Development and psychometric properties of the Indonesian mental health scale

Iriani Indri Hapsari[1*], *Kahfi* Hizbullah[1], *Dewinta* Ariani[1], and *Muhammad* Ikbal Wahyu Sukron[1]

[1]Fakultas Psikologi, Universitas Negeri Jakarta, Indonesia.

Abstract. This study aimed to develop a culturally appropriate mental health scale for the Indonesian population. While the scale is designed for general use, this research focused on families with children who have special needs. These families often face emotional, social, and economic burdens that affect their mental well-being. The scale measured four core dimensions: connect, function, cope, and thrive. Data was collected from families with children who have special needs (N=194). A total of 36 items were developed and evaluated using confirmatory factor analysis (CFA). CFA analysis using the diagonally weighted least squares (DWLS) estimator showed that there was an excellent fit between the model and the analyzed data (χ.(588) = 598.21, p = .376; RMSEA = .009, 90% CI [.000, .025]; CFI = 999; TLI = .999; GFI = .958). Of the 36 items analyzed, 31 items met the criterion of factor loading ≥ .50, ranging from 0.356 to 0.790 ($p < 0.001$). The reliability of the Mental Health Scale in this study was generally acceptable, with a Cronbach's α coefficient of 0.942 and a McDonald's (ω) coefficient of 0.926.

1 Introduction

Mental health is a fundamental pillar of individual and societal well-being. The World Health Organization (WHO) defines mental health as a state of well-being in which individuals realize their potential, cope with the normal stresses of life, work productively, and contribute to their communities. In Indonesia, mental health issues continue to face significant challenges, particularly concerning the availability of measurement tools that are appropriate for the local sociocultural context. Many psychological instruments currently in use are adapted from foreign scales, which often fail to fully reflect the values, norms, and emotional expressions of Indonesian society. The use of culturally incongruent instruments may result in measurement bias and misinterpretation of findings, ultimately affecting the effectiveness of interventions.

This study specifically highlights the experiences of families with children with special needs. Caring for a child with disabilities presents substantial psychosocial burdens, including chronic stress, anxiety, depression, and social isolation [1]. These challenges are multidimensional, encompassing emotional burdens due to uncertainty about the child's future, social burdens arising from community stigma, and economic burdens related to the costs of fulfilling the child's special needs [2]. A study in Indonesia further revealed that

*Corresponding author: iriani@unj.ac.id

parents of children with special needs face significant psychological distress, which may develop into mental health problems if left unaddressed [3]. Therefore, the need for a mental health measurement tool that is not only psychometrically valid but also culturally relevant to the unique experiences of these families is both urgent and essential.

In this context, the present study aims to develop a mental health scale grounded in Indonesian cultural values, with a primary focus on four core dimensions: connect, function, cope, and thrive. These dimensions parallel established theoretical models of mental health and well-being. Connect reflects the importance of social relationships, aligning with Ryff's dimension of positive relations. Function corresponds to psychological functioning and role performance, echoing perspectives on psychological well-being and effective engagement in life roles [4]. Cope highlights adaptive responses to stress, integrating Lazarus and Folkman's transactional model of coping [5]. Finally, thrive embodies growth and fulfillment, reflecting self-actualization in Maslow's hierarchy of needs [6] and flourishing in Seligman's PERMA model [7]. By embedding these constructs within the Indonesian sociocultural context, the scale aspires to provide both cultural relevance and theoretical robustness.

The connect dimension measures the quality of social relationships and the support received. Social connectedness has been shown to serve as a protective factor that reduces the negative impact of chronic stress [8]. Meanwhile, the function dimension assesses an individual's ability to fulfill daily roles, which is often disrupted by the demanding responsibilities of caregiving. This scale seeks to capture how parents of children with special needs balance caregiving demands with other obligations.

The cope dimension focuses on the coping strategies employed by individuals. Effective coping, whether problem-focused or emotion-focused, plays a crucial role in maintaining mental health. Within the Indonesian cultural context, coping often involves spiritual aspects, such as acceptance and surrender to divine will, which should be accommodated in the measurement instrument [3]. The final dimension, thrive, represents the most distinctive aspect of this scale. Rather than merely assessing the absence of mental illness, this dimension measures an individual's ability to flourish, to derive meaning from adversity, and to experience post-traumatic growth. This approach is consistent with recent developments in positive psychology [9].

