

## Validation of the Health Consciousness Scale for Indonesian University Students: An examination of psychometric properties using confirmatory factor analysis

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**ABSTRACT:** Students are a vulnerable group at risk of health issues stemming from lifestyle changes, academic pressure, and low self-health consciousness. The lack of a specific health consciousness measurement tool for Indonesian students necessitates the development of a valid and reliable instrument. This study aimed to adapt and assess the psychometric properties of the Health Consciousness Scale (HCS) for Indonesian students. The adaptation process, involving cultural adaptation, followed the guidelines of Beaton et al. (2000), including forward translation, synthesis, backward translation, and readability testing. Psychometric testing involved assessing content validity (using the Aiken method), construct validity, and reliability. A total of 524 students were selected using convenience sampling. The Indonesian version of the HCS (HCS-ID) demonstrated strong psychometric properties, with a content validity index of 0.87–1.00, confirmatory factor analysis results (RMSEA 0.0871, SRMR 0.043, CFI 0.943, NFI 0.919), item discrimination of 0.486–0.667, and Cronbach's Alpha of 0.860. HCS-ID is a valid and reliable instrument for assessing student health consciousness, supporting efforts to understand student health conditions and develop targeted interventions.

**KEYWORDS:** University student, Health Consciousness, Instrumen Adaptation, Validity, Reliability

### INTRODUCTION

Health is a state of comprehensive well-being encompassing physical, mental, and social dimensions and is devoid of signs of sickness or incapacity (Boorse, 2011). Health is a dynamic process characterized by ongoing interaction and adaptation between the organism and its environment (Menatti et al., 2022). This dynamic process involves a healthy lifestyle that seeks to avert sickness and enhance health by concentrating on nutrition, physical activity, sleep habits, and mental well-being. However, healthy lifestyles can be influenced by various factors, including age, heredity, environment, medical history, alcohol use, and poor dietary habits (Kankaanpää et al., 2022).

The World Health Organisation (WHO) states that age is an important factor influencing lifestyle. The productive age of persons typically commences between 15 to 64 years (World Health Organization, 2024). This age range denotes when individuals possess the physical, mental, and social capabilities to engage in productive activities. Many individuals pursue education at a formative age, by enrolling as students for instance. Students evolve into agents of change, necessitating the development of persons capable of offering answers to the challenges encountered in their surroundings (Rustya & Akhmad Zaini, 2020). According to data from the Central Statistics Agency (BPS), in 2023, there were 7.8 million active students, comprising 3.3 million at public universities and 4.4 million at private institutions. Millions in private universities. Students in a productive age frequently encounter academic, social, economic, and health obstacles (Moore et al., 2021).

The academic strain experienced by students is exacerbated by gender disparities and sociocultural influences, leading to an environment susceptible to stress and precipitating numerous physical and mental health issues (Batabyal et al., 2021; Brady, 2020; Moore et al., 2021). The stress levels in students constitute a multidimensional phenomenon, encompassing psychological, biological, lifestyle, social, and financial dimensions that mutually influence student well-being (Mofatteh, 2021). Stress poses a risk that can diminish student well-being. Stress arises when an organism's adaptive capacity fails to align with environmental demands, leading to physical and psychological diseases (Asif et al., 2020). Stress adversely affects long-term health, leading to depression and elevating the risk of cardiovascular disease (Saeed et al., 2021). Consequently, suitable interventions are required to mitigate stress, including time management, stress management techniques, self-regulation, and heightened awareness of health urgency (Yadav et al., 2023)

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Health awareness refers to an individual's comprehension of sustaining physical and mental wellbeing. As described by Gould (1990). Health awareness has multiple dimensions, including knowledge, attitude, and behavior, and can be articulated daily. Individuals possessing substantial health information will motivate themselves to embrace a healthy lifestyle. Enhancing students' health awareness can be accomplished through a multifaceted strategy incorporating health education, experiential learning, healthy living practices, routine health assessments, and effective stress management (Kris-Etherton et al., 2021). Nonetheless, comprehending the degree to which students recognize the significance of health and implement it in their everyday routines requires a scientific methodology with rigorous and standardized assessments. In numerous instances, the context of health awareness is assessed using non-standardized methodologies. Consequently, this research aimed to develop a valid, reliable, and standardized Indonesian version of the measurement instrument.

