & McArdle, J. J. (2015). Measurement invariance of cognitive abilities across ethnicity, gender, and time among older Americans. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 70(3), 386–397. <https://doi.org/10.1093/geronb/gbt106>
- Borkovec, T. D., Echemendia, R. J., Ragusea, S. A., & Ruiz, M. (2006). The Pennsylvania practice research network and future possibilities for clinically meaningful and scientifically rigorous psychotherapy effectiveness research. *Clinical Psychology: Science and Practice*, 8(2), 155–167. <https://doi.org/10.1093/clipsy.8.2.155>
- Bottesi, G., Ghisi, M., Altoè, G., Conforti, E., Melli, G., & Sica, C. (2015). The Italian version of the Depression Anxiety Stress Scales-21: Factor structure and psychometric properties on community and clinical samples. *Comprehensive Psychiatry*, 60, 170–181. <https://doi.org/10.1016/j.comppsy.2015.04.005>

- Byrne, B. M., & van de Vijver, F. J. R. (2010). Testing for measurement and structural equivalence in large-scale cross-cultural studies: Addressing the issue of nonequivalence. *International Journal of Testing*, 10(2), 107–132. <https://doi.org/10.1080/15305051003637306>
- Byrne, D. G., Davenport, S. C., & Mazanov, J. (2007). Profiles of adolescent stress: The development of the Adolescent Stress Questionnaire (ASQ). *Journal of Adolescence*, 30(3), 393–416. <https://doi.org/10.1016/j.adolescence.2006.04.004>
- Carlson, K. D., & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. *Organizational Research Methods*, 15(1), 17–32. <https://doi.org/10.1177/1094428110392383>
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 14(3), 464–504. <https://doi.org/10.1080/10705510701301834>
- Chen, F. F. (2008). What happens if we compare chopsticks with forks? The impact of making inappropriate comparisons in cross-cultural research. *Journal of Personality and Social Psychology*, 95(5), 1005–1018. <https://doi.org/10.1037/a0013193>
- Chen, F. F., Hayes, A., Carver, C. S., Laurenceau, J.-P., & Zhang, Z. (2012). Modeling general and specific variance in multifaceted constructs: A comparison of the bifactor model to other approaches. *Journal of Personality*, 80(1), 219–251. <https://doi.org/10.1111/j.1467-6494.2011.00739.x>
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 9(2), 233–255. [https://doi.org/10.1207/S15328007SEM0902\\_5](https://doi.org/10.1207/S15328007SEM0902_5)
- Clara, I. P., Cox, B. J., & Enns, M. W. (2001). Confirmatory factor analysis of the Depression-Anxiety-Stress Scales in depressed and anxious patients. *Journal of Psychopathology and Behavioral Assessment*, 23(1), 61–67. <https://doi.org/10.1023/A:1011095624717>
- Cohen, S., & Herbert, T. B. (1996). Health psychology: Psychological factors and physical disease from the perspective of human psychoneuroimmunology. *Annual Review of Psychology*, 47(1), 113–142. <https://doi.org/10.1146/annurev.psych.47.1.113>
- Coker, A. O., Coker, O. O., & Sanni, D. (2018). Psychometric properties of the 21-item Depression Anxiety Stress Scale (DASS-21). *African Research Review*, 12(2), 135. <https://doi.org/10.4314/afrrrev.v12i2.13>
- Cole, D. A. (1987). Utility of confirmatory factor analysis in test validation research. *Journal of Consulting and Clinical Psychology*, 55(4), 584–594. <https://doi.org/10.1037/0022-006X.55.4.584>
- Conley, C. S., Shapiro, J. B., Huguenel, B. M., & Kirsch, A. C. (2020). Navigating the college years: Developmental trajectories and gender differences in psychological functioning, cognitive-affective strategies, and social well-being. *Emerging Adulthood*, 8(2), 103–117. <https://doi.org/10.1177/2167696818791603>
- Crawford, J. R., & Henry, J. D. (2003). The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample. *British Journal of Clinical Psychology*, 42(2), 111–131. <https://doi.org/10.1348/014466503321903544>
- Daza, P., Novy, D. M., Stanley, M. A., & Averill, P. (2002). The Depression Anxiety Stress Scale-21: Spanish translation and validation with a Hispanic sample. *Journal of Psychopathology and Behavioral Assessment*, 24(3), 195–205. <https://doi.org/10.1023/A:1016014818163>
- Downs, A., Boucher, L. A., Campbell, D. G., & Dasse, M. (2013). Development and initial validation of the Symptoms and Assets Screening Scale. *Journal of American College Health*, 61(3), 164–174. <https://doi.org/10.1080/07448481.2013.773902>

