Journal of Educational Technology and Learning Creativity
Vol. 4, No. 1, June 2026, pp. 340~352
ISSN: 3021-7865, DOI: 10.37251/jetlc.v4i1.2574

Detecting the "Wish Not to Live": Rasch Validation of the D-PSI Scale for Technology-Enabled Suicide Prevention in Higher Education

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Article Info

Article history:

Received Dec 29, 2025
Revised Mar 11, 2026
Accepted Apr 1, 2026
Online First Jun 15, 2026

Keywords:

College Student
Educational Technology
Passive Suicidal Ideation
Scale Development
Suicide Prevention

ABSTRACT

Purpose of the study: This study aims to develop and psychometrically validate a culturally grounded Distinctive Passive Suicidal Ideation Scale and to examine its potential contribution to early suicide prevention within technology-supported higher education environments.

Methodology: This quantitative cross-sectional study employed a self-developed Distinctive Passive Suicidal Ideation Scale administered through an online survey using Google Forms. Data were collected from 833 Indonesian respondents. Psychometric validation was conducted using Item Response Theory with Rasch modeling. Item difficulty, person reliability, item fit statistics (infit and outfit MNSQ), rating scale functioning, and person–item targeting were analyzed using Jamovi version 2.7.6.

Main Findings: The Scale demonstrated strong psychometric performance. The Rasch analysis indicated high person reliability (0.917) and acceptable item fit statistics, confirming the internal consistency of the scale. Item difficulty estimates clustered within low to moderate levels, suggesting that the instrument is sensitive to early manifestations of passive suicidal ideation. Rating scale thresholds were ordered, and person–item targeting indicated appropriate alignment between item difficulty and respondent ability levels.

Novelty/Originality of this study: This study introduces a Rasch-validated instrument designed to measure passive suicidal ideation as the cognitive state described as the "wish not to live." By operationalizing this early stage of suicidality, the D-PSI Scale provides a psychometric foundation for integrating psychological screening indicators into digital counseling platforms, learning analytics, and other technology-enabled student support systems aimed at strengthening suicide prevention efforts in higher education.

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1. INTRODUCTION

In contemporary higher education, digital learning environments increasingly mediate students' academic experiences and well-being. Universities are not only sites of knowledge production but also ecosystems that monitor and support students' psychological health. Within these environments, subtle forms of psychological disengagement may remain invisible to traditional support systems. One such phenomenon is suicidal ideation, a

cognitive-affective process that exists on a continuum ranging from passive suicidal ideation (PSI) defined as the wish not to live to active suicidal ideation (ASI), which involves the wish and intent to die [1]-[3]. As higher education becomes increasingly technology-mediated, identifying these early and less visible forms of psychological risk becomes a critical challenge for institutions.

Despite its importance, research and intervention efforts have largely focused on ASI due to its direct association with suicidal behavior. In contrast, PSI has received comparatively limited attention, even though it has long been proposed as an early psychological antecedent of more severe suicidal outcomes [4], [5]. Individuals experiencing PSI typically exhibit cognitive disengagement from life, reduced motivation for self-preservation, and emotional detachment without explicit intent to die [6]-[8]. This condition is particularly difficult to detect within conventional clinical frameworks and even more so within digital learning systems, where early warning signals must rely on subtle behavioral and cognitive indicators rather than overt expressions of distress.

The gap in existing research becomes more evident in the domain of measurement. Most established instruments, such as the Beck Scale for Suicide Ideation (BSSI) and the Columbia-Suicide Severity Rating Scale (C-SSRS), primarily assess active suicidal ideation, with PSI treated only as a preliminary or indirect component [9]-[11]. As a result, PSI remains underrepresented as an independent construct, leading to fragmented understanding and limited theoretical development [12]-[14]. This lack of precise and dedicated PSI measurement tools significantly constrains the integration of mental health detection into educational technologies, including learning analytics systems, digital counseling platforms, and data-driven student support mechanisms. Thus, the central research gap lies in the absence of a psychometrically robust and culturally grounded instrument specifically designed to measure passive suicidal ideation as a distinct construct.