The measurement of students' health awareness level is conducted using psychometric scales. The scale is utilized for preliminary screening, identifying risk factors, evaluating health development, and assessing intervention efficacy. Psychometric assessments with a health awareness scale seek to evaluate students' comprehension and health behaviors. The Health Consciousness Scale, established by Gould in 1990, aims to assess individual knowledge and comprehension of health issues. Health awareness comprises four components: healthiness, health involvement, health alertness, and health self-monitoring. Before employing the scale in a study, an adaptation process that considers cultural and linguistic contexts is necessary to ensure the research instrument possesses sufficient reliability and validity compared to the original scale (Borsa, 2012). Study employed a cross-cultural adaptation procedure to prevent research bias by modifying the research instrument to align with the relevant cultural context, research environment, and language (Gjersing et al., 2010). The scale adaption process in research conserved time relative to creating a novel scale construct. Accuracy is essential in the translation and data collection phases to ensure that the adapted scale accurately reflects the same concept within a cultural context.

This study implemented adaptation processes for the health awareness scale and conducted statistical analysis to verify the validity and reliability of the modified scale. The self-report approach on the health awareness scale can better represent students' comprehension and disposition regarding their health. The adaptation of HCS measurement instruments is crucial because of the scarcity and poor standardization of existing measures that accurately assess the same constructs. This project adapted the health consciousness scale into the Indonesian language and undertakes a psychometric evaluation

## METHOD

### Research Design

This study employed a quantitative research design. According to Azwar (2017), quantitative research involves the collection and analysis of numerical data using statistical procedures. The primary objective of this study was to evaluate the validity and reliability of the Indonesian adaptation of the Health Consciousness Scale (HCS). The study was conducted in two phases. Phase 1 focused on the cross-cultural adaptation of the instrument based on the framework proposed by Beaton et al. (2000), whereas Phase 2 involved psychometric evaluation to examine the construct validity and reliability of the adapted instrument. A convenience sampling technique was employed, whereby participants were selected based on their accessibility (Sugiyono, 2021).

The Health Consciousness Scale (HCS), originally developed by Gould (1990), is a self-report instrument designed to assess individuals' awareness, attention, and involvement regarding their own health. The instrument consists of four dimensions, namely Health Self-Consciousness, Health Involvement, Health Alertness, and Health Self-Monitoring, with responses measured using a five-point Likert scale. When completing the HCS, participants were instructed to select the response that best described their current condition for each item. The original instrument employs a five-point Likert-type response format ranging from 0 (*statement does not describe you at all*) to 4 (*statement describes you very well*). Participants were asked to choose one response for each item that most accurately reflected themselves. Higher total scores indicate greater levels of health consciousness. Because the original instrument was developed in a different linguistic and cultural context, cross-cultural adaptation was required before its application in Indonesia. Cross-cultural adaptation is a methodological process undertaken when applying measurement instruments across different cultures, countries, and languages to ensure conceptual, semantic, idiomatic, experiential, and cultural equivalence (Arafat et al., 2016; Zhao et al., 2024). Accordingly, the HCS was culturally adapted into Indonesian (HCS-ID) before undergoing psychometric evaluation.

The adaptation process followed the cross-cultural adaptation guidelines proposed by Beaton et al. (2000), consisting of six stages: (1) Forward Translation, (2) Synthesis, (3) Back Translation, (4) Expert Committee Review, (5) Pretesting, and (6) Submission. In the present study, the procedure was slightly modified by incorporating an initial preparation stage and psychometric evaluation. The scale adaptation process followed several sequential stages. Initially, permission to use the original

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instrument was obtained from the copyright holder. During the preparation stage, experts familiar with the health consciousness construct and the Indonesian cultural context were consulted to evaluate the relevance of the items and minimize potential cultural and linguistic bias. Forward translation was then carried out independently by two bilingual translators, one with a psychology background and one without, to ensure both conceptual accuracy and natural language use. The translated versions were subsequently synthesized into a single Indonesian version through discussion and consensus with the research team.

