THE RASCH ANALYSIS OF PERCEIVED WELLNESS SURVEY FOR SENIOR HIGH SCHOOL STUDENTS IN INDONESIA

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ABSTRACT

A measurement tool for the well-being of high school students in Indonesia is needed. This study aims to adapt and test the psychometric properties of the Perceived Wellness Survey Full Length (PWS-FL) and the new Perceived Wellness Survey Short Form (PWS-SF) for high school students within the Indonesian cultural context. The study is quantitative, employing the Rasch model. The sampling method used is purposive sampling, involving 360 high school students. The study instruments used are the Perceived Wellness Survey Full Length (PWS-FL) and the new Perceived Wellness Survey Short Form (PWS-SF). The results of the study show that the PWS-FL and PWS-SF are valid and reliable using the Rasch model. The data obtained with these instruments can be used as a basis for developing guidance and counseling programs to enhance the well-being of high school students.

Keywords: assessment, mental health, perceived wellness survey, rasch analysis, wellness

INTRODUCTION

Every human being has goals and desires for a healthy life from various dimensions (wellness). This is a significant issue and paradigm for future counseling but is often overlooked in the preparation standards and codes of ethics for counselors (Brubaker & Sweeney, 2022). Conversely, the Covid-19 pandemic and its aftermath introduced rapid changes full of uncertainty, resulting in an ecological disaster that had a profound impact on anxiety, social isolation, loneliness, stress, depression, disruption of wellness and well-being, death, economic decline, and the overall order of human life worldwide (Nikolis, Wakim, Adams, & Do, 2021).

Managing Covid-19 cases must focus not only on physical recovery but also on addressing psychological conditions and problems, especially wellness and well-being. Learners have identified mental health as more important than physical health (Cass et al., 2021). However, mental health has not received adequate attention from the government (Budianti et al., 2018) or serious consideration from researchers. Schools have not demonstrated sufficient capacity or motivation to enhance the wellness of students and their parents during the COVID-

19 pandemic (Calvert, Lane, McQuilkin, Wenner, & Turner, 2022). Indeed, since 1947, the World Health Organization (WHO) has defined health as a holistic concept, encompassing more than just the absence of disease or illness. In 1964, WHO emphasized that optimal health includes physical, mental, and social dimensions, as well as happiness, rather than merely the absence of negative elements such as illness or weakness (Anspaugh, Hamrick, & Rosato, 2011). According to the theory of Perceived Wellness, health is holistic and multidimensional, including psychological, emotional, social, physical, spiritual, and intellectual aspects (Adams, Bezner, & Steinhardt, 1997; Adams T. B., Bezner, Drabbs, Zambarano, & Steinhardt, 2000).

Empirical studies indicate that the wellness dimensions—including intellectual, social, spiritual, emotional, physical, and psychological health—of the millennial generation are generally quite healthy (Lee, Lee, & Cheng, 2019). However, during the COVID-19 pandemic, the wellness of international students has shown a decline (Nikolis, Wakim, Adams, & Do, 2021; McDaniel, Dionne, & Regan, 2021; Spurr, Walker, Squires, & Redl, 2021; Franzidis & Zinder, 2019). Research in Indonesia found that students' wellness and dimensions such as social, emotional, intellectual, physical, career, creative, and financial health tend to be quite healthy, whereas cultural and spiritual health dimensions are less robust (Mamesah & Herdi, 2021; 2022). Recent studies have shown that the COVID-19 pandemic has had a significant positive impact on various psychological problems and mental health/wellness (Fiorillo & Gorwood, 2020; Shreffler, Petrey, & Huecker, 2020; Bansal et al., 2020). Indeed, physical, intellectual, and emotional health significantly positively affect subjective happiness, life satisfaction, and quality of life (Choi, Lee, & Ahn, 2014). Wellness is a strong predictor of reduced anxiety and depression levels (Kalkbrenner, 2023) and is significantly

negatively correlated with affective distress and school counselor burnout (Fye & Rainey, 2022). Consequently, schools, particularly guidance and counseling teachers/counselors, should enhance their role in assessing wellness and developing programs to improve student wellness (Herdi & Hidayat, 2013).