The need to address this gap is further supported by previous attempts to differentiate PSI from ASI. May et al. [15] proposed that PSI represents a distinct psychological state within the suicidal continuum, characterized by passive withdrawal rather than active self-harm tendencies. Subsequent findings also indicate that PSI is associated with depression and hopelessness but reflects a qualitatively different cognitive-emotional condition [16]-[18]. However, despite this theoretical recognition, there has been limited progress in developing and validating instruments that comprehensively capture PSI. Existing measures often include only a small number of PSI-related items embedded within broader suicide constructs, making them insufficient for capturing the nuanced cognitive, emotional, and existential dimensions of passive suicidal thoughts, particularly in non-Western cultural contexts [19]-[21].

This limitation creates a critical barrier for the development of technology-enabled suicide prevention in higher education. Without precise measurement, early detection systems cannot reliably identify students experiencing early psychological disengagement. In this context, PSI often expressed as the “wish not to live” represents a crucial transitional phase marked by emotional fatigue, loss of meaning, and passive resignation toward life, which may precede more severe suicidal intentions [22]-[24]. Therefore, addressing this limitation is not only a theoretical necessity but also an urgent practical need for advancing preventive strategies within digital learning environments.

The urgency of this issue is further amplified in cultural contexts where explicit expressions of suicidal intent are socially or religiously discouraged. In Indonesia, for example, individuals may be less likely to openly express suicidal thoughts, making passive forms of ideation more relevant as early indicators of psychological vulnerability [25]-[27]. In such contexts, culturally sensitive instruments are essential for capturing these subtle expressions of distress. From the perspective of educational technology, the availability of a valid PSI measurement tool would enable the integration of psychological indicators into digital systems, supporting the development of proactive, data-informed, and ethically grounded interventions. Building upon these gaps and contextual challenges, this study offers a key novelty by developing a culturally grounded and Rasch-validated instrument specifically designed to measure passive suicidal ideation as the “wish not to live.” Unlike existing tools, this instrument explicitly operationalizes PSI as a distinct construct and aligns it with the requirements of technology-enabled mental health monitoring systems in higher education.

With this rationale, this study aims to: (1) develop a culturally grounded instrument to measure passive suicidal ideation among Indonesian students, (2) validate the instrument using Rasch model analysis, and (3) explore its implications for technology-supported suicide prevention in higher education. Within the framework of Rasch model validation and calibration, this study contributes to the body of knowledge by providing a robust empirical foundation for the construct validity of a passive suicidal ideation scale. The lack of precise and psychometrically validated PSI instruments has long constrained the development of technology-enabled suicide prevention in higher education, particularly within learning analytics, digital counseling platforms, and AI-based early warning systems. By establishing a reliable measurement tool for detecting the early cognitive state of “wish not to live,” this research provides a critical foundation for integrating psychological assessment into data-informed student support systems, thereby enabling more proactive and ethically grounded suicide prevention strategies in digital learning environments.

2. RESEARCH METHOD

2.1. Research Design

This study employed a quantitative cross-sectional design to develop and psychometrically validate the Distinctive Passive Suicidal Ideation (D-PSI) Scale as an instrument for measuring the cognitive state described as the "wish not to live" among higher education students. Following the initial construction and expert review of the scale items, psychometric evaluation was conducted using Item Response Theory with Rasch modeling to examine item functioning, measurement reliability, and the internal structure of the instrument.

2.2. Participants

A total of 833 participants joined this study (see Table 1). The gender distribution of the participants is predominantly female (71.55%), though 28.45% are male. The student status and age demographics are mostly composed of Bachelor students (17-24 years) at 94.84%, Master students (25-37 years) at 4.80%, and a few Doctoral students (38-49 years) at 0.36%. The ethnic distribution of this study covers 14 ethnic groups in Indonesia. The biggest groups belong to the Banjar (38.76%), Javanese (27.37%), and Sundanese (9.12%). The biggest religious groups belong to Muslims at 92.68% and are trailed by Protestants at 4.68%, Catholics at 2.04%, Buddhists at 0.36%, and Hindus at 0.24% respectively.

