Evaluating the Psychometric Properties of the Mental Health Continuum Short-Form

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ABSTRACT: The Mental Health Continuum-Short Form (MHC-SF) is a tool designed to evaluate an individual's overall mental health and well-being, encompassing emotional, psychological, and social dimensions. Adopted in several countries, including Portugal, South Korea, Italy, and France, the present study aims to adapt the MHC-SF for the Indonesian context and assess its psychometric properties. The adaptation followed the ITC Guidelines for Adapting Tests, an international standard for adapting and psychometrically testing measuring instruments. The content validity was evaluated through the involvement of three experts and four reviewers in assessing the results of the Indonesian translation. Data was collected from a sample of 256 students, who participated by filling out an online questionnaire. The results of the content validity indicated that the 14-item instrument was relevant to the purpose of measuring well-being. Construct validity showed a three-factor structure (emotional well-being, psychological well-being, and social well-being) with a fit model, and all items had a factor loading value greater than .5, indicating their validity. The reliability test revealed consistent results with alpha coefficient values in the range of .7 to .8 for the three dimensions, demonstrating that the instrument can provide consistent results when used on the same individual in different situations. This study concludes that the Indonesian version of the MHC-SF is valid and reliable for assessing an individual's well-being.

INTRODUCTION

Well-being is no longer just defined by the absence of mental disorders, but also encompasses a person's positive feelings towards themselves and their surroundings (A. M. Wood & Joseph, 2010). This shift in paradigm has led to an increased interest in the field of well-being, and hence, the development of measuring tools for well-being is crucial. In research, well-being is often measured using tools that focus on only one component, such as subjective well-being using Positive Affect Negative Effect (Watson et al., 1988) or psychological well-being using the Oxford Happiness Questionnaire (Hills & Argyle, 2002), which consists of 29 items, or Ryff's Scales of Psychological Well-Being (Springer & Hauser, 2006), which includes six dimensions. However, the World Health Organization (WHO) defines well-being as a subjective, psychological, and social condition of an individual's well-being. Thus, there is a need for tools that can measure well-being across all three dimensions.

Keyes (2007) highlights that optimal well-being is not only reflected in an individual's emotional and psychological functioning but also in their social functioning, including their ability to live life with enthusiasm and to be actively and productively involved. Keyes (2002) initially used mental health as a reference for well-being and assessed it through three measurement scales consisting of subjective well-being, psychological well-being, and social well-being, using a 42-item questionnaire known as the Mental Health Continuum Long Form. Keyes later streamlined the number of items to 14 items across the three dimensions (Keyes, 2008), creating the Mental Health Continuum-Short Form (MHC-SF). This self-reported questionnaire was designed to assess mental health at a population level (C. Keyes, 2009) and is intended to be an efficient and easily administrable tool.

The psychometric properties of the Mental Health Continuum-Short Form (MHC-SF) measuring tool have been evaluated in various countries. In 2020, psychometric tests were conducted on adolescent samples in the Netherlands (Kennes et al., 2020) and Denmark (Santini et al., 2020) and showed evidence of a fit with the three-factor structure of emotional, psychological, and social well-being. Additionally, a wider sample of 1448 participants aged 18-94 years in Portugal was also tested, and results confirmed the fit of the three-factor structure (Fonte et al., 2020).

The MHC-SF has also been adapted in several Asian countries. A study in South Korea, which involved high school students aged 14-17 (Lim, 2014), and a study in China, which involved 5,399 students (Guo et al., 2015), found that the MHC-SF measurement tool had a fit model on the three-factor structure of emotional, psychological, and social well-being. These findings were confirmed by a study conducted in Argentina in 2017, which compared several models of the MHC-SF measuring instrument and found that the three-factor structure was the most robust model (Lupano Perugini et al., 2017).

Rational of the Study

Through the adaptation and psychometric evaluation of the Mental Health Continuum-Short Form (MHC-SF), this research seeks to provide a comprehensive and efficient tool for assessing mental health in Indonesian adolescents. By taking into account emotional, psychological, and social well-being, the MHC-SF measuring instrument goes beyond traditional methods that focus solely on the absence of mental disorders and offers a more comprehensive view of an individual's overall well-being. This study is significant in that it adds to the current literature and provides valuable insights into the mental health status of Indonesian adolescents. The results of this research have the potential to inform mental health policies and interventions, ultimately leading to improved well-being for individuals in this population.

Objectives

The present study endeavors to advance the knowledge of well-being by proposing a unique and original method for evaluating an individual's mental health status through instrument adaptation. Furthermore, the aim of this study is to validate the three-continua model in the Indonesian adolescent population. The outcomes of this research are expected to provide a useful tool for evaluating mental health that can benefit mental health researchers in Indonesia.

