



VALIDITY AND RELIABILITY OF THE GENERAL HEALTH QUESTIONNAIRE-12 (GHQ-12) IN INDONESIA: SCALE FOR THE DETECTION OF PSYCHOLOGICAL DISTRESS IN INDIVIDUALS EXPERIENCING QUARTER-LIFE CRISIS

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Abstract

This study aims to test the validity and reliability of the General Health Questionnaire-12 (GHQ-12) for the Indonesian version, specifically for individuals who experience a quarter-life crisis. Individuals who experience a quarter-life crisis are identical in the form of psychological distress. The development of the GHQ-12 instrument was carried out to facilitate professionals in detecting levels of psychological distress as well as as an instrument in providing appropriate treatment. 300 participants (M= 23.70; SD = 2.64) were involved in this study. The reliability of Cronbach's Alpha ($\alpha=0.903$) showed GHQ-12 as an acceptable instrument. The GHQ-12 was found a one-dimensional model. CFA with goodness of-fit was found GHQ-12 was accepted, value of $X^2= 153.893$; RMSEA=0.079; GFI=0.921; TLI= 0.918; and CFI=0.933. This study's results indicate satisfactory validity and reliability for GHQ-12 as an instrument in detecting psychological distress for individuals experiencing a quarter-life crisis. The implications of this study can be used as a reference in providing appropriate interventions for overcoming psychological distress.

Keywords: General Health Questionnaire (GHQ-12), psychological distress, mental health, Quarter-life crisis

Abstrak

Penelitian ini bertujuan untuk melakukan uji validitas dan reliabilitas pada skala *General Health Questionnaire-12 (GHQ-12)* untuk populasi di Indonesia, spesifik pada individu yang mengalami *quarter-life crisis*. Individu yang mengalami *quarter-life crisis* identik dengan adanya bentuk distres psikologis. Pengembangan instrumen GHQ-12 dilakukan untuk memudahkan tenaga profesional dalam melakukan deteksi tingkat distres psikologis serta sebagai instrumen dalam memberikan penanganan yang tepat. 300 partisipan (M=23.70; SD=2.64) terlibat dalam penelitian ini. Reliabilitas *Cronbach's Alpha* ($\alpha=0.903$) menunjukkan GHQ-12 sebagai instrumen yang dapat diterima. Hasil uji EFA menunjukkan GHQ-12 memiliki satu faktor. CFA dengan metode *goodness-of-fit* menunjukkan GHQ-12 diterima dengan nilai $X^2=153.893$; RMSEA=0.079; GFI=0.921; TLI= 0.918; dan CFI=0.933. Hasil penelitian ini menunjukkan validitas dan reliabilitas yang memuaskan untuk GHQ-12 sebagai instrumen dalam mendeteksi distres psikologis untuk individu yang mengalami *quarter-life crisis*. Implikasi penelitian ini dapat digunakan sebagai referensi dalam memberikan intervensi yang tepat dalam mengatasi distres psikologis.

Kata kunci: *General Health Questionnaire (GHQ-12), distres psikologis, kesehatan mental, quarter-life crisis*

1. Pendahuluan

Mental health problems in Indonesia today need special attention. The 2018 Basic Health Research (Kemenkes RI, 2018) found the prevalence of mental health cases in individuals older than 15 years, more than 19 million people experience mental-emotional disorders, and more than 12 million people experience depression. The results supported by Kaligis et al. (2021), the transitional age (N=393), 95.4% experienced anxiety, and 88% experienced depression. In Indonesia, it is also known that there is a gap, namely the still low proportion of people receiving adequate mental health services. In comparison, mental disorders in adulthood are known. Therefore a

need for the right strategy to overcome these problems. In addition to looking for the causative factors, the development of appropriate methods for early detection of individuals experiencing psychological distress is also carried out.