Therefore, establishing standard measuring instruments to assess the wellness of high school students in Indonesia is essential. Such tools would be valuable for operationalizing meaning, mapping profiles, and designing guidance and counseling programs, as well as identifying and testing the determinants and impacts of student wellness in Indonesia and other cultural contexts. The long version of the Perceived Wellness Survey (PWS) (36 items) is a useful assessment tool due to its rapid development and excellent psychometric properties (Adams, Bezner, & Steinhardt, 1997; Adams T. B., Bezner, Drabbs, Zambarano, & Steinhardt, 2000). However, the large number of items may deter participants from completing the survey. This study aims to adapt and test the psychometric properties of the New Perceived Wellness Survey-Short Form (New PWS-SF) for high school students within Indonesian culture. This adaptation is intended to facilitate integration into large surveys, combine with other instruments, and be applicable in various organizational and professional contexts. It also aims to reduce administration time and enhance practicality for practitioners and researchers designing mental health guidance and counseling programs. The reduction in the number of PWS items is expected to retain the psychometric qualities of the original wellness assessment tool.

Based on this rationale, the research question is: What are the psychometric properties of the Perceived Wellness Survey-Full Length (PWS-FL) and the New PWS-SF for high school students in Indonesian culture? The goal is to provide an empirical assessment of these psychometric properties.

This study distinguishes itself from similar research by focusing on producing a shorter version of the Perceived Wellness Survey specifically for high school students in Indonesia, aiming for increased efficiency, effectiveness, and practicality in administration. The reduction in the number of items is anticipated to maintain the quality of the psychometric properties. Additionally, this research is unique in that it analyzes the psychometric properties of the PWS using the Item Response Theory approach with the Rasch Model.

METHODOLOGY

The study employed instrument adaptation procedures from the International Test Commission, following the stages of pre-condition, adaptation, confirmation (empirical analysis), administration, scoring and interpretation, and documentation (Bartram, Hambleton, Gregoire, & Muniz, 2018). This approach was chosen to adapt and validate the Perceived Wellness Survey-Full Length (PWS-FL) and the New Perceived Wellness Survey-Short Form (PWS-SF) for high school students in Indonesian culture.

The adapted instrument is the Perceived Wellness Survey (Adams, Bezner, & Steinhardt, 1997), which consists of 36 items measuring six dimensions of wellness: psychological, emotional, social, physical, spiritual, and intellectual health. The instrument uses a six-point Likert scale: strongly agree (6), agree (5), somewhat agree (4), somewhat disagree (3), disagree (2), and strongly disagree (1). Instruments were selected based on the following considerations: (1) Developed by experts based on strong theoretical constructs; (2) Validated in multiple countries with highly satisfactory psychometric properties (Adams T. B., Bezner, Drabbs, Zambarano, & Steinhardt, 2000; Kaveh, Ostovarfar, Keshavarzi, & Ghahramani, 2016); (3)

Widely used in wellness research across various countries; (4) Ease of licensing from the developers.

The research sample consisted of 360 public high school students in Indonesia, selected using incidental sampling techniques. This method was chosen due to practical considerations, as the population was not precisely known, and it allowed for a more efficient and rapid sample selection process.

Data analysis utilized the Item Response Theory (IRT) approach with the Rasch Model using Winsteps 3.73. This included: Qualification testing of items (item measure, item fit order, and differential item functioning); Instrument quality analysis (unidimensionality and rating scale); and Reliability analysis (test reliability, person reliability, and item reliability) (Prasetya et al., 2020).

RESULT AND DISCUSSION
Result
Psychometric Properties of the PWS-Full Length (PWS-FL)

Items Fit of the PWS-FL

The eligibility of the 36 items on the PWS-FL for high school students in Indonesia was analyzed using item measure criteria, item fit order, and Differential Item Functioning (DIF). Item Measure assesses the difficulty of each item. The analysis revealed that item S31, with a +0.64 logit, is the most difficult to endorse, while item S28, with a -1.02 logit, is the easiest to endorse.