The development of a culturally relevant mental health scale for the Indonesian context is not only beneficial for academic research but also carries significant practical implications. Such a scale can be utilized by health practitioners, counselors, and policymakers to design more targeted interventions. With a valid and reliable instrument, family support programs, psychosocial interventions, and public policies can be directed toward genuinely improving the mental well-being of Indonesian society, particularly families with children with special needs. Therefore, this study seeks to make a meaningful contribution to addressing the urgent need for a contextual, relevant, and sustainable measurement tool.

2 Methods

2.1 Participants

This study involved 194 participants who were family members of children with special needs. The term "family" in this study refers to parents (fathers and mothers), siblings, as well as grandparents who live with and care for the child. The children with special needs included in this study had various diagnoses such as Attention-Deficit Hyperactivity Disorder (ADHD), autism spectrum disorder (ASD), Intellectual Disabilities, and others (see table 1).

Table 1. Demoghrapics of participants

Variable	Frequency	Percent (%)
Gender		
Male	14	7.22
Female	180	92.78
Age		
<30	25	12.89
31 - 40	69	35.57
> 40	100	51.54
Role in parenting		
Father	8	4.12
Mother	178	91.76
Sibling	8	4.12
Highest level of education		
SD	3	1.54
SMP	14	7.21
SMA	70	36.59
D3/D4	20	10.31
S1	59	30.41
S2	26	13.40
S3	2	1.03
Diagnosis of children with special needs		
ADHD	43	22.16
ADHD, ASD	16	8.25
ADHD, ASD, Kesulitan Belajar	2	1.03
ADHD, Disabilitas Intelektual, Kesulitan Belajar	2	1.03
ADHD, Disabilitas Intelektual, lainnya	2	1.03
ADHD, Gifted	1	0.51
ADHD, Kesulitan Belajar	5	2.58
ADHD, Lainnya	4	2.06
ASD	29	14.95
ASD, Disabilitas Intelektual	1	0.51
Disabilitas Fisik	16	8.25
Disabilitas Intelektual	40	20.61
Disabilitas Intelektual, Disabilitas Fisik	2	1.03
Disabilitas Intelektual, Kesulitan Belajar	3	1.55
Disabilitas Intelektual, Kesulitan Belajar, Lainnya	1	0.51
Disabilitas Intelektual, Lainnya	4	2.06
Kesulitan Belajar	10	5.15
Kesulitan Belajar, Disabilitas Fisik	1	0.51
Lainnya	12	6.18

2.2 Research Instrument

The development of this instrument refers to the WHO's concept of mental health, which has four aspects: connect, function, cope, and thrive. This instrument has 36 items: 8 items on connect, 10 items on function, 10 items on cope, and 8 items on thrive.

2.3 Research Procedure

The development of the mental health measurement scale was based on the World Health Organization (WHO) framework, which consists of four dimensions: connect, function, cope,

and thrive. The researcher developed indicators derived from these dimensions and constructed 36 items accordingly. Before conducting statistical analyses, the items underwent an expert judgment process involving five experts in psychology (expertise in clinical psychology) and psychometrics. Revisions were made to the items based on the feedback and recommendations provided by these experts.

2.4 Data Analysis Technique

Data analysis using JASP software version 0.95.1. Confirmatory Factor Analysis (CFA) was employed to examine the goodness-of-fit between the theoretical model and the empirical data obtained from the developed mental health scale. In this study, CFA aimed to confirm whether the four dimensions proposed by WHO, connect, function, cope, and thrive, emerged as distinct constructs that could be reliably measured through the designed scale items.

3 Result

The Mental Health Scale in this study consists of four factors: *connect, function, cope,* and *thrive*. Confirmatory Factor Analysis (CFA) was employed to evaluate the structural model of the proposed mental health construct.