Various studies have found factors that contribute to psychological distress. The phenomenon of a quarter-life crisis can be categorized as one of the predictors of individuals experiencing psychological distress. Quarter-life crisis is a popular term related to problems regarding career, education, and romantic relationships in their 20s. Quarter-life Crisis are usually experienced by individuals facing the transition from adolescence to adulthood (Robinson et al., 2017). The characteristics of the quarter-life crisis occur in individuals during the transition period of 18-29 years (Arnett & Mitra, 2018). This transition period requires good adaptability. If individuals are unable or hampered in adapting, they tend to experience a quarter-life crisis and are at risk of experiencing psychological distress. Several studies have found that individuals who experience a quarter-life crisis are characterized by feelings of anxiety about the future, life goals, failure, or difficulty in making decisions (Robinson & Wright, 2013). If the quarter-life crisis occurs over a long period, it can cause individuals to be prone to experiencing psychological distress such as anxiety and depression (Arnett & Mitra, 2018; Arnett et al., 2014; Rosen et al., 2014) as well as problems in social relations.

Based on the problems above, it is necessary to detect individuals experiencing a quarter-life crisis accurately. If the detection is carried out correctly, it can assist in identifying, intervening, or taking preventive measures against the psychological distress of individuals experiencing a quarter-life crisis. Supported by Costello (2016) stated that early detection of mental health disorders is an effort to prevent them by considering the risk factors involved. Therefore, it is necessary to develop an appropriate measuring tool as a screening tool for individuals experiencing a quarter-life crisis. Previous studies on psychological distress measurement tools have widely utilized instruments such as the DASS-21 or the Kessler Psychological Distress Scale (K-10), both of which assess psychological distress. This study focuses on the GHQ-21 as a variation of measurement tools that relate to the characteristics of the quarter-life crisis, such as life uncertainty, major decisions, and identity changes, without a clinical orientation. Compared to the DASS-21 or K-10, which are more relevant for clinically significant disorders (Peixoto et al., 2021; Davies et al., 2015).

The General Health Questionnaire (GHQ) is a measuring tool developed by Goldberg to detect psychological distress and mental disorders. The original version of the GHQ questionnaire had 60-item, later developed into several versions (30-item, 28-item, 20-item, and 12-item). In comparison, the 12-point version is used as a screening instrument in various countries by WHO in research on mental health disorders. This is because the 12-point version of the GHQ is a useful measuring tool among similar instruments (Goldberg et al., 1997). General Health Questionnaire-12 (GHQ-12) is a measuring tool intended to screen the general population (nonclinical) for mental health problems (Goldberg et al., 1997). Various studies have assigned different names to dimensions depending on the type of model used. However, the common dimensions identified include general anxiety and social dysfunction. There are three scoring models for this measuring instrument: a bimodal scale (0-0-1-1) recommended in clinical research; a Likert scale with 4 points (1-2-3-4) most commonly used in various kinds of research; and the C-GHQ (0-0-1-1) or (0-1-1-1) models. GHQ-12 has been translated into 38 countries and cultures (Jackson, 2007).

Although the original version of the GHQ-12 measuring instrument developed by Goldberg (1988), based on research by Hystad & Johnsen (2020), has a unidimensional model, many other researchers doubt the internal structure of the measuring instrument. Therefore, more and more research is being carried out to develop and explore further the model and internal structure of GHQ-12. For example, a study conducted by Graetz (1991) and Abubakar and Fischer (2012) succeeded in forming the GHQ-12 model in a multidimensional version, namely anxiety/depression, social dysfunction, and loss of confidence. Besides of three-factor model, several other studies (Politi et al., 1994) found that GHQ-12 has a two-model version (general dysphoria and social dysfunction). Although many versions of the GHQ-12 model exist, the unidimensional version is still being researched. For example, Anjara et al. (2020) and Hystad and Johnsen (2020) have confirmed that the unidimensional version of the GHQ-12 study also showed satisfactory validity and reliability for the unidimensional model. Because of this diversity and discussion, this study explores the model factors for GHQ-12 in Indonesia.

In Indonesia, research on the validity and reliability of GHQ-12 has been carried out, including a screening tool for primary care patients who are at high risk for mental disorders (Anjara et al., 2020); screening for patients with somatoform disorders (Salma & Hidayat, 2013); and screening for adjustment disorders (Primasari & Hidayat, 2016). These studies found that GHQ-12 has good validity and reliability. For example, the study of Anjara et al. (2020) GHQ-12 has reliability ($\alpha=0.863$) with a Likert scale model scoring. In addition, the calculation of CFAs shows results under the theoretical model. Meanwhile, this study aimed to evaluate the psychometric GHQ-12 for the nonpsychiatric population. Specifically for the adult population who experiencing a quarter-life crisis in Indonesia. This research was conducted as a psychometric evaluation of GHQ-12, which is appropriate to be used as an appropriate measuring tool for the population in Indonesia, especially for individuals experiencing a quarter-life crisis.