METHODS

Design and Participants

This study employs a quantitative research approach with a focus on the evaluation of measuring instruments. The central variable of interest is well-being. The sampling technique employed in this study is non-probability web survey, which has been acknowledged to not provide equal opportunities for participation in a study as noted by Fan & Yan (2010). However, this research

utilizes self-selected polls where participants were given the autonomy to choose and opt-in to participate upon viewing the information via social media or other channels. The participants of the study consisted of 256 students with an average age of 19.2 years (standard deviation = 1.39). Of the participants, 176 were female and 80 were male who completed the MHC-SF questionnaire. The demographic distribution of the participants can be found in Table 1.

Instrument

The instrument used in this study was the MHC-SF (C. L. M. Keyes et al., 2008). MHC-SF is a self-report questionnaire measuring well-being's emotional, psychological, and social components. The MHC-SF was translated and validated into Bahasa Indonesia, consisting of 14 items representing various feelings of well-being. The first dimension is emotional well-being, and the example of feeling for this item is "Happy"; the second dimension is psychological well-being, and the example of feeling for this item is "Having a warm and trusting relationship with others"; and the third dimension is social well-being, and the example of feeling for this item is "Everyone is fundamentally good." There were six response options representing a 6-point scale indicating the time duration. Researchers provide six response options which are (1) never, (2) 1 or 2 times, (3) once per week, (4) 2-3 times per week, (5) almost every day, (6) every day. Participants were instructed to review the past month and complete the questionnaire. The complete instruction was "Please answer the questions below. In the past month, how often do you have the feelings of the following". All items in this instrument are in a good category. Therefore, the scores are given sequentially from 1-6 according to the answer choices. The emotional well-being dimension obtains a score from the total score on items 1,2 and 3. The psychological well-being dimension obtains a score from the total score on items 4, 5, 6, 7, 8, and 9. Meanwhile, the social well-being dimension obtains a score from the total score on items 10, 11, 12, 13, and 14.

Table 1. Demographic Data

Demographic	Frequency	Percentage
Age		
18	46	18.0
19	115	44.9
20	62	24.2
21	22	8.6
22	9	3.5
23	1	.4
24	1	.4
Sex		
Male	70	
Female	186	
Ethnicity		
Java	119	46.5
Betawi	26	10.2
Aceh	4	1.6
Minang	9	3.5
Sunda	56	21.9
Dayak	17	3.5
Others	25	12.8

Table 2. Translation Results of the MHC-SF Measuring Instrument

Dimension	No. Item	Source Item	Translated Item
	Instruction	In the past month, how often did you feel	Dalam 1 bulan terakhir, seberapa sering Anda merasa:
Emotional Well-Being	1.	Happy	Bahagia
	2.	Interested in life	Tertarik dengan kehidupan
	3.	Satisfied	Puas
	4.	That you liked most parts of your personality	Menerima diri sendiri apa adanya
	5.	Good at managing the responsibilities of your daily	Bertanggung jawab dalam kehidupan sehari-hari dengan baik
	6.	That you had warm and trusting relationships with others Good at managing the responsibilities of your daily	Memiliki hubungan yang hangat dan saling percaya dengan orang lain
Psychological Well-Being	7.	That you have experiences that challenge you to grow and become a better person	Memiliki pengalaman yang membuat Anda tertantang untuk berkembang dan menjadi orang yang lebih baik
	8.	Confident to think or express your own ideas and opinions	Percaya diri dalam mengemukakan ide dan pendapat
	9.	That your life has a sense of direction or meaning to it	Memiliki tujuan hidup
	10.	That you had something important to contribute to society	Memiliki sesuatu yang bisa bermanfaat untuk lingkungan masyarakat
	11	That you belonged to a community (like a social group, your neighborhood, your city)	Merasa bagian dari sebuah kelompok masyarakat (karang taruna, kompleks rumah, dsb)
Social Well-Being	12.	That our society is becoming a better place for people	Lingkungan sekitar Anda semakin berkembang menjadi tempat yang lebih layak
	13.	That people are basically good	Bahwa setiap orang pada dasarnya baik
	14.	That we way our society works makes sense to you	Bisa memahami dunia bekerja

Table 3. The Results of Goodness of Fit

Parameter fit Chi Square	Criteria p-value ≥ .05	Results .001	Note Fit/Not
Root Mean Square error of approximation (RMSEA)	> .05	.048	Fit
Goodness of Fit Index (GFI)	> .95	.988	Fit
Comparative fit Index (CFI)	> .95	.972	Fit
Incremental Fit Index (IFI)	> .95	.972	Fit