Participants were recruited using a non-probability convenience sampling technique through online distribution of the survey via Google Forms. The inclusion criteria required participants to be currently enrolled students in higher education institutions in Indonesia and willing to provide informed consent. The survey link was disseminated through academic networks, student groups, and social media platforms, allowing voluntary participation. This approach enabled a broad geographic reach while ensuring that respondents met the study's target population criteria.

2.3. Instrument Development

The PSI scale was developed based on the models for suicide ideation proposed by Beck et al [7] and Page & Stritzke [28]. The models describe passive suicidal ideation as the early stage of suicidality, defined as the wish not to live, and marked by the absence of self-protective behavior and emotional detachment, as opposed to the wish for death as seen with active suicidality. The items for the scale started as 30 items, drafted from theoretical definitions, literature, and clinical experience with suicidations and suicidal attempts by the forefront suicidologists, Beck et al. [7] and Page & Stritzke [28]. The items were administered using Bahasa Indonesia format, with a 4-choice Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree), with the items divided into positive and negative statements to check for bias (see Table 2).

The instrument validation process was conducted through a multi-stage procedure to ensure content validity and cultural appropriateness. Initially, all items were reviewed by three experts in psychological assessment and suicidology, who evaluated them for relevance to the construct, clarity of wording, and cultural suitability in the Indonesian context. Each item was assessed for its alignment with the theoretical definition of passive suicidal ideation, particularly the "wish not to live," as well as its ability to distinguish early-stage suicidal cognition from more active forms. Feedback from the experts led to refinement of item wording, elimination of ambiguous phrasing, and adjustment of several items to improve conceptual precision and linguistic clarity. In addition, attention was given to balancing positively and negatively worded items to reduce response bias. The validated items were then finalized for empirical testing using Rasch model analysis to examine their psychometric properties further.

Table 1. Initial Blueprint of the Distinctive-Passive Suicidal Ideation (D-PSI) Scale

Dimension	Item Number(s)	F/U	Example Statement
1. Avoidance of Life Preservation	3, 5, 6, 11, 17, 24, 29	F	3. I tend not to care about my health because someday I will die anyway. 5. Maintaining my health to live longer is not important to me. 6. I do not care if I die because of the illness I have. 11. I often think that life would be fine if I were not around. 17. It would not matter to me if I died from illness or an accident. 24. I often think about letting an illness pass without taking any action. 29. I wish that God would take my life sooner.
	4, 26, 30	U	4. I always try to maintain my health so that I can live longer. 26. Maintaining my health so that I can live longer is a top priority in my life. 30. I believe that protecting myself in order to stay alive is important.

Dimension	Item Number(s)	F/U	Example Statement
2. Desire to Escape from Life	1, 2, 8, 12, 19, 28	F	1. I often wish that I could disappear from this life. 2. I would rather sleep all day than engage in activities outside the house. 8. I often feel that life is too difficult for me to live. 12. I often feel the urge to escape from this reality. 19. I feel that my life is a burden to myself and to others. 28. I often think about avoiding all responsibilities in life.
	7, 13, 15, 22	U	7. I believe that my life has purpose and meaning. 13. I have many reasons to continue living my life. 15. I feel strong enough to face this life. 22. I feel that there are many things that make life worth living.
3. Non-Concrete Death Ideation	14, 16, 18, 20, 21, 23, 25	F	14. I do not care if I leave this world. 16. I feel like giving up on life. 18. I think things would be better if I died. 20. I think it would be better if I did not exist in this world. 21. I see death as a way out of my problems. 23. I feel that if I died one day, it would not be a big problem. 25. I often think that if I died, everything would become easier.
	9, 10, 27	U	9. I feel that life is something enjoyable. 10. I never think about dying in the near future. 27. I am afraid of losing my life suddenly.