2. Methods

Respondents

The criteria for subjects in this study were individuals aged 18-29 Indonesian people who were experiencing a quarter-life crisis. The recruitment process for subjects was conducted entirely online using Google Forms through various social media platforms. The sampling method in this study employed a non-probability sampling technique. Participants underwent a screening process to identify individuals experiencing a quarter-life crisis. The instrument used for screening was the Quarter-Life Crisis Screening Instrument (Petrov et al., 2022). From the 357 participants screened, 300 met the criteria for experiencing a quarter-life crisis and were further analyzed by completing the GHQ-12 scale, which was then evaluated for reliability and validity.

Instrument

General Health Questionnaire (GHQ-12). The General Health Questionnaire (GHQ-12) developed by David Goldberg (1970) is used to detect general psychological distress that can be applied to both community and nonclinical populations. This measuring instrument consists of 12 items that measure psychological distress over the past few weeks. This study uses a unidimensional model with a Likert scale (0-1-2-3-4).

Quarter-life crisis screening Instrument. A scale of quarter-life crisis screening adapted and modified from Petrov et al. (2022) was used to screen individuals who had a quarter-life crisis. This measuring instrument has a 12-point model scale (yes or no). 'Yes'=0, and 'no'=1. Screening is carried out using a cut-off-score of 6 points for the 'Yes' answer will be analyzed further.

Design

Research was conducted to test the validity and reliability of the General Health Questionnaire-12 (GHQ-12) scale. Before conducting validity and reliability tests, this study translated the scale from English to Indonesian. The original scale is translated by translators who are experts in English and Indonesian. The results of the measuring instrument, translated into Indonesian, are translated back into English (back translation), which is then compared with the original version of the measuring instrument. Experts in the relevant field also provide suggestions on the GHQ-12 and the screening scale for the quarter-life crisis.

Analysis Technique

The psychometric test aims to determine the validity and reliability of the GHQ-12 measuring instrument in the Indonesian population, specifically for individuals with a quarter-life crisis, carried out through several stages of analysis. The research data were collected by analyzing demographic data and testing assumptions using Skewness and Kurtosis. Researchers calculated scale reliability using Cronbach's Alpha estimation. Pearson's Product Moment was to analyze the item correlation. The factor analysis test using Exploratory Factor Analysis (EFA) was carried out to build a structural model. Confirmatory Factor Analysis (CFA) test to determine the extent to which the correlation between items and components of the measuring instrument followed the primary construct. CFA calculations were carried out to obtain evidence of the internal structure of GHQ-12 in Indonesia. The accuracy of the model is carried out using goodness-fit with parameters in the form of chi-square (χ^2), Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis index (TLI), goodness-of-fit index (GFI), and Comparative Fit Index (CFI).

3. Result

A total of 300 participants ($M= 23.70$, $SD= 2.64$) were aged 18 and 30 years old (Table 1). Male participants comprised 83 people (27.7%), and women consisted of 217 people (72.3%). The occupational status of the participants was employed (40.7%), students (34.7%), employed at the same time as students (10%), and unemployed (14.7%). Meanwhile, 88.3% of marital statuses stated that they were not married, and 11.7% were married.

Table 2. shows the average score of each GHQ-12 Item. The highest average of all items was $M=1.87$ ($SD=0.93$), while the lowest average was $M=1.22$ ($SD=1.10$). The skewness of all items shows a range of -0.40 to 0.81, while Kurtosis shows -0.8 to 1.08. The standard error of Kurtosis is 0.281. Based on these results, it is determined to meet the normality assumption.