- Dreyer, Z., Henn, C., & Hill, C. (2019). Validation of the Depression Anxiety Stress Scale-21 (DASS-21) in a non-clinical sample of South African working adults. *Journal of Psychology in Africa*, 29(4), 346–353. <https://doi.org/10.1080/14330237.2019.1647499>
- Fliege, H., Rose, M., Arck, P., Walter, O. B., Kocalevent, R. D., Weber, C., & Klapp, B. F. (2005). The Perceived Stress Questionnaire (PSQ) reconsidered: Validation and reference values from different clinical and healthy adult samples. *Psychosomatic Medicine*, 67(1), 78–88. <https://doi.org/10.1097/01.psy.0000151491.80178.78>
- Furr, R. M. (2011). *Scale construction and psychometrics for social and personality psychology*. Sage Publications, Inc.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications, Inc.
- Hekimoglu, L., Altun, Z., Kaya, E., Bayram, N., & Bilgel, N. (2012). Psychometric properties of the Turkish version of the 42 item Depression Anxiety Stress Scale (DASS-42) in a clinical sample. *International Journal of Psychiatry in Medicine*, 44(3), 183–198. <https://doi.org/10.2190/PM.44.3.a>
- Henkel, V. (2003). Identifying depression in primary care: A comparison of different methods in a prospective cohort study. *BMJ*, 326(7382), 200–201. <https://doi.org/10.1136/bmj.326.7382.200>
- Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 44(2), 227–239. <https://doi.org/10.1348/014466505X29657>
- Horn, J. L., & Mcardle, J. J. (1992). A practical and theoretical guide to measurement invariance in aging research. *Experimental Aging Research*, 18(3), 117–144. <https://doi.org/10.1080/03610739208253916>
- Joplin, S., & Petar Vrklevski, L. (2017). Emotional anaesthesia: A cognitive-behavioural treatment of prolonged grief in a client with complex comorbidities-the importance of reintegrating attachment, memory, and self-identity. *Bereavement Care*, 36(1), 25–32. <https://doi.org/10.1080/02682621.2017.1305048>
- Kataoka, S. H., Zhang, L., & Wells, K. B. (2002). Unmet need for mental health care among U.S. children: Variation by ethnicity and insurance status. *American Journal of Psychiatry*, 159(9), 1548–1555. <https://doi.org/10.1176/appi.ajp.159.9.1548>
- Kia-Keating, M., No, U., Moore, S., Furlong, M. J., Liu, S., & You, S. (2018). Structural validity of the Depression, Anxiety, and Stress Scales-21 adapted for U.S. undergraduates. *Emerging Adulthood*, 6(6), 434–440. <https://doi.org/10.1177/2167696817745407>
- Kline, R. B. (2014). *Principles and practices of structural equation modeling (3rd ed.)*. American Psychological Association.
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9. *Journal of General Internal Medicine*, 16, 606–613.
- Le, M. T. H., Tran, T. D., Holton, S., Nguyen, H. T., Wolfe, R., & Fisher, J. (2017). Reliability, convergent validity and factor structure of the DASS-21 in a sample of Vietnamese adolescents. *PLOS ONE*, 12(7), e0180557. <https://doi.org/10.1371/journal.pone.0180557>
- Lee, D. (2019). The convergent, discriminant, and nomological validity of the Depression Anxiety Stress Scales-21 (DASS-21). *Journal of Affective Disorders*, 259, 136–142. <https://doi.org/10.1016/j.jad.2019.06.036>