Procedures

The procedure for adapting this measuring instrument is following the ITC Guidelines for Adapting Test which consists of several steps: forward translation, backward translation, synthesis, peer-review, content validity testing, construct validity testing, and reliability testing. Forward and backward translation involved four people with suitable qualifications in English, as shown by a minimum EILTS English language certificate of 6.5 and a minimum TOEFL of 550. After that, the synthesis process was completed by the researcher. Next, the peer review involved six psychology graduate students undergoing clinical psychology master's education. Furthermore, content validity is measured using the opinions of experts consisting of two clinical psychologists and one doctor in the field of developmental psychology, while the analysis used in testing construct validity was

measured using confirmatory factor analysis (CFA). The reliability used in this study was the reliability of Cronbach's alpha coefficient. This type of reliability was used because the reliability of the alpha coefficient is obtained from a single administration and is based on examining the performance of each question (De Boeck, 2017). The construct validity test uses the JASP application, while the reliability test uses SPSS.

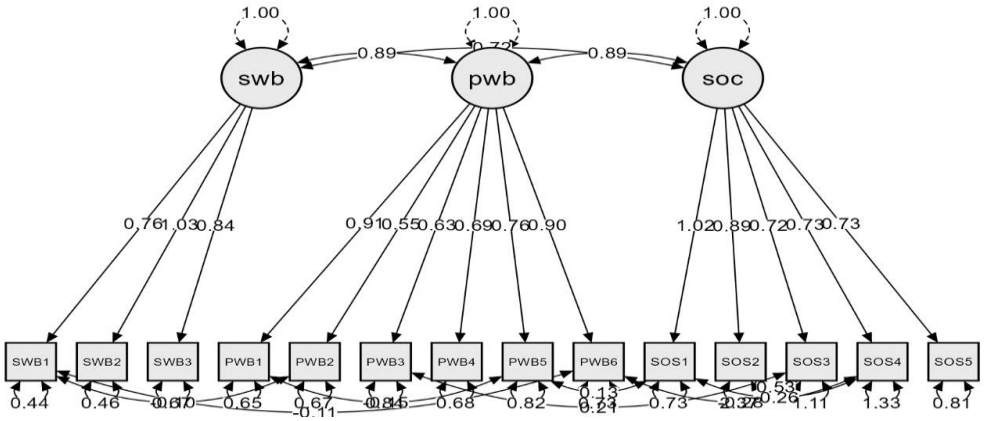

Figure 1. CFA MHC-SF

RESULTS AND DISCUSSION

Results

Content validity was verified by asking the opinion of three experts: 2 clinical psychologists and one doctoral in development. The three experts have educational backgrounds and practical experience that support and contribute to mental health activities. The verification is conducted through a rational and logical review process on several aspects of the test, such as the relevance, importance, and clarity of the items representing the construct. The study was carried out theoretically and following Indonesian culture. In addition to providing ratings for these three aspects, a panel discussion was also conducted to discuss the suitability of the item based on the desired population goals. An item is considered valid if at least 50% of the experts agree that the item is essential (Robinson, 2018). Based on the judgments of the experts invited in this study, we came to the conclusion that the content validity is relevant to the content of the adapted test. This indicates that the content validity of this measuring instrument has been met. Even though it was verified, there were some inputs that we followed up on, such as revising the wording of some items to obtain meanings that the target population could clearly understand. Translation Results can be seen in table 2.

Furthermore, the measuring instrument is tested for its construct validity using confirmatory Factor Analysis (CFA). The MHC-SF measurement tool is distributed online to the student population. As many as 280 questionnaires were collected, but only 256 could be used. The CFA test is a structural modeling type that explicitly relates the observed indicators to the construct or its latent variable (P. Wood, 2008). The model test is first-order by referring to the research results from Perugini et al. (2017), which compares various models that fit the MHC-SF measuring instrument. The results concluded that the three-factor structure is the most suitable for this measuring instrument.

The first step is to observe the goodness or badness of fit. The result shows that a model that is fit and has criteria with the highest score is the first-order model in which the three dimensions have their respective total scores. The Results of Goodness of Fit can be seen in table 3.

After finding the goodness or badness of fit that fits the criteria. The next step of the CFA is to look at the factor loading between items/indicators and dimensions/factors. According to Hair et al. (2019), the minimum factor loading should be .5 to be considered significant. The factor loading

values for each item are presented in the table below. The results show that all items have a value of > .5, indicating that all items are considered a good fit. Based on these two pieces of evidence, the MHC-SF measuring instrument is considered to follow the criteria of meeting construct validity, can be seen in table 4 and figure 1.