Table 1. Participants Demographic

Characteristics	N	%
Age M=23.70 (2.64)		
18-20	31	10
21-30	79	90
Education		
High School	38	12.7
Diploma	28	9.3
University	232	77.3
Others	2	0.7
Employment status		
Student	104	34.7
Employed	122	40.7
Student + Employed	30	10
Unemployed	44	14.7
Marital status		
Unmarried	265	88.3
Married	35	11.7

Table 2. The average score and item-total correlation of GHQ-12

Item	Mean	SD	Min.	Maks.	Skewness	Kurtosis	Item-total (r)
Tidak mampu berkonsentrasi	1.29	0.98	0.00	3.00	0.22	-0.8	.626
Sulit tidur karena cemas	1.52	1.11	0.00	3.00	0.02	-1.2	.548
Merasa terbebani dalam banyak hal	1.87	0.93	0.00	3.00	-0.40	-0.52	.558
Sulit dalam membuat keputusan	1.30	0.97	0.00	2.00	0.13	-1.08	.609
Merasa terus menerus tertekan	1.48	1.03	0.00	3.00	0.81	-1.00	.631
Ketidakmampuan mengatasi kesulitan	1.31	1.06	0.00	4.00	0.33	-0.73	.720
Tidak menikmati aktivitas sehari-hari	1.37	1.11	0.00	3.00	0.15	-0.28	.602
Tidak mampu menghadapi masalah	1.22	1.10	0.00	3.00	0.35	-0.12	.664
Merasa tidak bahagia dan tertekan	1.38	1.11	0.00	3.00	0.17	-1.22	.675
Kehilangan kepercayaan diri	1.44	1.03	0.00	3.00	0.71	-1.07	.697
Merasa menjadi orang yang tidak berguna	1.56	1.16	0.00	4.00	-0.23	-1.25	.571
Merasa tidak bahagia dengan segala hal	1.34	1.13	0.00	2.00	0.14	-1.4	.606

Internal Consistency

Cronbach's Alpha for internal consistency GHQ-12, ($\alpha=0.903$) with the coefficient item-total correlation between 0.548 to 0.720 (Table 2.). Internal consistency is declared adequate if the reliability value is above 0.7. Cronbach's Alpha if an item deleted shows a smaller number on each indicator, it can be stated that all GHQ-12 items have an accepted reliability value. Internal consistency is also done by distinguishing male participants ($\alpha=0.90$) and female participants (0.903).

Factor Analyses

Exploratory Factor Analysis (EFA) with varimax rotation was used to determine the construct validity using the maximum likelihood method. Assumption tests were carried out using Kaiser-Meyer-Olkin (KMO) and Barlett's sphericity tests. The measure of sampling adequacy (MSA) showed a score of 0.925 and Barlett's Test of Sphericity ($p < 0.001$). These results indicate that the assumptions are met for factor analysis because the KMO score is above 0.60 and Barlett's test ($p < 0.001$) (Steed & Coakes, 2003). The factor loadings for each item on the GHQ-12 scale indicate a value greater than 0.5. While the variance produces one factor that can explain 48.61% of the total variance. The Pearson coefficients for each Item on the GHQ-12 scale are presented from coefficient correlation from 0.287 to 0.627 (Table 3).

Table 4. Pearson's Correlation

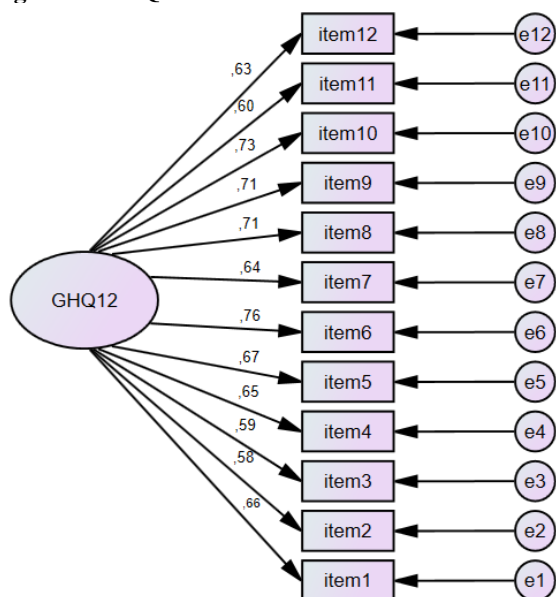
	GHQ 2	GHQ 3	GHQ 4	GHQ 5	GHQ 6	GHQ 7	GHQ 8	GHQ 9	GHQ 10	GHQ 11	GHQ 12
GHQ1	.412	.382	.543	.420	.544	.423	.419	.452	.438	.409	.379
GHQ2	1.00	.400	.358	.366	.481	.331	.390	.412	.403	.321	.390
GHQ3		1.00	.374	.547	.416	.376	.378	.373	.487	.287	.320
GHQ4			1.00	.494	.519	.380	.442	.397	.489	.373	.343
GHQ5				1.00	.529	.360	.433	.468	.522	.398	.343
GHQ6					1.00	.453	.627	.494	.537	.467	.407
GHQ7						1.00	.455	.522	.480	.381	.472
GHQ8							1.00	.568	.493	.413	.453
GHQ9								1.00	.510	.385	.560
GHQ10									1.00	.485	.474
GHQ11										1.00	.490
GHQ12											1.00