- Lee, E. H., Moon, S. H., Cho, M. S., Park, E. S., Kim, S. Y., Han, J. S., & Cheio, J. H. (2019). The 21-item and 12-item versions of the Depression Anxiety Stress Scales: Psychometric evaluation in a Korean population. *Asian Nursing Research*, 13(1), 30–37. <https://doi.org/10.1016/j.anr.2018.11.006>
- Liptzin, B. (2009). Quality improvement, pay for performance, and “outcomes measurement”: What makes sense? *Psychiatric Services*, 60(1), 108–111. <https://doi.org/10.1176/ps.2009.60.1.108>
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling: A Multidisciplinary Journal*, 9(2), 151–173. [https://doi.org/10.1207/S15328007SEM0902\\_1](https://doi.org/10.1207/S15328007SEM0902_1)
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335–343. <https://doi.org/10.1007/BF02511245>
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd. Ed.). Psychology Foundation.
- Medvedev, O. N., Krägeloh, C. U., Titkova, E. A., & Siegert, R. J. (2018). Rasch analysis and ordinal-to-interval conversion tables for the Depression, Anxiety and Stress Scale. *Journal of Health Psychology*, 25(10–11), 1374–1383. <https://doi.org/10.1177/1359105318755261>
- Mellor, D., Vinet, E. V., Xu, X., Hidayah Bt Mamat, N., Richardson, B., & Román, F. (2015). Factorial invariance of the DASS-21 among adolescents in four countries. *European Journal of Psychological Assessment*, 31(2), 138–142. <https://doi.org/10.1027/1015-5759/a000218>
- Millsap, R. E., & Kwok, O.-M. (2004). Evaluating the impact of partial factorial invariance on selection in two populations. *Psychological Methods*, 9(1), 93–115. <https://doi.org/10.1037/1082-989X.9.1.93>
- Millsap, R. E., & Olivera-Aguilar, M. (2012). Investigating measurement invariance using confirmatory factor analysis. In R. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 380–392). The Guilford Press.
- Moore, S. A., Dowdy, E., & Furlong, M. J. (2017). Using the Depression, Anxiety, Stress Scales–21 with U.S. adolescents: An alternate models analysis. *Journal of Psychoeducational Assessment*, 35(6), 581–598. <https://doi.org/10.1177/0734282916651537>
- Musa, R., Fadzil, M. A., & Zain, Z. (2007). Translation, validation and psychometric properties of Bahasa Malaysia version of the Depression Anxiety and Stress Scales (DASS). *ASEAN Journal of Psychiatry*, 8(2), 82–89.
- Muttaqin, D., Yunanto, T. A. R., Fitria, A. Z. N., Ramadhanty, A. M., & Lempang, G. F. (2020). Properti psikometri Self-Compassion Scale versi Indonesia: Struktur faktor, reliabilitas, dan validitas kriteria. *Persona: Jurnal Psikologi Indonesia*, 9(2), 189–208. <https://doi.org/10.30996/persona.v9i2.3944>
- Negi, A. S., Khanna, A., & Aggarwal, R. (2019). Psychological health, stressors and coping mechanism of engineering students. *International Journal of Adolescence and Youth*, 24(4), 511–520. <https://doi.org/10.1080/02673843.2019.1570856>
- Ng, F., Trauer, T., Dodd, S., Callaly, T., Campbell, S., & Berk, M. (2007). The validity of the 21-item version of the Depression Anxiety Stress Scales as a routine clinical outcome measure. *Acta Neuropsychiatrica*, 19(5), 304–310. <https://doi.org/10.1111/j.1601-5215.2007.00217.x>
- Norton, P. J. (2007). Depression Anxiety and Stress Scales (DASS-21): Psychometric analysis across four racial groups. *Anxiety, Stress & Coping*, 20(3), 253–265. <https://doi.org/10.1080/10615800701309279>