Items Fit Order determines whether PWS items are classified as fit or misfit. The test results indicated that 19 out of the 36 items were classified as fit. Fit and misfit items for the PWS-FL are detailed in Table 1. An item is considered fit if the Infit and Outfit Mnsq values fall within the acceptable range (0.5 MNSQ < 1.5), Outfit Zstd values are between -2 and +2, and Pt-Mcorr values range from 0.4 to 0.85 (Bond & Fox, 2015; Boone, Staver, & Yale, 2014; Linacre, 2019; Sumintono & Widhiarso, 2014; 2015; Herdi, Kartadinata, & Taufiq, 2019; Herdi & Mamesah, 2023; Taufiq & Herdi, 2020). Note that the Outfit Zstd criterion was not applied in this test due to a large number of respondents. The results of the feasibility test of the PWS-FL items are presented in Table 1.

Table 1.
Items Fit Test Results of the PWS-FL

Item Nu.	Item Measure	Item Fit Order				DIF		Decision
		Infit Mnsq	Outfit Mnsq	Outfit Zstd	Pt-MCorr	Grade	Sex	
S_1	-.53	.98	.87	-1.3	.43	.33	.87	Fit
S_2	.50	1.21	1.28	4.1	.24	.13	.09	Misfit
S_3	-.08	.88	.98	-1.5	.37	1.00	1.00	Fit
S_4	.13	1.41	1.45	6.1	.25	.06	.32	Misfit
S_5	-.81	1.28	1.03	.3	.41	.00	.21	Fit
S_6	-.10	.87	.86	-1.9	.33	.40	1.00	Misfit
S_7	.25	1.13	1.33	4.8	.17	.19	1.00	Misfit
S_8	-.19	.72	.70	-4.2	.42	1.00	.22	Fit
S_9	.40	1.38	1.44	6.3	.28	.04	.15	Misfit
S_{10}	-.17	.95	1.01	.1	.35	1.00	.05	Fit
S_{11}	-.01	1.18	1.19	2.5	.37	.75	.03	Misfit
S_{12}	.12	1.08	1.13	1.9	.25	.41	.76	Misfit
S_{13}	-.32	.95	1.05	.6	.24	.02	.27	Fit
S_{14}	.46	1.11	1.13	2.1	.42	.01	.19	Fit
S_{15}	-.13	.85	.87	-1.8	.31	.00	.23	Fit
S_{16}	-.14	.74	.84	-2.1	.41	.25	.42	Fit
S_{17}	.47	.92	.98	-.3	.41	.11	.31	Fit
S_{18}	.04	.58	.60	-6.8	.40	.42	.54	Fit
S_{19}	-.61	1.24	1.23	2.1	.25	.06	.37	Fit
S_{20}	.33	.89	.92	-1.4	.43	1.00	.20	Fit
S_{21}	-.02	1.00	1.02	.4	.38	.01	1.00	Fit
S_{22}	.06	.98	1.02	.3	.33	1.00	.04	Fit
S_{23}	-.19	.66	.66	-4.9	.45	.19	.11	Fit
S_{24}	.00	.69	.69	-5.0	.35	.28	.31	Fit
S_{25}	.40	1.07	1.16	2.6	.17	.68	1.00	Misfit
S_{26}	.42	.95	.95	-.8	.33	.00	.15	Misfit
S_{27}	.34	1.26	1.27	4.2	.29	.62	.65	Misfit
S_{28}	-1.02	1.69	1.25	1.8	.32	.01	.92	Misfit
S_{29}	.22	1.19	1.21	3.2	.35	.64	.25	Misfit
S_{30}	.09	.70	.74	-4.2	.31	.29	.55	Misfit
S_{31}	.64	1.18	1.52	6.6	.20	1.00	1.00	Misfit
S_{32}	.03	1.04	1.11	1.6	.26	.18	1.00	Misfit
S_{33}	.16	.96	.96	-.6	.34	.01	1.00	Misfit
S_{34}	-.63	1.77	1.66	5.2	.28	.00	.74	Misfit
S_{35}	-.23	.70	.67	-4.5	.50	.37	.70	Fit
S_{36}	.10	1.02	1.06	.90	.30	1.00	.04	Fit