Notes:

- All items were originally written in *Bahasa Indonesia* during instrument construction and later translated into English for international publication.
- F = Favorable item (higher scores → greater passive suicidal ideation); U = Unfavorable item (reverse-coded).
- All items rated on a 4-point Likert scale (1 = Strongly Disagree to 4 = Strongly Agree).

2.4. Data Collection Procedures

Data gathering was conducted using Google Form. The respondents were given online informed consents, which included details of this study, confidentiality, and voluntary participation. Universitas Negeri Malang ethical approval was sought from their institutional review board (IRB). Demographic information and PSI Scale were submitted anonymously by participants with an average time of 15-20 minutes per participant. Data was reviewed for completeness and responses before analysis was conducted.

2.5 Data Analysis

The data were analyzed using quantitative psychometric procedures to examine the internal structure, measurement properties, and theoretical validity of the Distinctive Passive Suicidal Ideation (D-PSI) Scale. Item Response Theory (IRT) with the Rasch model was employed to evaluate item functioning and scale performance. Descriptive statistics were first used to examine the distribution of item responses. Rasch analysis was conducted using Jamovi version 2.7.6 to estimate item difficulty, person ability, and item–person fit statistics, including infit and outfit mean square (MNSQ) values. Acceptable item fit was defined as MNSQ values between 0.5 and 1.5. Dimensionality of the scale was examined through principal component analysis (PCA) of Rasch residuals to assess whether the items measured a dominant latent construct. In addition, person reliability and person–item separation indices were calculated to evaluate the scale's ability to discriminate between different levels of passive suicidal ideation. These procedures enable ordinal Likert-scale responses to be transformed into interval-level measures while identifying potential item redundancy and measurement inconsistencies.

3. RESULTS AND DISCUSSION

3.1. Participants' Demographic Characteristics

The average result of the D-PSI Scale revealed a degree of PSI on the part of the respondents (M = 67.10). Female respondents recorded a slightly higher PSI measure (M = 67.96, SD = 14.79) compared to the male respondents (M = 64.67, SD = 14.93), thereby suggesting that women expressed passive suicidal ideas more than the male respondents. For the age group, the Doctoral students recorded the highest PSI measure (M = 73.00), although this group had a minimal number of respondents (Table 2).

Table 2. Demographic Characteristics of Participants and Mean PSI Scores

Variable (n = 833)	Category	n	%	Mean	SD
Gender	Male	237	28.45	64.67	14.93
	Female	596	71.55	67.96	14.79
Student Status (Age)	Bachelor Students (17 – 24 years)	790	94.84	69.67	12.70
	Master Students (25 – 37 years)	40	4.80	67.00	16.52
	Doctoral Students (38 – 49 years)	3	0.36	73.00	10.82
Ethnicity	Banjar	323	38.76	66.74	15.59
	Batak	14	1.68	69.43	13.51
	Betawi	31	3.72	71.42	13.86
	Bugis	31	3.72	69.97	13.89
	Dayak	45	5.40	66.71	12.58
	Java	228	27.37	67.18	14.49
	Lampung	2	0.24	59.50	4.95
	Makassar	2	0.24	59.50	7.78
	Malay	11	1.32	66.45	11.18
	Multi-ethnic	51	6.12	66.41	15.65
	Sasak	2	0.24	65.00	19.79
	Sunda	76	9.12	64.87	15.67
	Chinese	3	0.36	73.67	19.42
	Toraja	3	0.36	69.67	9.61
	Other ethnic (Aceh, Bali, Bengkulu, Madura, Mandailing, Mandar, Minahasa, Minang, Nias, Palembang, Sumbawa)	11	1.32	68.64	16.08
Religion	Buddha	3	0.36	67.33	8.08
	Hinduism	2	0.24	82.50	6.36
	Islam	772	92.68	66.73	15.04
	Catholic	17	2.04	70.35	12.86
	Christianity (Protestant)	39	4.68	70.56	12.78