- Oei, T. P. S., Sawang, S., Goh, Y. W., & Mukhtar, F. (2013). Using the Depression Anxiety Stress Scale 21 (DASS-21) across cultures. In *International Journal of Psychology* (Vol. 48, Issue 6, pp. 1018–1029). Taylor & Francis. <https://doi.org/10.1080/00207594.2012.755535>
- Osman, A., Wong, J. L., Bagge, C. L., Freedenthal, S., Gutierrez, P. M., & Lozano, G. (2012). The Depression Anxiety Stress Scales-21 (DASS-21): Further examination of dimensions, scale reliability, and correlates. *Journal of Clinical Psychology*, 68(12), 1322–1338. <https://doi.org/10.1002/jclp.21908>
- Page, A. C., Hooke, G. R., & Morrison, D. L. (2007). Psychometric properties of the Depression Anxiety Stress Scales (DASS) in depressed clinical samples. *British Journal of Clinical Psychology*, 46(3), 283–297. <https://doi.org/10.1348/014466506X158996>
- Patias, N. D., Machado, W. D. L., Bandeira, D. R., & Dell’Aglio, D. D. (2016). Depression Anxiety and Stress Scale (DASS-21) - Short Form: Adaptation and validation for Brazilian adolescents. *Psico-USF*, 21(3), 459–469. <https://doi.org/10.1590/1413-82712016210302>
- Radloff, L. S. (1977). The CES-D Scale. *Applied Psychological Measurement*, 1(3), 385–401. <https://doi.org/10.1177/014662167700100306>
- Randall, D., Thomas, M., Whiting, D., & McGrath, A. (2017). Depression Anxiety Stress Scales (DASS-21): Factor structure in traumatic brain injury rehabilitation. *Journal of Head Trauma Rehabilitation*, 32(2), 134–144. <https://doi.org/10.1097/HTR.0000000000000250>
- Reise, S. P. (2012). The rediscovery of bifactor measurement models. *Multivariate Behavioral Research*, 47(5), 667–696. <https://doi.org/10.1080/00273171.2012.715555>
- Ronk, F. R., Korman, J. R., Hooke, G. R., & Page, A. C. (2013). Assessing clinical significance of treatment outcomes using the DASS-21. *Psychological Assessment*, 25(4), 1103–1110. <https://doi.org/10.1037/a0033100>
- Schnapp, J. E., O’Neal, D. N., & Vaughn, A. A. (2020). Dyadic perceptions of depression and anxiety in romantic relationships. *Journal of Social and Personal Relationships*, 37(2), 432–449. <https://doi.org/10.1177/0265407519867418>
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99(6), 323–338. <https://doi.org/10.3200/JOER.99.6.323-338>
- Severino, G. A., & Haynes, W. D. G. (2010). Development of an Italian version of the Depression Anxiety Stress Scales. *Psychology, Health & Medicine*, 15(5), 607–621. <https://doi.org/10.1080/13548506.2010.498889>
- Sinclair, S. J., Siefert, C. J., Slavin-Mulford, J. M., Stein, M. B., Renna, M., & Blais, M. A. (2012). Psychometric evaluation and normative data for the Depression, Anxiety, and Stress Scales-21 (DASS-21) in a nonclinical sample of U.S. adults. *Evaluation & the Health Professions*, 35(3), 259–279. <https://doi.org/10.1177/0163278711424282>
- Spielberger, C. D., Goruch, R. L., & Lushene, R. E. (1970). *Manual for State Trait Anxiety Inventory (STAI Y-II)*. Consulting Psychologist Press.
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder. *Archives of Internal Medicine*, 166(10), 1092. <https://doi.org/10.1001/archinte.166.10.1092>
- Tonsing, K. N. (2014). Psychometric properties and validation of Nepali version of the Depression Anxiety Stress Scales (DASS-21). *Asian Journal of Psychiatry*, 8, 63–66. <https://doi.org/10.1016/j.ajp.2013.11.001>