Differential Item Functioning (DIF) is used to detect item bias across different groups of high school learners. Items with a probability value of less than 5% ($p < 0.05$) are considered biased (Bond & Fox, 2015; Boone, Staver, & Yale, 2014; Linacre, 2019; Sumintono & Widhiarso, 2014; 2015; Herdi, Kartadinata, & Taufiq, 2019; Herdi & Mamesah, 2023; Taufiq & Herdi, 2020). The analysis revealed that nine out of 36 PWS items were biased towards certain classes: S5, S9, S13, S14, S15, S26, S28, S33, and S34. Additionally, three items were biased towards certain genders: S11, S22, and S36. Based on the three item eligibility criteria, 19 out of 36 PWS items were deemed suitable for high school students in Indonesia. However, to ensure representation and balance across each PWS dimension, 18 of the 36 PWS items were selected for use in the subsequent analysis of the PWS-SF. Although item S5 was classified as fit, it was excluded due to its bias towards certain classes and the lowest pt-mcorr index among items in the dimension of spiritual health.

The Quality of the PWS-FL

Unidimensionality was assessed using principal component analysis (PCA) of residuals, measuring the consistency of the PWS in evaluating the intended construct (Bond & Fox, 2015; Boone, Staver, & Yale, 2014; Linacre, 2019; Sumintono & Widhiarso, 2014; 2015; Herdi, Kartadinata, & Taufiq, 2019; Herdi & Mamesah, 2023; Taufiq & Herdi, 2020). The analysis yielded a raw variance of 27.6% and an unexplained variance of 14.3%. This indicates that the unidimensionality criterion of at least 20% and unexplained variance of ≤ 15% are met .

The rating scale was verified using rating scale criteria (Bond & Fox, 2015; Boone, Staver, & Yale, 2014; Linacre, 2019; Sumintono & Widhiarso, 2014; 2015; Herdi, Kartadinata, & Taufiq, 2019; Herdi & Mamesah, 2023; Taufiq & Herdi, 2020). Analysis with Winsteps v 3.73 showed the average observation values starting from logit -1.78 for choice score 1 (strongly disagree), logit -0.74 for choice score 2 (disagree), logit -

0.22 for choice score 3 (somewhat disagree), logit +0.19 for choice score 4 (somewhat agree), logit +0.73 for choice score 5 (agree), and logit +1.85 for choice score 6 (strongly agree). Andrich Threshold analysis showed value movements from none to negative (-0.16, -0.24, -0.09) and further to positive (+0.18, +0.31) across the tiers. This confirms that the rating scale used in the PWS is appropriate and does not confuse high school students in Indonesia.

Reliability analysis of the PWS-SF also yielded satisfactory results, as detailed in Table 2. The Cronbach's Alpha value, which measures overall test reliability, was 0.81, indicating very good reliability. Person reliability was 0.82, and item reliability was 0.99, suggesting high consistency and quality of the PWS-FL items (Sumintono & Widhiarso, 2014; 2015). Table 2 also shows a person measure of +0.32 logit, indicating that high school students generally provided higher responses on the PWS-FL items.

Table 2.
Statistic Summary of the PWS-FL (36 Items) and the PWS-SF (18 Items)

	Output	**Result**	
		PWS-FL	**PWS-SF**
Item	Item reliability	.99	.98
	Highest logit value	.64	.65
	Lowes logit value	-1.02	-.68
Person	Person reliability	.82	.78
	Highest logit value	3.98	4.87
	Lowes logit value	-.52	-.97
Instrument	*Cronbach's alpha*	.81	.80
	Raw variance described by measurement	27.6 %	32.8 %
	Variance not described in the first contrast	14.3 %	11.9 %

Item Fit of the PWS-SF
The Perceived Wellness Survey-Short Form (PWS-SF)

consisting of 18 items, was analyzed for item fit using item measure criteria, fit order, and Differential Item Functioning (DIF). Item Measure assesses the difficulty level of each item. The results indicated that item S9, with a +0.65 logit, was the most difficult to endorse, while item S11, with a -0.68 logit, was the

easiest to endorse among the high school participants.

Fit or Infit items were analyzed using fit order criteria. The results showed that 13 out of the 18 items were classified as fit. This determination was based on Infit and Outfit Mnsq values falling within the acceptable range (0.5 MNSQ < 1.5) and Pt-Mcorr values ranging from 0.4 to 0.85 (Bond & Fox, 2015; Boone, Staver, & Yale, 2014; Linacre, 2019; Sumintono & Widhiarso, 2014; 2015; Herdi, Kartadinata, & Taufiq, 2019; Herdi & Mamesah, 2023; Taufiq & Herdi, 2020). The Outfit Zstd criteria (-2 < Zstd > +2) were not applied in this test due to the large number of participants. A summary of the PWS-SF test results is provided in Table 3.