3.2. D-PSI Scale Reliability

Results of the Rasch model analysis were used to investigate the measurement properties of the Distinctive Passive Suicidal Ideation (D-PSI) Scale at both item and person levels. The data showed that the scale had high internal consistency and functioned well along the continuum measuring passive suicidal ideation. The person reliability coefficient was 0.917, while the mean square residual statistic (MADaQ3 = 0.184, $p < 0.001$) showed that local item independence and model fit were satisfactory, thereby verifying that the data fitted the Rasch model. The statistic implies that the scale can effectively identify and differentiate the respondents along the continuum of low to moderate levels of passive suicidal ideation, which focuses on the intended application of the early detection tool.

Table 3. Person Reliability & Model Fit

	Person Reliability	MADaQ3	p
D-PSI Scale	0.917	0.184	< 0.001

Further support was found through the person separation index, which indicated that the D-PSI Scale could meaningfully classify the respondents into multiple latent strata. Overall, these indices suggest that the D-PSI Scale is a stable and discriminatory tool for the measurement of the targeted construct.

3.3. Item Difficulty and Fit Analysis

The scatter plot of the item difficulty values showed that most of the D-PSI items fell between low and moderate difficulty levels (–2.60 and –1.09). This finding is an indicator that the scale is more concerned or sensitive to the early signs or the subthreshold level than the extreme suicidal ideas. The items that belonged to the concept of disengagement with life-saving activities and emotional exhaustions were generally grouped at the lowest levels, while the items clustering around the concepts involving generalized ideas about death generally stood at the higher levels.

The fit of items on the Rasch model was checked by the infit and outfit mean square values (MNSQ). Most items showed acceptable fit values within the recommended region (0.80 to 1.30), which implied that the items generally performed as intended on the Rasch model. The evidence suggests that the items collectively

tapped into the same latent construct (passive suicidal ideation) without noise and redundancy. But, some items showed slight misfit to the Rasch model, including:

- Item 10 (*"I never think about dying in the near future"*; Outfit = 1.597),
- Item 17 (*"It would not matter to me if I died from illness or an accident"*; Outfit = 1.507),
- Item 21 (*"I see death as a way out of my problems"*; Outfit = 1.634), and
- Item 27 (*"I am afraid of losing my life suddenly"*; Outfit = 1.359).

Items with outfit values above 1.5 (e.g., Items 10 and 21) may reflect linguistic ambiguity related to negative phrasing in *Bahasa Indonesia*. Such constructions may be interpreted differently depending on cultural norms surrounding indirect expressions of distress. Such misfit patterns are typically encountered in psychological constructs with sensitive or abstract topics and can be indicative of the respondents' differential item interpretation. More importantly, however, is the fact that there were no items with severe misfit that necessitated deletion. Rather, the decision was made to retain these items for subsequent analysis at the next stages of the factor analysis.

Table 4. Item Difficulty and Fit Statistics for the D-PSI Scale

Item	Measure	S.E.Measure	Infit	Outfit
1	-2.30	0.0427	0.882	0.878
2	-2.09	0.0432	1.331	1.488
3	-2.18	0.0430	0.920	0.915
4	-1.71	0.0449	0.894	0.927
5	-2.01	0.0434	1.043	1.055
6	-2.55	0.0427	0.930	0.971
7	-1.10	0.0499	1.060	1.028
8	-2.60	0.0427	0.911	0.929
9	-1.64	0.0453	0.963	0.965
10	-1.95	0.0437	1.457	1.597
11	-2.54	0.0427	0.983	1.029
12	-2.34	0.0427	0.817	0.800
13	-1.09	0.0500	1.054	1.054
14	-2.15	0.0430	0.829	0.840
15	-1.52	0.0461	0.989	1.017
16	-2.35	0.0427	0.840	0.831
17	-1.60	0.0455	1.272	1.507
18	-2.26	0.0428	0.901	0.913
19	-2.32	0.0427	0.976	0.964
20	-2.01	0.0434	0.807	0.793
21	-1.92	0.0438	1.486	1.634
22	-1.27	0.0482	1.045	1.139
23	-2.62	0.0427	0.998	1.027
24	-2.38	0.0427	0.808	0.807
25	-2.10	0.0432	0.839	0.819
26	-1.40	0.0470	0.941	0.887
27	-1.85	0.0441	1.302	1.359
28	-2.28	0.0428	0.921	0.924
29	-2.02	0.0434	1.136	1.181
30	-1.27	0.0482	0.946	0.931