- Tran, T. D., Tran, T., & Fisher, J. (2013). Validation of the depression anxiety stress scales (DASS) 21 as a screening instrument for depression and anxiety in a rural community-based cohort of northern Vietnamese women. *BMC Psychiatry*, 13(1), 24. <https://doi.org/10.1186/1471-244X-13-24>
- Tully, P. J., Zajac, I. T., & Venning, A. J. (2009). The structure of Anxiety and Depression in a normative sample of younger and older Australian adolescents. *Journal of Abnormal Child Psychology*, 37(5), 717–726. <https://doi.org/10.1007/s10802-009-9306-4>
- van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology*, 9(4), 486–492. <https://doi.org/10.1080/17405629.2012.686740>
- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3(1), 4–70. <https://doi.org/10.1177/109442810031002>
- Vignola, R. C. B., & Tucci, A. M. (2014). Adaptation and validation of the Depression, Anxiety and Stress Scale (DASS) to Brazilian Portuguese. *Journal of Affective Disorders*, 155(1), 104–109. <https://doi.org/10.1016/j.jad.2013.10.031>
- Wang, B., You, J., Lin, M. P., Xu, S., & Leung, F. (2017). Developmental trajectories of nonsuicidal self-injury in adolescence and intrapersonal/interpersonal risk factors. *Journal of Research on Adolescence*, 27(2), 392–406. <https://doi.org/10.1111/jora.12273>
- Watson, D., Clark, L. A., Weber, K., Assenheimer, J. S., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model: II. Exploring the symptom structure of anxiety and depression in student, adult, and patient samples. *Journal of Abnormal Psychology*, 104(1), 15–25. <https://doi.org/10.1037/0021-843X.104.1.15>
- Xavier, S., João Martins, M., Pereira, A. T., Paula Amaral, A., João Soares, M., Roque, C., & Macedo, A. (2017). Contribution for the Portuguese validation of the Depression, Anxiety and Stress Scales (DASS-21): Comparison between dimensional models in a sample of students. *European Psychiatry*, 41(S1), S416–S416. <https://doi.org/10.1016/j.eurpsy.2017.01.365>
- Yıldırım, A., Boysan, M., & Kefeli, M. C. (2018). Psychometric properties of the Turkish version of the Depression Anxiety Stress Scale-21 (DASS-21). *British Journal of Guidance and Counselling*, 46(5), 582–595. <https://doi.org/10.1080/03069885.2018.1442558>
- Yohannes, A. M., Dryden, S., & Hanania, N. A. (2019). Validity and responsiveness of the Depression Anxiety Stress Scales-21 (DASS-21) in COPD. *Chest*, 155(6), 1166–1177. <https://doi.org/10.1016/j.chest.2018.12.010>
- Zanon, C., Brenner, R. E., Baptista, M. N., Vogel, D. L., Rubin, M., Al-Darmaki, F. R., Gonçalves, M., Heath, P. J., Liao, H. Y., Mackenzie, C. S., Topkaya, N., Wade, N. G., & Zlati, A. (2020). Examining the dimensionality, reliability, and invariance of the Depression, Anxiety, and Stress Scale-21 (DASS-21) across eight countries. *Assessment*. <https://doi.org/10.1177/1073191119887449>
- Zhang, B., Sun, T., Cao, M., & Drasgow, F. (2020). Using bifactor models to examine the predictive validity of hierarchical constructs: Pros, cons, and solutions. *Organizational Research Methods*, 109442812091552. <https://doi.org/10.1177/1094428120915522>

**Psikohumaniora**  
Jurnal Penelitian Psikologi

1. **Author:** [Name]  
 2. **Title:** [Title]  
 3. **Journal:** [Journal]  
 4. **Volume:** [Volume]  
 5. **Issue:** [Issue]  
 6. **Page:** [Page]



ISSN 2502-9363 (print)  
ISSN 2527-7456 (online)

# Psikohumaniora

## Jurnal Penelitian Psikologi

Program Studi Psikologi  
Fakultas Psikologi dan Kesehatan (FPK)  
Universitas Islam Negeri (UIN) Walisongo  
Semarang - Indonesia

### Psikohumaniora: Jurnal Penelitian Psikologi

Journal Title	Psikohumaniora: Jurnal Penelitian Psikologi
Abbreviation	Psikohumaniora J. Penelit. Psikol.
Short Title	Psikohumaniora
Language	English (preferred); Indonesian
ISSN	2527-7456 (online); 2502-9363 (printed)
Publication Frequency	2 issues per year
DOI Prefix (Crossref)	10.21580/pjpp
National Accreditation	SINTA 2
Editor in Chief	Dr. Baldi Bukhori, Assoc. Prof. (Scopus; Google Scholar)

**Psikohumaniora: Jurnal Penelitian Psikologi** (translated in English, **Psikohumaniora: Journal of Psychological Research**) is an open-access, and the peer-reviewed journal publishes research-based articles on Psychology in general.

#### Redefining Focus and Scope

In October 2020, Psikohumaniora: Jurnal Penelitian Psikologi redefined its focus and scope. Starting 2021, it will publish specialized articles on clinical psychology and positive psychology based on empirical studies in psychology and various other disciplines. Papers submitted to this journal must demonstrate a well-thought-out research design, appropriate data analysis, and interpretation. This journal is a medium for disseminating psychological research findings, aiming to serve psychological study forums across Indonesia and other parts of the world.

#### FOCUS

Psikohumaniora: Jurnal Penelitian Psikologi is a scientific journal that focuses on clinical psychology and positive psychology. This journal publishes articles based on empirical studies using qualitative and quantitative approaches or the combination of both.