The reliability test was carried out using the reliability of the Cronbach's alpha coefficient, which is a generalization of the Kuder-Richardson formula (Vaske et al., 2017) stated that an alpha coefficient value of .65 to .80 is considered adequate for measuring tools used in human dimensions research. The reliability results show that the alpha coefficient for SWB is .811; PWB is .809; and Social is .729. Therefore, the reliability value of the MHC-SF measuring instrument can be considered reasonable based on previous studies which found reliability results were in the range of .7 - .8 in the Italian version (Petrillo et al., 2015), Dutch version adolescent (Kennes et al., 2020), Serbian version (Joshanloo & Jovanović, 2017), and English Canadian version (Orpana et al., 2017).

Discussion

Mental Health Continuum or MHC is a measurement tool to know and measure mental health with a positive approach (C. L. M. Keyes, 2002; C. L. M. Keyes et al., 2008) or what is known as well-being. The short MHC format is called MHC-SF, consisting of 14 items. This research was conducted to adapt the MHC-SF measuring instrument in the Indonesian version and carry out a psychometric evaluation so that this measuring tool can be valid and reliable. Systematic adaptation procedures involving experts are carried out to support the translation results, which are carried out by translators who have a basis in the field of Psychology.

We performed various validity verifications, including content validity and construct validity. Content validity was applied to determine the item's relevance to the measuring instrument. In contrast, construct validity was applied to prove psychometrically that the MHC-SF measuring instrument possesses good validity and reliability. The results of the two validity tests confirm that the Indonesian version of the MHC-SF measuring instrument is fit for measuring well-being. Furthermore, the data in this study indicate that the three-factor structure, reflecting emotional well-being, psychological well-being, and social well-being, is declared fit. Similar structures were found in previous studies, such as in South Korea (Lim, 2014), Italy (Petrillo et al., 2015), Poland (Karaś et al., 2014), South Africa (C. L. M. Keyes et al., 2008), France (Salama-Younes & Ismaïl, 2011). The factor loading values for all items are in the range that meets the criteria, and so is the fit indicator for the

Table 4. Construct Validity

Dimension	No. Item	Factor loading	Corrected Total-Item Correlation	Reliability
SWB	1	0.754	0.641	0.811
	2	0.835	0.725	
	3	0.717	0.633	
PWB	4	0.750	.596	0.809
	5	0.559	.552	
	6	0.564	.480	
	7	0.645	.598	
	8	0.644	.552	
	9	0.727	.640	
SOCIAL	10	0.766	.549	0.729
	11	0.501	.515	
	12	0.566	.569	
	13	0.533	.403	
	14	0.632	.455	

CFA model. Furthermore, MHC-SF shows good internal consistency, as indicated by the alpha coefficient value that meets the standard.

This study aimed to result in the MHC-SF Indonesia versión adapted by following the ITC Guidelines for Adapting Test procedures. Nonetheless, some of the limitations of this study are that the data collection was only conducted using students, and the sample selection was conducted using a non-probability sampling technique, resulting in unequal opportunities for individuals in Indonesia to become research participants. Thus, it reduces the external validity of the study. We recommend future research to take participants with a broader age range representing adults to obtain more substantial evidence that MHC-SF applies to various age ranges.

Implications

The findings of this study have several implications for practice, research, and policy. Firstly, the results provide evidence for the validity and reliability of the MHC-SF as a measuring instrument for well-being in Indonesian adolescents. This is important as it provides mental health practitioners with a new and culturally appropriate tool for assessing the well-being of Indonesian adolescents. Furthermore, the study's results support the use of the three-factor structure of well-being, which is consistent with previous research. These findings are significant as they highlight the importance of considering emotional, psychological, and social well-being in the assessment of mental health. Additionally, the study's results contribute to the development of well-being research in Indonesia and provide a foundation for future research in this area. Finally, the study's results could be used to inform the development of mental health policies in Indonesia, aimed at promoting well-being and addressing the mental health needs of its adolescents.

Limitation and Suggestions

One of the limitations of this study is the limited sample size. The sample size consisted of only 256 students, which may not be representative of the entire population of Indonesian adolescents. Moreover, the sample was not randomly selected, and therefore, the results may not be generalizable to other populations. Future research could benefit from a larger, more representative sample, to enhance the generalizability of the results. Additionally, it would be valuable to consider cultural and demographic factors that may impact well-being, such as socio-economic status and religion, in future research.

CONCLUSION

In conclusion, the Indonesian version of the MHC-SF measuring instrument adaptation and its psychometric evaluation are confirmed to be valid and reliable for the three-factor model, reflecting emotional well-being, psychological well-being, and social well-being. This measuring instrument has been proven to be one of the alternatives of measuring tools to assess an individual's well-being or mental health.

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AUTHOR CONTRIBUTION STATEMENT

All authors have read and approved the final version of the manuscript.

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