Table 3.
Item Fit Test Results of the New PWS-SF

Item Nu.		Item Measure	Item Fit Order				DIF		Decision
v. 36	v.18		Infit Mnsq	Outfit Mnsq	Outfit Zstd	Pt-MCorr	Grade	Sex	
S1	S1	-.57	1.00	.90	-1.0	.48	.15	.33	Fit
S3	S2	-.02	.89	.89	-1.4	.47	.11	1.00	Fit
S8	S3	-.16	.76	.75	-3.3	.49	.88	1.00	Fit
S10	S4	-.13	.97	1.04	.5	.45	.60	1.00	Fit
S13	S5	-.31	1.05	1.16	1.7	.34	.39	.01	Misfit
S14	S6	.64	1.50	1.88	9.9	.32	.10	.01	Misfit
S15	S7	-.08	.93	1.01	.1	.40	.69	.01	Fit
S16	S8	-.09	.82	.93	-.9	.45	.55	.21	Fit
S17	S9	.65	1.24	1.60	7.6	.34	.53	.16	Misfit
S18	S10	.13	.59	.63	-5.8	.50	.50	.31	Fit
S19	S11	-.68	1.31	1.64	5.3	.33	.00	.05	Misfit
S20	S12	.48	1.22	1.40	5.4	.40	.09	1.00	Fit
S21	S13	.05	1.10	1.14	1.8	.44	.43	.01	Fit
S22	S14	.15	1.02	1.10	1.4	.44	.05	1.00	Fit
S23	S15	-.15	.66	.67	-4.5	.52	.72	.15	Fit
S24	S16	.08	.72	.80	-2.9	.45	.33	.19	Fit
S35	S17	-.20	.72	.71	-3.8	.54	1.0	.31	Fit
S36	S18	.21	1.52	1.74	8.6	.20	.21	.72	Misfit

Differential Item Functioning (DIF) was used to detect item bias among different groups of high school learners. Items with a probability value less than 5% (p < 0.05) were considered biased (Bond & Fox, 2015; Boone, Staver, & Yale, 2014; Dimitrov, 2012; Sumintono & Widhiarso, 2014; 2015; Linacre, 2019). The analysis showed that 1 out of 18 PWS-SF items, S11, was biased towards a particular class. Additionally, four items, S13, S14, S15, and S21, were biased towards certain genders.

Despite these findings, 13 of the 18 PWS-SF items were considered fit based on the three item eligibility criteria. However, to ensure representation and balance across all PWS dimensions, all 18 items of the PWS-SF were retained, with necessary revisions made to the five misfit items.
Quality of the PWS-SF

Unidimensionality was assessed using principal component analysis (PCA) of residuals, evaluating the consistency of the PWS-SF in measuring the intended construct (Bond & Fox, 2015; Boone, Staver, & Yale, 2014; Linacre, 2019; Sumintono & Widhiarso, 2014; 2015; Herdi, Kartadinata, & Taufiq, 2019; Herdi & Mamesah, 2023; Taufiq & Herdi, 2020). The analysis revealed a raw variance of 32.8% and an unexplained variance of 11.9%. These results meet the unidimensionality criteria of at least 20% variance explained and unexplained variance ≤ 15%.

The rating scale was evaluated using rating scale criteria (Bond & Fox, 2015; Boone, Staver, & Yale, 2014; Linacre, 2019; Sumintono & Widhiarso, 2014; 2015; Herdi, Kartadinata, & Taufiq, 2019; Herdi & Mamesah, 2023; Taufiq & Herdi, 2020). Analysis with Winsteps v3. 3.73 showed that the average observation value started from logit -1.89 for choice score 1 (strongly disagree), logit -.85 for choice score 2 (disagree), logit -.29 for choice score 3 (somewhat disagree), logit +.17 for choice score 4 (somewhat agree), logit +.83 for choice score 5 (agree), or logit +2.13 for choice score 6 (strongly agree). Andrich Threshold analysis displayed value movements from none to negative (-0.23, -0.49, -0.17) and then to positive (+0.17, +0.71) across tiers. This indicates that the rating scale used in the PWS-SF is appropriate and does not confuse high school students in Indonesia.