#### SCOPE

Psikohumaniora: Jurnal Penelitian Psikologi calls for scientific articles on clinical psychology (such as schizophrenia spectrum, mood disorders, anxiety disorders, and obsessive-compulsive and related disorder, trauma and stressor-related disorders, dissociative, somatic symptom and related disorders, eating disorders, substance related-addictive disorders, personality disorder, paraphilic disorders) and positive psychology (such as adaptability, hope, mindfulness, happiness, well-being, life satisfaction, the meaning of life, gratitude, forgiveness, resilience, and flourishing). It accommodates issues at varying levels of analysis (personal, group, and societal research) and methods (psychodiagnostic and psychological interventions). Furthermore, it provides the opportunity for publication and even prioritizes or reserves special spaces for articles based on inter/multidisciplinary and trans-disciplinary research.



Editorial Team

Acknowledgements

Focus and Scope

Publication Ethics

Author Guidelines

Online Submission

Copyright Notice

Author Fees

Call for Papers

Article Template

Screen for Plagiarism

Reference Manager

Certificate of Accreditation

Indexing Sites

Citedness in SCOPUS  
Indexed Journals

Article Statistics

Visitor Statistics

User

Username

## Editor in Chief

Baidi Bukhori, Assoc. Prof. Dr., M.Si., (Scopus ID 57189632738) Universitas Islam Negeri Walisongo, Semarang, Indonesia

## Editorial Board

Sefa Bulut, Prof., Ph.D., (Scopus ID 7003567505; Researcher ID S-6216-2017) İbn Haldun Üniversitesi, İstanbul, Turkey  
Abdul Rahman Shaleh, Assoc. Prof. Dr., M.Si., (Scopus ID 57188967170) Universitas Islam Negeri Syarif Hidayatullah, Jakarta, Indonesia

Adesile Moshood Imran, Dr., (Scopus ID 55634831400) Osun State University, Osogbo, Nigeria

Nada Ibrahim, Dr., (Scopus ID 37107675100) University of South Australia, Adelaide, Australia

Nor Ba'yah Abdul Kadir, Assoc. Prof. Dr., (Scopus ID 36104996200; Researcher ID AAS-2595-2020) School of Psychology and Human Development, Universiti Kebangsaan Malaysia, Bangi, Malaysia

Olga Pavlova, Ph.D., (Researcher ID X-7623-2019) Department of Cross-Cultural Psychology and Psychological Problems of Multicultural Education, Moscow State University of Psychology and Education, Moscow, Russian Federation

Subandi Subandi, Prof., M.A., Ph.D., (Scopus ID 44061779800) Universitas Gadjah Mada, Yogyakarta, Indonesia

Wan Shahrazad Wan Sulaiman, Assoc. Prof. Dr., (Scopus ID 36609474500) Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Malaysia

Zainudin Abu Bakar, Assoc. Prof. Dr., (Scopus ID 55367998800; Researcher ID A-1699-2013) Universiti Teknologi Malaysia, Johor Bahru, Malaysia

Douglas Paton, Prof., Ph.D., (Scopus ID 7103157913) Charles Darwin University, Casuarina NT, Australia

Waheeda Khan, Prof., Dr., (Scopus ID 57085902900) Department of Clinical Psychology, Shree Guru Gobind Singh Tricentenary (SGT) University, Haryana, India

Aqeel Khan, (Scopus ID 8629564400) Universiti Teknologi Malaysia

Hooman Keshavarzi, Psy.D., (Scopus ID 55762755700) Department of Psychological Research, Khalil Center, Illinois, United States

Akbar Husain, Ph.D., (Scopus ID 35753155400) Department of Psychology, Aligarh Muslim University, Aligarh, India

Andrian Liem, Ph.D., (Scopus ID 57194469771; Researcher ID I-1010-2016) Universidade de Macaudo, Taipa, Macau, China

## Associate/Handling Editor

Ida Hartina Ahmed Tharbe, Dr., (Scopus ID 57163867800) University of Malaya, Kuala Lumpur, Malaysia

Muwaga Musa, Dr., (Scopus ID 57159089500) Kampala University, Uganda

Rifa Hidayah, Dr. M.Si., (Scopus ID 57196276731; Researcher ID AAS-4837-2020) Universitas Islam Negeri Maulana Malik Ibrahim, Malang, Indonesia