The synthesized version was then back-translated into English by two independent translators who were blinded to the original instrument to ensure semantic equivalence. Subsequently, an expert committee consisting of psychologists, linguists, and public health experts reviewed all versions to evaluate semantic, idiomatic, experiential, and conceptual equivalence, resulting in a pre-final version of the HCS-ID. The pre-final instrument was then pretested among the target population to assess the clarity, comprehensibility, and cultural relevance of the items. Feedback obtained during this stage was used to refine the instrument before psychometric evaluation.

The psychometric evaluation included content validity, item discrimination, construct validity using CFA, and internal consistency reliability. Standardized factor loadings were examined to determine the contribution of each indicator to its corresponding latent construct. Factor loadings of 0.50 or higher were considered acceptable, although values of 0.40 may be retained depending on the sample size and model complexity (Hair et al., 2010; Kline, 2011). Model fit was evaluated using several goodness-of-fit indices, including the Root Mean Square Error of Approximation (RMSEA < 0.08), Standardized Root Mean Square Residual (SRMR < 0.08), Comparative Fit Index (CFI > 0.90), Normed Fit Index (NFI > 0.90), and the chi-square to degrees-of-freedom ratio ( $\chi^2/df$  < 3.00), indicating an acceptable fit between the proposed model and the observed data (Steiger, 1998; Bentler, 1990; Savalei & Bentler, 2006; Kline, 2011; Sarmento & Costa, 2019).

Construct validity refers to the extent to which an instrument accurately measures the theoretical construct it is intended to assess (Kimberlin & Winterstein, 2008). Construct validation generally begins by examining the relationships among variables and subsequently evaluating the underlying measurement structure using statistical techniques (Kim, 2009). Among the available approaches, factor analysis is one of the most widely used methods for evaluating construct validity because it examines the relationships among observed variables and determines whether they adequately represent the intended latent construct (Cronbach & Meehl, 1955; Allen & Yen, 1979; Wang & Ahmed, 2004). Factor analysis generally consists of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Sarmento & Costa, 2019). Since the theoretical structure of the Health Consciousness Scale has been established in previous studies, the present study employed Confirmatory Factor Analysis (CFA) to examine the construct validity of the Indonesian version of the instrument (Hair et al., 2010; Williams et al., 2010).

### Participants

| No | Participants Classification | Description     | N          | Percentage  |
|----|-----------------------------|-----------------|------------|-------------|
| 1  | Gender                      | Male            | 222        | 42,4%       |
|    |                             | Female          | 302        | 57,6%       |
|    |                             | <b>Total</b>    | <b>524</b> | <b>100%</b> |
| 2  | Age                         | 17-22           | 311        | 59,4%       |
|    |                             | 23-28           | 186        | 35,5%       |
|    |                             | 29-34           | 18         | 3,4%        |
|    |                             | 35-40           | 5          | 1,0%        |
|    |                             | 41-45           | 2          | 0,4%        |
|    |                             | 46-51           | 2          | 0,4%        |
|    |                             | <b>Total</b>    | <b>524</b> | <b>100%</b> |
| 3  | Educational Background      | Diploma         | 35         | 6,7%        |
|    |                             | Undergraduate   | 419        | 80%         |
|    |                             | Master's degree | 70         | 13,4%       |
|    |                             | <b>Total</b>    | <b>524</b> | <b>100%</b> |
| 4  | Region of Origin            | Papua           | 163        | 31,1%       |
|    |                             | Kalimantan      | 45         | 8,6%        |
|    |                             | Jawa            | 134        | 25,6%       |
|    |                             | Sulawesi        | 52         | 9,9%        |
|    |                             | Sumatra         | 41         | 7,8%        |
|    |                             | Maluku          | 34         | 6,5%        |
|    |                             |                 |            |             |

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|                         |            |             |
|-------------------------|------------|-------------|
| Kepulauan Nusa Tenggara | 49         | 9,4%        |
| Bali                    | 6          | 1,1%        |
| <b>Total</b>            | <b>524</b> | <b>100%</b> |

Participants were recruited using a non-probability convenience sampling technique, whereby respondents were selected based on their accessibility (Sugiyono, 2021). A total of 524 university students from various universities across Indonesia voluntarily participated in this study. Participants ranged in age from 17 to 46 years.