Reliability analysis of the PWS-SF, as presented in Table 2, showed satisfactory results. The Cronbach's Alpha value, indicating overall test reliability, was 0.80. Person reliability was 0.78, and item reliability was 0.98. This suggests that the reliability of the PWS-SF is in the good category, the consistency of student responses is sufficient, and the quality of PWS-SF items is excellent (Sumintono & Widhiarso, 2014; 2015). Table 2 also shows a person measure of +0.45 logit, indicating that high school students tended to provide higher responses on each PWS-SF

item. Items that fit with both old and new numbers are detailed in Table 4.

Item Nu.		Item (in Indonesian)
v. 36	v. 18	
S_1	S_1	Saya optimis tentang masa depan saya.
S_3	S_2	Keluarga saya datang meminta dukungan.
S_8	S_3	Secara umum, saya merasa percaya diri dengan kemampuan saya.
S_{10}	S_4	Tubuh saya dapat melawan penyakit fisik dengan baik.
S_{13}	S_5	Saya melihat segala sesuatu dari sisi baiknya.
S_{14}	S_6	Saya merasa tidak berharga.*
S_{15}	S_7	Teman-teman saya selalu mengandalkan saya sebagai tempat curhat dan meminta saran.
S_{16}	S_8	Kesehatan fisik saya sangat baik.
S_{17}	S_9	Terkadang saya tidak mengerti makna hidup.*
S_{18}	S_{10}	Secara umum, saya senang dengan stimulasi intelektual yang diperoleh dalam kehidupan sehari-hari.
S_{19}	S_{11}	Di masa lalu, saya mengharapkan yang terbaik.
S_{20}	S_{12}	Saya tidak yakin dengan kemampuan yang dimiliki.*
S_{21}	S_{13}	Di masa lalu, saya selalu mendapatkan dukungan dari keluarga.
S_{22}	S_{14}	Di masa lalu, kesehatan fisik saya lebih baik dibandingkan dengan orang-orang terdekat.
S_{23}	S_{15}	Saya merasakan misi tentang masa depan saya.
S_{24}	S_{16}	Jumlah informasi yang diperoleh setiap hari sesuai untuk kebutuhan saya.
S_{35}	S_{17}	Sepertinya hidupku selalu memiliki tujuan.
S_{36}	S_{18}	Saya merasa hampa ketika mendapat dukungan yang baik.*

Discussion

The results indicate that both the PWS-Full Length (PWS-FL) and the PWS-Short Form (PWS-SF) demonstrate robust psychometric properties and are suitable for assessing the wellness of high school students in Indonesia. This finding aligns with previous research validating the PWS's psychometric quality. Adams, Bezner, and Steinhardt (1997) reported that the PWS has good internal

consistency (α = .88 - .93), high correlations with all dimensions (p ≤ .05), and strong discriminant, face, and factorial validity. Their findings support the unidimensionality of wellness, suggesting that while each dimension is distinct, the overall assessment is valid. The composite scores for each PWS dimension range from 3 to 29, with higher scores reflecting better wellness.

Further research by Adams, Bezner, Garner, and Woodruff (1998) affirmed the PWS's temporal stability, with correlations of r = .73 in university students and r = .81 in company employees, as well as satisfactory construct and discriminant validity. Adams et al. (1997) also reported internal consistency values for various PWS dimensions: overall (α = .91), physical (α = .81), spiritual (α = .77), emotional (α = .74), psychological (α = .71), intellectual (α = .64), and social (α = .64).

Harari, Waehler, and Rogers (2005) tested the PWS's overall validity and found high international consistency (α = .91) and adequate criterion validity when compared to other mental health measures, such as the Beck Depression Inventory-II (R² = .29), the Beck Anxiety Inventory (R² = .11), and the Hopkins Symptom Checklist-21 (R² = .18). However, their factor analysis did not support the six PWS subscales, The test results also showed adequate internal reliability of PWS (α = .93). Rothman and Ekkerd (2007) found that the South African version of the PWS had acceptable Cronbach Alpha coefficients, ranging from .74 to .81 for each dimension, although correlations between dimensions were not significant (r = .06).