U. Ulfiah, Prof., Dr., M.Si., (Scopus ID 57204357944) Universitas Islam Negeri Sunan Gunung Djati, Bandung, Indonesia

Wustari Larasati H. Mangundjaya, Dr., M.Org.Psy.SE, Psikolog, (Scopus ID 55640036700) Universitas Indonesia, Jakarta, Indonesia

Dewi Retno Suminar, Dr., M. Si., Psikolog (Scopus ID 57211576386) Universitas Airlangga, Surabaya, Indonesia

## Language Editor

Arif Subiyanto, Drs., M.A., Universitas Negeri Malang, Indonesia

## Graphic & Layout Editor

Helmi Suyanto, Relawan Jurnal Indonesia Pengda Jawa Tengah; Bengkel Jurnal Semarang, Indonesia



## Table of Contents

### Articles

#### Exploring gender differences in the vulnerability towards drug abuse among adolescents in Malaysia

-  **Wan Shahrazad Wan Sulaiman\*** - (Scopus ID 36609474500), Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia
-  **Mohammad Rahim Kamaluddin** - (Scopus ID 56131703800) Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia
-  **Ezrina Zakaria** - (Scopus ID 56287502900) Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia
-  **Fauziah Ibrahim** - (Scopus ID 36607826700) Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia
-  **Nazirah Hassan** - (Scopus ID 57211334200) Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia
-  **Jamiah Manap** - (Scopus ID 13408463000) Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia
-  **Salina Nen** - (Scopus ID 54584027000) Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia
-  **Zainah Ahmad Zamani** - (Scopus ID 36609739900) Centre for Research in Psychology and Human Well-Being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia
-  **Fatimah Yusoff** - (Scopus ID 35095807900) Open University Malaysia, Petaling Jaya, Selangor, Malaysia



1-12

 Abstract : 108 Times |  PDF : 82 Times |  DOI : 10.21580/pjpp.v6i1.6679

#### Couple resilience predicted marital satisfaction but not well-being and health for married couples in Bali, Indonesia




-  **Edwin Adrianta Surijah\*** - 1) Faculty of Health, School of Psychology & Counselling, Queensland University of Technology (QUT), Brisbane, QLD, Australia; 2) School of Psychology, Universitas Dhyana Pura, Badung, Bali, Indonesia
-  **Gaura Hari Prasad** - School of Psychology, Universitas Dhyana Pura, Badung, Bali, Indonesia
-  **Made Rinda Ayu Saraswati** - School of Psychology, Universitas Dhyana Pura, Badung, Bali, Indonesia



13-32

 Abstract : 87 Times |  PDF : 86 Times |  DOI : 10.21580/pjpp.v6i1.6520

#### Prejudice against veiled Muslim women: The role of right-wing authoritarianism and intergroup anxiety



-  **Annisa Puspita Inderasari** - Faculty of Psychology, Universitas Surabaya, Surabaya, Indonesia
-  **Marselius Sampe Tondok\*** - (Scopus ID 57194698225) Faculty of Psychology, Universitas Surabaya, Surabaya, Indonesia
-  **Ananta Yudianto** - (Scopus ID 57205476015) Faculty of Psychology, Universitas Surabaya, Surabaya, Indonesia



33-46

 Abstract : 228 Times |  PDF : 97 Times |  DOI : 10.21580/pjpp.v6i1.7483

#### Parenting stress, social support, self-compassion, and parenting practices among mothers of children with ASD and ADHD



-  **Yulina Eva Riany\*** - (Scopus ID 57188816584) - 1) Parenting and Family Support Centre, The University of Queensland, Brisbane, Queensland, Australia; 2) Faculty of Human Ecology, Institut Pertanian Bogor, Bogor, Indonesia
-  **Ayu Ihsana** - Faculty of Human Ecology, Institut Pertanian Bogor, Bogor, Indonesia



47-60

 Abstract : 343 Times |  PDF : 93 Times |  DOI : 10.21580/pjpp.v6i1.6681

#### Psychometric properties of the Indonesian version of the Depression Anxiety Stress Scale: Factor structure, reliability, gender, and age measurement invariance

-  **Damawan Muttaqin\*** - Faculty of Psychology, Universitas Surabaya, Surabaya, Indonesia
-  **Serena Ripa** - (Scopus ID 57222640695) Centro la Famiglia Onlus, Naples, Italy



61-76

 Abstract : 69 Times |  PDF : 31 Times |  DOI : 10.21580/pjpp.v6i1.7815