Table 5. Goodness-of-Fit Index

Index Goodness of Fit	Index Score
Chi-square (X ²)	153.893
Probability Scaled Chi-Square (p-value)	.000
Root Mean Square Error of Approximation (RMSEA)	.079
Tucker-Lewis Index (TLI)	.918
The goodness of Fit Index (GFI)	.921
Comparative Fit Index (CFI)	.933

Confirmatory Factor Analysis (CFA) with the maximum likelihood of testing the internal structure of each GHQ-12 Item. Index measurement model Goodness of Fit (Table 4). The parameters used are chi-square (χ^2), Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis index (TLI), goodness of fit index (GFI), and Comparative Fit Index (CFI). Figure 1. presents the model of the unidimensional factor model of the GHQ-12. The results of construct validity analysis on GHQ-12 showed chi-square (χ^2)= 153.893, df=54, p-value (<0.001), RMSEA=0.079, TLI= 0.918, GFI=0.921, and CFI=0.933. The items on the GHQ-12 scale show a factor loading ranging from 0.58 to 0.73. These results meet the recommended assumptions (Hair et al., 2010). GFI, CFI, and TLI values are above 0.90, while RMSEA is less than 0.08.

Figure 1. GHQ-12 Factor Model.



4. Discussion

The reliability of the GHQ-12 measuring instrument using the Likert scoring method shows Cronbach's Alpha was 0.903. This value indicates that the GHQ-12 has an excellent internal consistency for the population in Indonesia. Another good reliability value for GHQ-12 research in Indonesia is research by Primasari & Hidayat (2016) with a population of individuals with adjustment disorders using the same scoring method, having a Cronbach's Alpha of 0.863 (N=243). Research by Rahmandani et al. (2021) GHQ-12 (N=552) has Cronbach's Alpha ($\alpha=0.836$), and Anjara et al. (2020) with ($\alpha=0.76$). In addition, research on GHQ-12 from various other countries, such as Qin et al. (2018), found the GHQ-12 reliability value of 0.9. Padrón et al. (2012), GHQ-12 research with a population of paramedics in Brazil has a Cronbach's Alpha value of 0.89.

The test was conducted for Exploratory Factor Analysis first because EFA analysis was rarely found in subjects experiencing a quarter-life crisis. Exploratory Factor Analysis (EFA) resulted in one factor with a total variance of 48.61%. These results support the original version of the Goldberg and Williams (1988) scale. At the same time, different from other researchers from various countries found that GHQ-12 has three factors. GHQ-12 has three other factors, such as research by Gao et al. (2012); and Suzuki et al. (2011), consisting of anxiety or depression, distress, and loss of positive emotions. Research GHQ-12, 3 factors with other alternative models, such as anxiety, social dysfunction, and loss of self-confidence (Padrón et al., 2012; Abubakar & Fischer, 2012; Gelaye et al., 2015). The loading factor for this study's EFA test on GHQ-12 is around 0.287-0.627.