Foster and Levitov (2012) also supported the PWS's satisfactory psychometric properties. Taylor, Gungor, Blount, and Mullen (2018) highlighted a debate on whether the PWS should be viewed as unidimensional or multidimensional. Some researchers advocate for a unidimensional approach (Adams, Bezner, & Steinhardt, 1997; Harari, Waehler, & Rogers, 2005), while others support a multidimensional model (Kaveh, Ostovarfar, Keshavarzi, & Ghahramani, 2016). Al Awar et al. (2022) provided additional evidence by showing that a single component could adequately explain

the PWS for females aged 31-40 in the United Arab Emirates.

The theory of Perceived Wellness posits that health is holistic and multidimensional, encompassing psychological, emotional, social, physical, spiritual, and intellectual dimensions (Adams, Bezner, & Steinhardt, 1997; Adams T. B., Bezner, Drabbs, Zambarano, & Steinhardt, 2000). Hettler's Hexagonal Model of Wellness identifies six dimensions of wellness: occupational, physical, social, intellectual, spiritual, and emotional (Blount, Taylor, & Lambie, 2020; Granello, 2015). Current wellness theory asserts that achieving higher levels of health requires balance and maintenance of integrated spiritual, social, physical, emotional, intellectual, occupational, and environmental dimensions (Anspaugh, Hamrick, & Rosato, 2011). The wellness system model emphasizes the principles of: (1) health being multidimensional; (2) health as a dynamic variable; (3) health being self-regulating in every dimension of life; and (4) health being self-regulating between dimensions of life (Bart et al., 2018).

Multidimensional wellness is also evident in research by Sheerazi et al. (2022), which demonstrated that the PWS version for undergraduate and postgraduate students working as physical therapists aged 24 and above in Pakistan effectively assesses the six dimensions of wellness—physical, psychological, emotional, spiritual, social, and intellectual—showing internal consistency (α = .88 to .93). Similarly, Kaveh, Ostovarfar, Keshavarzi, and Ghahramani (2016) examined the psychometric properties of the PWS version for employees in Iran using confirmatory factor analysis and Cronbach's Alpha coefficient. Their results indicated that the Persian version of the PWS has an acceptable fit and can be used as an effective wellness assessment tool. This is supported by Cronbach's Alpha coefficients of .87 for the overall PWS and .83, .73, .68, .73, .85, and .82 for the emotional, mental, social, physical, spiritual, and intellectual dimensions, respectively. The factor analysis also showed appropriate indices, with KMO = .844, X²/df =

1.88, GFI = .71, CFI = .93, TLI/NNFI = .93, and RMSEA = .070.

Memnun (Cengiz Karagozoglu, Michele, & Dalena, 2018; Karagozoglu, 2013) found that adapting the PWS to Turkish for the population aged 22–36 years resulted in Cronbach's test-retest and Alpha reliability coefficients ranging from .81 to .83. Research by Bhattacharya, Deka, Barman, and Jamil (2023) on elderly individuals aged ≥ 65 years in India demonstrated that the variability of test-retest observations for each dimension of PWS was ≥ .8, indicating good reliability, except for the physical dimension, which had unacceptable reliability. Pearson's tests also revealed that the psychological, emotional, and physical dimensions had very strong positive associations (.734, .703, and .722) with PWS composite scores, while the spiritual, intellectual, and social dimensions showed a positive and strong relationship with PWS composite scores.

CONCLUSION

This pioneering research has developed the PWS-FL with 36 items and the new PWS-SF with 18 items, both demonstrating distinct psychometric properties. This is evident from the test results on various item eligibility criteria (item measure, item fit order, differential item functioning), instrument quality analysis (unidimensionality and rating scale), and reliability (test reliability, item reliability, and person reliability). Therefore, both versions of the PWS can serve as efficient and valuable wellness assessment tools for high school students in Indonesia. Further studies are needed to validate the PWS-FL and PWS-SF through confirmatory factor analysis with a larger and more representative sample of high school students in Indonesia, considering ethno-socio-demographic factors.

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