3.1 Goodness of fit

The results of the CFA using the diagonally weighted least squares (DWLS) estimator showed that this approach is more appropriate for Likert-scale data because it treats responses as ordinal, uses polychoric correlations to better capture the relationships among items, and provides more accurate parameter estimates without relying on the strict assumption of multivariate normality. The DWLS estimation indicated a good fit between the proposed model and the observed data across multiple indices (Chi-square, RMSEA, CFI, TLI, and GFI) [10]. The Chi-square test suggested no significant difference between the proposed model and the observed data ($\chi^2(588) = 598.21$, $p = .376$). Furthermore, the RMSEA value was below the recommended threshold of < .05 (RMSEA = .009; 90% CI [.000, .025]), indicating an excellent model fit (Brown, 2015; Goretzko et al., 2023). Other absolute fit indices also confirmed the model's adequacy, with CFI = .999, TLI = .999, and GFI = .958; all exceeding the recommended cutoff of .95 (see Table 2).

Table 2. Goodness of fit indices Mental Health Scale

Model	Estimator	$\chi^2(df)$	CFI	TLI	GFI	RMSEA (90% CI)
Mental Health Scale	DWLS	598.21(588)	.999	.999	.958	.009

3.2 Reliability estimates

Reliability estimation in this study was conducted using internal consistency coefficients, namely Cronbach's alpha (α) and McDonald's omega (ω), with a minimum acceptable threshold ranging from .70 to .80 for basic research [8]. The overall reliability of the Mental Health Scale was acceptable, with Cronbach's α = .942 and McDonald's ω = .926. In addition, the reliability of each factor was also satisfactory: connect (Cronbach's α = .808; McDonald's ω = .740), function (Cronbach's α = .804; McDonald's ω = .842), cope (Cronbach's α = .846; McDonald's ω = .856), and thrive (Cronbach's α = .860; McDonald's ω = .865). These results indicate that both the overall scale and its four subscales demonstrate strong internal consistency (see Table 3).

Table 3. Internal consistency: The Mental Health Scale

Model Skala	Internal Consistency	
	McDonald's ω	Cronbach's α
The Mental Health Scale	.926	.942
Connect	.740	.808
Function	.804	.842
Cope	.846	.856
Thrive	.860	.865

3.3 Item parameter estimates

After testing the model fit, we further examined the factor loadings of each item to assess their adequacy. Of the 36 items, 31 met the recommended threshold with factor loadings ≥ .50 [7]. The factor loadings of the items ranged from .356 to .790. Specifically, the loadings for the connect factor ranged from .40 to .703, for function from .316 to .758, for cope from .356 to .790, and for thrive from .529 to .785. Nevertheless, all items were statistically significant ($p < .001$). Five items (MH1, MH2, MH15, MH16, and MH19) did not meet the recommended factor loading threshold and thus may require revision before being applied to the same population (see table 4).

Table 4. Factor loading

Factor	Item	Factor Loading
Connect	MH1	.400
	MH2	.430
	MH3	.591
	MH4	.506
	MH5	.703
	MH6	.692
	MH7	.676
	MH8	.598
Function	MH9	.521
	MH10	.672
	MH11	.690
	MH12	.758
	MH13	.523
	MH14	.621
	MH15	.440
	MH16	.316
	MH17	.636
	MH18	.734
Cope	MH19	.356
	MH20	.608
	MH21	.790
	MH22	.735
	MH23	.717
	MH24	.592
	MH25	.521
	MH26	.566
	MH27	.667
	MH28	.649

Table 4. Factor loading

Factor	Item	Factor Loading
Thrive	MH29	.672
	MH30	.686
	MH31	.682
	MH32	.529
	MH33	.706
	MH34	.785
	MH35	.650
	MH36	.676