The model fit test from Confirmatory Factor Analysis (CFA) was conducted to evaluate the model using the goodness-of-fit method. With the chi-square of 153.893 with $p < 0.001$, it is interpreted that the measurement model is not following the empirical data. The RMSEA value in this study shows a value of 0.079, indicating a value of less than 0.08, so the model meets the model suitability (Hair et al., 2010). The RMSEA value in this study is similar to the research of Abubakar and Fisher (2012) with adult participants who produced an RMSEA of 0.80. However, the RMSEA value in this study is known to be relatively higher when compared to other studies such as research (Molina et al., 2014) with worker participants in Spain with an RMSEA of 0.067. In addition, the GFI and CFI values show values above 0.90, indicating the model's suitability to be interpreted (Hair et al., 2010). In addition, the TLI value is above 0.8 with a value of 0.918, it is stated that the accuracy of the model is good. The CFI value of 0.93 in this study is higher than the research of Abubakar and Fisher (2012), with a CFI of 0.89. The one-factor CFA test showed that the loading ranged from 0.58 to 0.73 (Figure 1). It can be concluded that the factor loading for GHQ-12 in the Indonesian version is quite good.

Although several studies using GHQ-12 partially support Graetz's (1991) theory that uses three dimensions some researchers also suggest conducting research using the unidimensional version of the GHQ-12 to obtain varying scores (Padrón et al., 2012). Different factors from various studies indicate that although the original scale of the GHQ-12 is unidimensional, the internal structure and dimensions of this measuring instrument are still a matter of debate. Different results from this comparative research show that unidimensional models that are influenced by the effect of statement sentences on items produce measurement accuracy compared to two and three-dimensions (Hystad & Johnsen, 2020). On the other hand, research on the comparison of internal structure and dimensions by Hystad and Johnsen (2020) concluded that GHQ-12 is flexible and multidimensional because of the influence on the use of sentences in each Item. In addition to using GHQ-12 with multidimensionality, it is not recommended to interpret subscale scores because the GHQ-12 measuring tool reflects more on general mental health than different constructs (Gnambs, 2018).

The proper screening instrument will be able to help professionals manage efficiency in the field of prevention and treatment of mental health. Especially in Indonesia, it is necessary to prioritize the development of screening measurement tools regarding mental health issues. This is because, based on previous research, it is known that Indonesia's health screening system is still little included in the routine procedures of public health services (Anjara et al., 2020). Especially for the target population, individuals in the transitional age from adolescence to early adulthood (Kaligis et al., 2021) are prone to experiencing psychological distress as well as a quarter-life crisis. Therefore, the implementation of screening for mental health problems needs special attention.

This study supported the original theory that the GHQ-12 was designed as a unidimensional measuring instrument. EFA and CFA tests also support existing constructs. However, this research is not without its weaknesses. The GHQ-12 validity and reliability test for the population in Indonesia does not compare the test with the bimodal scale form. In addition, this study also did not examine the differences between unidimensional and multidimensional. Another weakness is that the results of this study indicate the influence of demographic data on mental health. It is known that the demographic data for this study are women. The facts reveal that women are more prone to experiencing psychological distress than men (Malik et al., 2014). The implications of using this measuring instrument can be used to measure psychological distress in general.

Professionals can use this measurement tool for assessments to identify aspects requiring intervention, ensuring practical application for both practitioners and researchers. It can assist professionals in screening and developing support programs such as counseling, interventions, or institutional support services. The GHQ-12, proven valid and reliable for measuring psychological distress in individuals experiencing a quarter-life crisis,

helps differentiate between typical developmental transitions and significant psychological distress requiring clinical referral. For researchers, this tool aids in further exploration of the quarter-life crisis concept. Future studies can expand research on GHQ-12 with a more diverse population.

5. Conclusion

GHQ-12 shows adequate reliability and validity values for use by the population in Indonesia, especially for individuals experiencing a quarter-life crisis. This study's internal structure for the GHQ-12 supports the original theory, which is included in a unidimensional measuring instrument. However, GHQ-12 is flexible and can be used with multidimensional shapes. This study confirms that GHQ-12 can be used as a measurement tool in studies to detect general or nonclinical psychological distress.