524 Of the total participants, 302 (57.6%) were female and 222 (42.4%) were male. The majority of participants were between 17 and 22 years old (59.4%), followed by those aged 23–28 years (35.5%). Smaller proportions were aged 29–34 years (3.4%), 35–40 years (1.0%), 41–45 years (0.4%), and 46–51 years (0.4%).

Regarding educational level, most participants were undergraduate students (Bachelor's degree; 80.0%), followed by master's students (13.4%) and diploma students (6.7%). Geographically, participants represented several regions of Indonesia, with the largest proportion originating from Papua (31.1%), followed by Java (25.6%), Sulawesi (9.9%), Nusa Tenggara (9.4%), Kalimantan (8.6%), Sumatra (7.8%), the Maluku Islands (6.5%), and Bali (1.1%). Detailed demographic characteristics of the participants are presented in Table 1.

The sample size was considered adequate for psychometric evaluation, particularly confirmatory factor analysis (CFA). Sarmiento and Costa (2019) recommended a minimum sample size of five to ten participants per observed indicator to obtain stable parameter estimates. Given that the HCS consists of nine observed items, the total sample of 524 participants exceeded the recommended minimum and was therefore considered sufficient for the subsequent psychometric analyses.

## RESULT

### Cross cultural adaptation

The results obtained from the forward and backward translation procedures, followed by comparability–similarity evaluation and content validity assessment conducted by experts, resulted in a finalized Indonesian adaptation of the Health Consciousness Scale. Hereafter, the adapted instrument is referred to as the Health Consciousness Scale Indonesian version (HCS-ID) throughout this study. A summary of these adapted items is presented in Table 2. The finalized version of the HCS-ID consisted of adapted items derived through the translation and expert review process. It should be noted that the items presented in Table 2 represent selected samples for illustrative purposes. Following the finalization of the adapted scale, the study proceeded with content validity evaluation.

The content validity testing of the Health Consciousness Scale Indonesian version (HCS-ID) involved a panel of five experts: two psychologists, two health professionals, and one linguist. These experts evaluated the relevance and representativeness of each item in relation to the construct of health consciousness. The evaluation employed Aiken's V formula (Aiken, 1985), which quantifies the degree of expert agreement regarding the content validity of each item. This stage was conducted to ensure that the adapted instrument adequately reflected the conceptual meaning of health consciousness while remaining culturally appropriate for the Indonesian student population.

The results of the content validity assessment demonstrated a high level of agreement among the experts. All nine items achieved Aiken's V values above the recommended threshold of .80, with values ranging from .87 to 1.00 and an overall average Aiken's V value of .94. Three items obtained a perfect agreement score of 1.00, indicating unanimous expert judgment regarding their relevance to the health consciousness construct. These findings suggest that the translated items were considered both relevant and representative of the intended construct, supporting the conceptual equivalence and cultural appropriateness of the HCS-ID. Furthermore, the establishment of strong content validity provides a solid foundation for subsequent psychometric evaluations, including confirmatory factor analysis, construct validity, and reliability testing, thereby strengthening the overall measurement quality of the HCS-ID.

| No | Health Consciousness Scale (HCS) (original scale)            | Health Consciousness Scale (Modified Version) | Health Consciousness Scale (Indonesian Version; HCS-ID)       |
|----|--------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------|
| 1  | I reflect about my health a lot                              | I repeatedly reflect on my health condition   | Saya sering melakukan refleksi tentang kondisi kesehatan saya |
| 3  | I am generally attentive to my inner feeling about my health | I'm generally aware of my body's signals      | Saya cenderung memperhatikan perasaan                         |