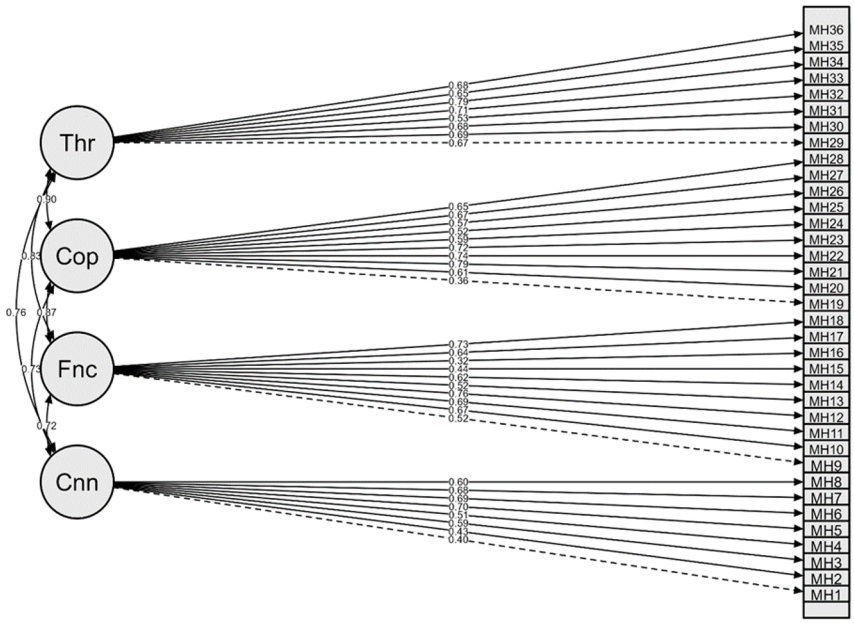

Fig 1. Factor loading of the Mental Health Scale

4 Discussion

This study aimed to develop and validate a culturally grounded mental health scale with a focus on families raising children with special needs in Indonesia. The results of the confirmatory factor analysis (CFA) demonstrated that the proposed four-dimensional model (*connect, function, cope,* and *thrive*) exhibited excellent fit with the empirical data. Goodness-of-fit indices (e.g. RMSEA, CFI, TLI, and GFI) all fell within the recommended thresholds, indicating that the theoretical structure of the scale is robust for measuring mental health within the target population. These findings confirm the research hypothesis that mental health can be conceptualized as a multidimensional construct and validly measured using a culturally relevant framework.

Further item parameter analysis revealed that the majority of items (31 out of 36) showed strong factor loadings, supporting the convergent validity of the scale. High factor loadings

suggest that these items effectively capture the intended constructs. Five items that did not meet the suggested threshold may be considered for revision in future studies, the five items are below the minimum threshold of 0.5, possibly because they are too general or less relevant to the subject's circumstances as a parent of a child with special needs. However, it is important to note that all items were statistically significant, demonstrating that each item contributed meaningfully to its respective factor despite some having relatively lower loadings. This is consistent with the literature, which emphasizes the importance of considering not only numerical thresholds but also statistical significance and contextual relevance.

The internal reliability of the overall scale and its subscales demonstrated strong consistency, with Cronbach's α and McDonald's ω coefficients exceeding the accepted threshold for basic research. The high McDonald's ω coefficient further underscored the reliability of the scale, as omega is often regarded as a more stable estimate than Cronbach's alpha, particularly when the assumption of tau-equivalence is violated. These reliability findings provide strong evidence that the scale can consistently yield accurate results when applied to similar populations.

These findings align with previous research emphasizing the need for culturally sensitive mental health measurement tools. The inclusion of *connect* and *cope* dimensions, which capture social and spiritual aspects, resonates strongly with studies conducted in Asian countries where social support and spirituality are regarded as primary resources for coping with adversity. The *thrive* dimension, focusing on post-traumatic growth and meaning in life, represents a significant contribution of this study. This dimension extends the measurement framework from the mere absence of mental illness to the presence of positive well-being, in line with the positive psychology movement [11].

5 Conclusion

The Indonesian Mental Health Scale developed in this study has been successfully validated and demonstrated strong psychometric properties. The scale specifically targets families with children with special needs, a population that faces multidimensional challenges in maintaining their mental well-being. The structural validity of the scale was confirmed through confirmatory factor analysis (CFA), which indicated an excellent model fit with the empirical data. The results further showed that the theoretical construction of the four dimensions, *connect, function, cope,* and *thrive*, is both accurate and reliable for measuring mental health within the Indonesian cultural context. Thus, the Indonesian Mental Health Scale is not merely an adapted instrument, but a valid, reliable, and culturally relevant tool for assessing key aspects of mental well-being among families of children with special needs in Indonesia, while also contributing significantly to the advancement of psychology as a scientific discipline at both national and international levels.