6. References

- Abubakar, A., and Fischer, R. (2012). The factor structure of the 12-item general health questionnaire in a literate Kenyan population. *Stress Health* 28, 248–254. <https://doi.org/10.1002/smi.1420>
- Anjara, S.G., Bonetto, C., Van Bortel, T., & Brayne, C. Using the GHQ-12 to screen for mental health problems among primary care patients: Psychometrics and practical considerations. (2020). *International Journal of Mental Health Systems*, 14(62). <https://doi.org/10.1186/s13033-020-00397-0>
- Arnett, J. J., & Mitra, D. (2018). Are the features of emerging adulthood developmentally distinctive? A Comparison of ages 18–60 in the United States. *Emerging Adulthood*. <https://doi.org/10.1177/2167696818810073>
- Arnett, J. J., Žukauskienė, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: implications for mental health. *The Lancet. Psychiatry*, 1(7), 569–576. [https://doi.org/10.1016/S2215-0366\(14\)00080-7](https://doi.org/10.1016/S2215-0366(14)00080-7)
- Costello, E. J. (2016). Early detection and prevention of mental health problems: Developmental epidemiology and systems of support. *Journal of Clinical Child & Adolescent Psychology*, 24(6), 710–717. <https://doi.org/10.1080/15374416.2016.1236728>
- Davies, G., Caputi, P., Skarvelis, M., & Ronan, N. (2015). The depression anxiety and stress scales: Reference data from a large psychiatric outpatient sample. *Australian Journal of Psychology*, 67(2), 97–104. <https://doi.org/10.1111/ajpy.12069>
- Gnams, T., & Staufienbiel, T. (2018). The structure of the general health questionnaire (GHQ-12): Two meta-analytic factor analyses. *Health Psychology Review*, 1–38. <https://doi.org/10.1080/17437199.2018.1426484>
- Gao, W., Stark, D., Bennett, M. I., Siegert, R. J., Murray, S., and Higginson, I. J. (2012). Using the 12-item general health questionnaire to screen psychological distress from survivorship to end-of-life care: dimensionality and item quality. *Psycho-Oncology*, 21 (9), 954–961. <https://doi.org/10.1002/pon.1989>
- Gelaye, B., Tadesse, M. G., Lohsoonthorn, V., Lertmeharit, S., Pensuksan, W. C., Sanchez, S. E., Lemma, S., Berhane, Y., Vélez, J. C., Barbosa, C., Anderade, A., & Williams, M. A. (2015). Psychometric properties and factor structure of the General Health Questionnaire as a screening tool for anxiety and depressive symptoms in a multi-national study of young adults. *Journal of Affective Disorders*, 187, 197–202. <https://doi.org/10.1016/j.jad.2015.08.045>
- Graetz, B. (1991). Multidimensional properties of the general health questionnaire. *Social, Psychiatry, and Epidemiology*, 26, 132–138. <https://doi.org/10.1007/BF00782952>
- Goldberg, D.P., & Blackwell, B. (1970). Psychiatric illness in general practice: a detailed study using a new method of case identification. *British Medical Journal*, 2(5707), 439–443. <https://doi.org/10.1136/bmj.2.5707.439>
- Goldberg D. & Williams P. (1988). *A Users' Guide To The General Health Questionnaire*. London: GL Assessment
- Goldberg, D, P., Gater, R., Sartorius, N., Ustun, T.B., Piccinelli, M., Gureje, O., & Rutter, C. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine*, 27(1), 191–7. <https://doi.org/10.1017/S0033291796004242>
- Hair, J.F., Black, W.C., Babin, B.J. (2010). *Multivariate Data Analysis: A Global Perspective, 7th ed.*, Pearson Education International, Prentice Hall.
- Hystad, S.W. & Johnsen, B.H. (2020). The dimensionality of the 12-item general health questionnaire (GHQ-12): Comparisons of factor structures and invariance across samples and time. *Frontiers Psychology*, 11, 1300. <https://doi.org/10.3389/fpsyg.2020.01300>
- Jackson, C. (2007). The general health questionnaire. *Occupation Medicine*, 57(1), 79. <https://doi.org/10.1093/occmed/kql169>