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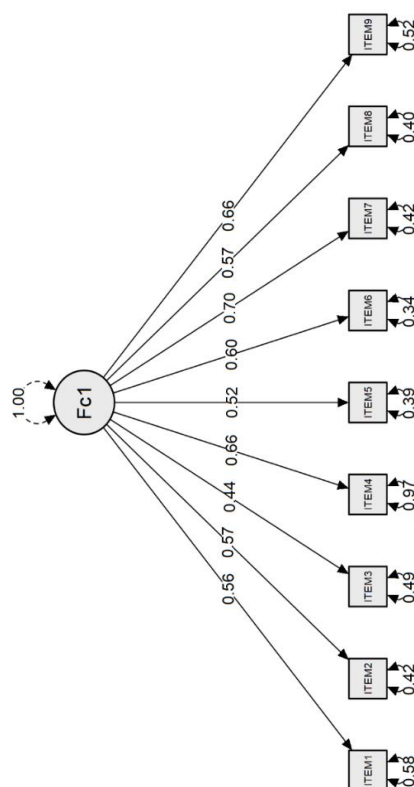
|   |                                                              |                                                            |                                                           |
|---|--------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|
|   |                                                              |                                                            | tidak nyaman pada tubuh saya                              |
| 7 | I am aware of the state of my health as I go through the day | I recognize changes in my health condition from day to day | Saya menyadari akan kondisi kesehatan saya sepanjang hari |
| 9 | I am very involved with my health                            | I actively participate in maintaining my health            | Saya berperan aktif untuk menjaga kesehatan saya          |

Following the content validity assessment, the readability of the HCS-ID was examined to determine whether the adapted items could be clearly understood by the intended respondents. The findings indicated an excellent level of readability, with an average score of 2.92 out of a maximum possible score of 3.00. All participants reported that the wording of the items was clear and comprehensible and did not recommend any revisions or additional modifications. These results suggest that the HCS-ID was linguistically appropriate and ready to be administered in the primary data collection.

The cross-cultural adaptation process was carried out according to the recommendations of Beaton et al. (2000), including preparation, forward translation, synthesis of the translated versions, backward translation, expert committee evaluation, pre-testing, and instrument finalization. Throughout this process, no major conceptual or semantic discrepancies were identified between the original and adapted versions. Nevertheless, several minor revisions related to grammar, sentence structure, and word choice were introduced to improve readability and ensure compatibility with the linguistic characteristics of Indonesian university students. Overall, the adaptation addressed linguistic equivalence, population suitability, and cultural relevance, as suggested by Ambuehl and Inauen (2022), thereby preserving the conceptual integrity of the original Health Consciousness Scale while ensuring its applicability within the Indonesian context.

## Construct Validity

In this study, a reliability test was conducted using SPSS software via the reliability analysis menu. The analysis yielded a reliability coefficient of 0.860. This coefficient meets the established standard of being above 0.80. Full calculation results are provided in the appendix.



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| No | Indikator CFA        | Nilai  | Nilai Rekomendasi |
|----|----------------------|--------|-------------------|
| 1  | <i>Chi-Square/df</i> | 134,4  | <3.0              |
| 2  | RMSEA                | 0,0871 | ≤0,05 - 0,08      |
| 3  | CFI                  | 0,934  | >0,90             |
| 4  | GFI                  | 0,945  | >0,90             |
| 5  | SRMR                 | 0,043  | <0,8              |
| 6  | NFI                  | 0,919  | >0,90             |
| 7  | TLI                  | 0,912  | >0,80             |

Construct validity testing was conducted in stages, beginning with the Kaiser-Meyer-Olkin (KMO) test to assess sample adequacy and data suitability prior to confirmatory factor analysis. With a KMO value of 0.896, the data were deemed suitable for further analysis. Bartlett's Test of Sphericity yielded a result of  $< 0.001$ , also meeting the requirements and indicating that the data were ready for analysis.