The limitation of this study lies in the relatively small number of subjects compared to the size and diversity of the Indonesian population. A limited sample reduces the representativeness of the findings, as it may not capture the wide range of demographic, cultural, and socioeconomic variations present in the broader population. Consequently, the generalizability of the results becomes restricted, the statistical power to detect significant effects is less strong, and the level of significance is also less strong, which may lead to less stable parameter estimates. Therefore, future research should aim to include a larger and more diverse sample to ensure that the findings more accurately reflect the characteristics of the population and provide stronger empirical support for broader applications.

6 Implication

The implications of these findings are substantial. The scale can serve as a valuable tool for psychologists, counselors, and policymakers in Indonesia to more accurately assess the mental health needs of families with children with special needs. Rather than relying solely on adapted foreign scales, this instrument offers a more specific and culturally relevant lens for understanding their unique experiences. Additionally, this study contributes to the scientific literature by presenting an empirically validated model of key dimensions of mental health within the Indonesian cultural context. Future research is needed to examine the external validity of this scale across more diverse populations and to establish more specific normative data.

Acknowledgement: The authors would like to appreciate the administrative support provided by the Faculty of Psychology and Research and Community Services Institute (LPPM) Universitas Negeri Jakarta.

Funding: This research was funded by Research and Community Services Institute (LPPM) Universitas Negeri Jakarta.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Authors' Contributions Statement: IIH, KH, and DA developed the scale items based on the WHO framework. IIH and DA prepared the background section. KH and MIWS conducted the statistical analyses and drafted the discussion.

Competing Interest: The authors declare that they have no competing interests.

References

1. W. Y. Cheng and C. Y. Y. Lai, Parental stress in families of children with special educational needs: a systematic review, Front. Psychiatry **14**, (2023) https://doi.org/10.3389/fpsyt.2023.1198302
2. J. Shetty, A. Shetty, S. C. Mundkur, T. K. Dinesh, and P. Pundir, Economic burden on caregivers or parents with Down syndrome children—a systematic review protocol, Syst. Rev. **12**, 3 (2023) https://doi.org/10.1186/s13643-022-02165-2
3. W. Magdhalena and D. S. Hariyono, Hubungan parental stress terhadap self-esteem orang tua yang memiliki anak dengan autism spectrum disorder, Cognicia **11**, 93 (2023) https://doi.org/10.22219/cognicia.v11i2.27701
4. C. D. Ryff, Happiness is everything, or is it? Explorations on the meaning of psychological well-being, J. Pers. Soc. Psychol. **57**, 1069 (1989) https://doi.org/10.1037/0022-3514.57.6.1069
5. R. S. Lazarus and S. Folkman, *Stress, Appraisal, and Coping* (Springer Publishing Company, New York, 1984)
6. A. H. Maslow, A theory of human motivation, Psychol. Rev. **50**, 370 (1943) https://doi.org/10.1037/h0054346
7. M. Seligman, PERMA and the building blocks of well-being, J. Posit. Psychol. **13**, 333 (2018) https://doi.org/10.1080/17439760.2018.1437466
8. E. Zahl, H. Cogo-Moreira, T. Fredriksen, S. Kirchhofer, S. Orm, T. Vatne, M. Botta, and K. Fjermestad, Mental health dynamics between mothers and siblings of children with disabilities, Front. Psychol. **15**, (2024) https://doi.org/10.3389/fpsyg.2024.1501343

9. D. Goretzko, K. Siemund, and P. Sterner, Evaluating Model Fit of Measurement Models in Confirmatory Factor Analysis, Educ. Psychol. Meas. **84**, 123 (2024) https://doi.org/10.1177/00131644231163813
10. G. W. Cheung, H. D. Cooper-Thomas, R. S. Lau, and L. C. Wang, Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations, Asia Pac. J. Manag. **41**, 745 (2024) https://doi.org/10.1007/s10490-023-09871-y
11. R. M. Kaplan and D. P. Saccuzzo, *Psychological Testing : Principles, Applications, and Issues* (Cengage Learning, Boston, Massachusetts, 2018)