- Kaligis, F., Ismail, R.I., Wiguna, T., Prasetyo, S., Indriatmi, W., Gunardi, H., Pandia, V., & Magdalena, C.C. (2021). Mental health problems and needs among transitional-age youth in Indonesia. *International Journal of Environmental Research and Public Health*, 18, 4046. <https://doi.org/10.3390/ijerph18084046>
- Kementerian Kesehatan Republik Indonesia (Kemenkes RI). (2018). *Riset kesehatan dasar: Hasil utama riskesdas 2018*. Layanan Data Kementerian Kesehatan RI. <https://repository.badankebijakan.kemkes.go.id/id/eprint/3514/1/Laporan%20Riskesdas%202018%20Nasional.pdf>
- Malik, S & Farooqi, Y.N. (2014). General and sexual harassment as predictors of posttraumatic stress symptoms among female health professionals. *World Journal of Medical Sciences*, 10(1): 43-49. <https://doi.org/10.5829/idosi.wjms.2014.10.1.81128>
- Molina, J.G., Rodrigo, M.F., Losilla, J.M., & Vives, J. (2014). Wording effects and the factor structure of the 12-item general health questionnaire (GHQ-12). *Psychological Assessment*, 26(3), 1031–1037 <http://dx.doi.org/10.1037/a0036472.supp>
- Padrón, A., Galán, I., Durbán, M., Gandarillas, A., and Rodríguez-Artalejo, F. (2012). Confirmatory factor analysis of the general health questionnaire (GHQ- 12) in Spanish adolescents. *An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation*, 21(7), 1291–1298. <https://doi.org/10.1007/s11136-011-0038-x>
- Peixoto, E. M., Zanini, D. S., & de Andrade, J. M. (2021). Cross-cultural adaptation and psychometric properties of the Kessler Distress Scale (K10): An application of the rating scale model. *Psicologia, reflexao e critica : revista semestral do Departamento de Psicologia da UFRGS*, 34(1), 21. <https://doi.org/10.1186/s41155-021-00186-9>
- Petrov, N., Robinson, O.C., & Arnett, J.J. (2022). The developmental crisis questionnaire (DCQ-12): Psychometric development and validation. *Journal of Adult Development*. <https://doi.org/10.1007/s10804-022-09403-w>
- Politi, P. L., Piccinelli, M., and Wilkinson, G. (1994). Reliability, validity, and factor structure of the 12-item general health questionnaire among young males in Italy. *Acta Psychiatrica Scandinavica*, 432–437. <https://doi.org/j.1600-0447.1994.tb01620.x>
- Primasari, I., & Hidayat, R. (2016). General Health Questionnaire-12 (GHQ-12) sebagai instrumen skrining gangguan penyesuaian. *Jurnal Psikologi*, 43(2), 121-134. <https://doi.org/10.22146/jpsi.9155>
- Qin, M., Vlachantoni, A., Evandrou, M., & Falkingham, J. (2018). General health questionnaire-12 reliability, factor structure, and external validity among older adults in India. *Indian Journal of Psychiatry*, 60(1), 56-59. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_112_17
- Rahmandani, A., La kahija, Y F. & Salma, S. (2021). Will self-compassion relieve distress?: A correlational study among Indonesian undergraduate students. *Journal of Medical Science*, 64 (2), 192-199. <https://doi.org/10.33160/yam.2021.05.013>
- Robinson, O. C., Demetre, J. D., & Litman, J. A. (2017). Adult life stage and crisis as predictors of curiosity and authenticity: Testing inferences from Erikson's lifespan theory. *International Journal of Behavioral Development*, 41(3), 426–431. <https://doi.org/10.1177/0165025416645201>
- Robinson, O. C., Wright, G. R. T., & Smith, J. A. (2013). The holistic phase model of early adult crisis. *Journal of Adult Development*, 20(1), 27–37. <https://doi.org/10.1007/s10804-013-9153-y>
- Rosen, N. O., Ivanova, E., & Knäuper, B. (2014). Differentiating intolerance of uncertainty from three related but distinct constructs. *Anxiety, Stress & Coping*, 27(1), 55-73. <https://doi.org/10.1080/10615806.2013.815743>
- Salma, & Hidayat, R. (2013). *Validasi klinik general health questionnaire-12 sebagai instrumen skrining gangguan somatoform di Puskesmas*. [Unpublished thesis]. Universitas Gadjah Mada, Yogyakarta, Indonesia.
- Steed, L., & Coakes, S.J. (2003). *SPSS analysis without anguish. Version 11 for Windows*. Milton, Queensland: John Wiley and Sons Australia
- Suzuki, H., Kaneita, Y., Osaki, Y., Minowa, M., Kanda, H., Suzuki, K., et al. (2011). Clarification of the factor structure of the 12-item general health questionnaire among Japanese adolescents and associated sleep status. *Psychiatry Research*, 188, 138–146. <https://doi.org/10.1016/j.psychres.2010.10.025>