Subsequently, confirmatory factor analysis (CFA) was performed by evaluating factor loadings and model fit. The results showed that all items had factor loadings above 0.4; Item 7 had the highest loading at 0.704, while Item 3 had the lowest at 0.441. Overall, factor loadings ranged from 0.441 to 0.704.

Model fit analysis was also conducted using several indices, such as Chi-square/df, RMSEA, CFI, GFI, SRMR, NFI, and TLI. The analysis results indicated a good model fit. The Chi-square/df value was 134; although the RMSEA of 0.0871 fell within the acceptable range, the CFI (0.934), GFI (0.945), and NFI (0.919) values exceeded 0.90, indicating excellent model fit. The SRMR and TLI values also supported these fit criteria (Bentler, 1990; Sarmiento & Costa, 2019; Savalei & Bentler, 2006).

## DISCUSSION

However, as there is currently no specific measurement instrument available to assess the health consciousness of university students in Indonesia, the development of a valid and reliable measurement tool is required. This study aims to adapt the Health Consciousness Scale (HCS) for university students in Indonesia and evaluate its psychometric properties.

The analysis results indicate that the Indonesian version of the Health Consciousness Scale (HCS-ID) possesses sound psychometric properties, with a content validity index of 0.87–1.00, confirmatory factor analysis results (RMSEA = 0.0871, SRMR = 0.043, CFI = 0.943, NFI = 0.919), item discrimination indices ranging from 0.486 to 0.667, and a Cronbach's alpha reliability coefficient of 0.860. Thus, the HCS-ID is a valid and reliable instrument for measuring health consciousness among Indonesian university students.

### Construct Validity

The initial stage of construct validity testing involved the Kaiser-Meyer-Olkin (KMO) test to evaluate sample size and data suitability for further analysis. The KMO Measure of Sampling Adequacy in this study yielded a value of 0.896, meeting Kaiser's (1974) minimum standard of  $> 0.5$ . Additionally, the Bartlett's Test of Sphericity showed a significance value (Sig.) of less than 0.05, with a Chi-square of 1652.5 and 36 degrees of freedom (df), resulting in a significant p-value ( $p < 0.001$ ).

This indicates that the sample size and data suitability are appropriate for confirmatory factor analysis. Confirmatory factor analysis is conducted as part of the assessment of construct validity, aiming to demonstrate that measurement results derived from the statement items correlate with the theoretical construct upon which the measurement instrument is based (Azwar, 2022).

Furthermore, confirmatory factor analysis aims to test the consistency of grouping statement items into factors previously formulated in earlier research (Azwar, 2022). In this study, the results of the confirmatory analysis are evaluated based on several criteria. However, the chi-square value increases with sample size because the data statistic is calculated based on between-group variance and involves a function of the total sample size. Additionally, with larger sample sizes, variance estimates become more accurate, rendering the test more sensitive to minor differences in between-group variance (Thaseen & Kumar, 2017). Therefore, the assessment of the confirmatory analysis also considers other indicators such as RMSEA, TLI, GFI, SRMR, CFI, and NFI (Costa & Sarmiento, 2019).

This value is influenced by model complexity—such as the number of latent factors and indicators, inter-factor relationships, and intricate model structures—which often leads to higher RMSEA values due to the increased number of parameters requiring estimation (Groskurth et al.). According to research by Kenny et al. (2015), an RMSEA value below 0.08 is generally interpreted as indicating a reasonable model fit; however, this threshold is subjective and can lead to inaccurate interpretations, particularly in

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models with low degrees of freedom. Consequently, it is advisable to consider confidence intervals and additional parameter analyses to obtain a more comprehensive evaluation of model fit.

Therefore, in CFA analysis, RMSEA cannot be evaluated in isolation but must be considered alongside other fit indices. In this study, other indices—such as CFI (0.934), GFI (0.945), NFI (0.919), and TLI (0.912)—exceeded the recommended threshold of  $>0.90$ , while the SRMR was 0.043 (below 0.08). Based on the analysis results, these indicators met the standards (referencing Costa & Sarmiento, 2019).

Factor loading is a crucial aspect to consider in Confirmatory Factor Analysis (CFA), as it indicates the extent to which each indicator contributes to the measured latent variable (Hair et al.). The highest factor loading was observed for Item 7 (0.704), while the lowest was for Item 3 (0.441); thus, it can be concluded that all items correlate with the health consciousness construct.

Regarding the development of the health consciousness instrument (Czech Republic version), the researchers obtained favorable model fit indicators: RMSEA (0.028), SRMR (0.010), GFI (0.993), CFI (0.998), TLI (0.996), and NFI (0.995). All model fit indicators exceeded the recommended thresholds, demonstrating an excellent model fit.

This aligns with the test results for the original instrument developed by Gould (1990), which showed a Goodness-of-Fit Index of 0.955 for the first-order factor model and 0.946 for the second-order factor model.

The development of the Health Consciousness Scale–Germany (HCS-G) by Marsall et al. (2021) identified a two-factor model as a strong model, as it demonstrated a better fit compared to other models; this was supported by indicators such as an RMSEA of 0.089, which falls within the acceptable range. Additionally, an SRMR of 0.038 indicates a low level of error. Other fit indices, such as a CFI of 0.950 and a TLI of 0.907, indicate a good model fit with the data.

### **IMPLICATIONS AND LIMITATIONS**

The findings of this study have both theoretical and practical implications. Theoretically, this study successfully adapted and examined the psychometric properties of the Health Consciousness Scale into the Indonesian version (HCS-ID), thereby enriching the literature on health consciousness measurement within the Indonesian cultural context and providing a standardized instrument for future research examining health-related behaviors. Practically, HCS-ID can be utilized by researchers, educational institutions, and health professionals to assess the level of health consciousness among university students, which may support the development of more targeted health promotion and disease prevention programs.

However, this study has several limitations. First, the generalizability of the findings is limited as the sample was drawn exclusively from university students in a specific region. Second, the cross-sectional design of this study did not allow for the examination of temporal stability through test-retest reliability. Third, the RMSEA value of 0.0871 falls within the acceptable fit category, indicating that the measurement model could be further refined. Fourth, this study did not examine the criterion validity of HCS-ID in relation to other instruments measuring similar constructs. Therefore, future studies are recommended to test HCS-ID on more diverse populations, conduct test-retest reliability analysis, and examine convergent and discriminant validity with related variables.

### **CONCLUSION**

Based on cultural adaptation and psychometric testing, the Indonesian version of the Health Consciousness Scale (HCS-ID) was developed. The adaptation process involved forward translation, synthesis, backward translation, review of backward translation, and readability testing. The results of psychometric testing indicated that HCS-ID has adequate validity and reliability. Content validity ranged from 0.87 to 1.00. Construct validity was supported by confirmatory factor analysis with model fit indices of RMSEA = 0.0871, SRMR = 0.043, CFI = 0.943, TLI = 0.912, NFI = 0.919, and factor loadings ranging from 0.441 to 0.704. Item discrimination values ranged from 0.486 to 0.667, and reliability with Cronbach's Alpha was 0.860. Therefore, HCS-ID can be used to measure health consciousness among university students in Indonesia.

### **SUGESSTION**

Based on the findings and limitations of this study, several recommendations are proposed. First, future researchers are encouraged to test HCS-ID on more diverse populations across different age groups, educational backgrounds, and geographical regions in Indonesia to enhance the generalizability of the instrument. Second, a test-retest reliability analysis should be conducted to examine the temporal stability of HCS-ID. Third, it is recommended to examine the convergent and discriminant validity of HCS-ID by correlating it with other instruments measuring related constructs such as health literacy and health behavior. Fourth, for educational institutions and health service providers, HCS-ID can be used as an initial screening tool to identify students

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with low health consciousness so that targeted health promotion interventions can be designed. Thus, HCS-ID is expected to contribute to both research and health practice in Indonesia.

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