3.4. Person–Item Targeting

The results for examining the quality of the Wright map (see Figure 1) showed that the relationship between estimates of person abilities and item difficulties was good. The average person's location tended to be just below the average item location, implying that the scale was effectively targeting the level of passive suicidal thoughts among the sample. This is fitting, as the phenomenon of PSI is expected to emerge subtly, as opposed to intensely, among non-clinical and community samples.

However, the distribution also showed decreased precision for the upper end of the latent trait, which corresponds to fewer items measuring high-intensity passive suicidal ideation. This is in line with the scale's preventive focus, where early detection is preferred to waiting for the point of crisis to be assessed.

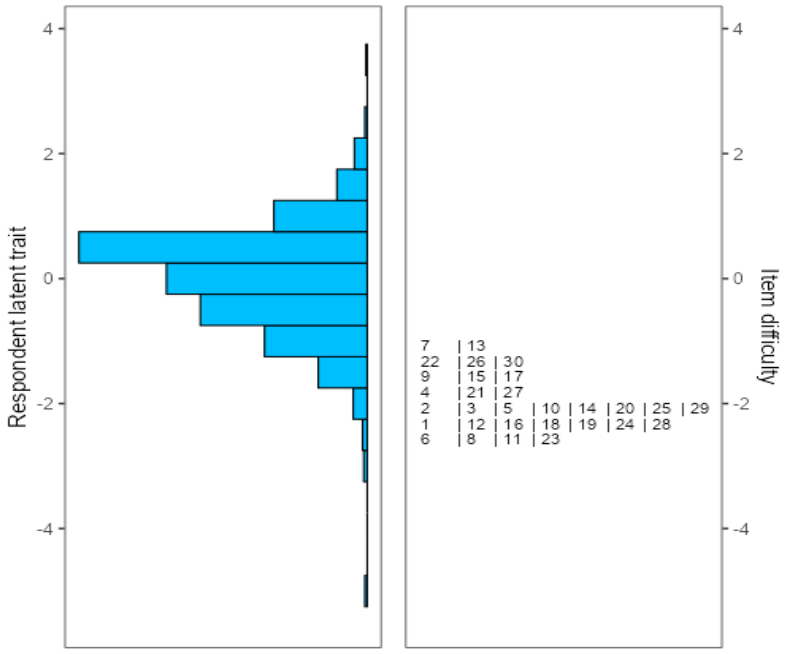

Figure 1. D-PSI Scale Person–Item Wright Map

3.5. Rating Scale Functioning

The function of the four-point Likert-scale format ("Strongly Disagree," "Disagree," "Agree," and "Strongly Agree") was examined using τ-threshold tests on the Rasch model. The data showed that the τ-thresholds were monotonically ordered, ranging from about −34 to 13 on the latent continuum. This finding supported that the categories were distinct and used systematically by the respondents (see Figure 2). No disordered τ-thresholds were found, indicating that the participant sample could discriminate between levels of PSI-related statements systematically.

Moreover, the analysis of category probability distributions revealed sharp-peaked distributions for each response alternative, suggesting appropriate transitions among the categories. The lack of category collapse and underutilization provides secondary support for the appropriateness of the four-point response format for the measurement of the subtle, nuanced continuum associated with passive suicidal ideation. Taken together, the results demonstrate the appropriateness and effectiveness of the chosen Likert-type scaling function.

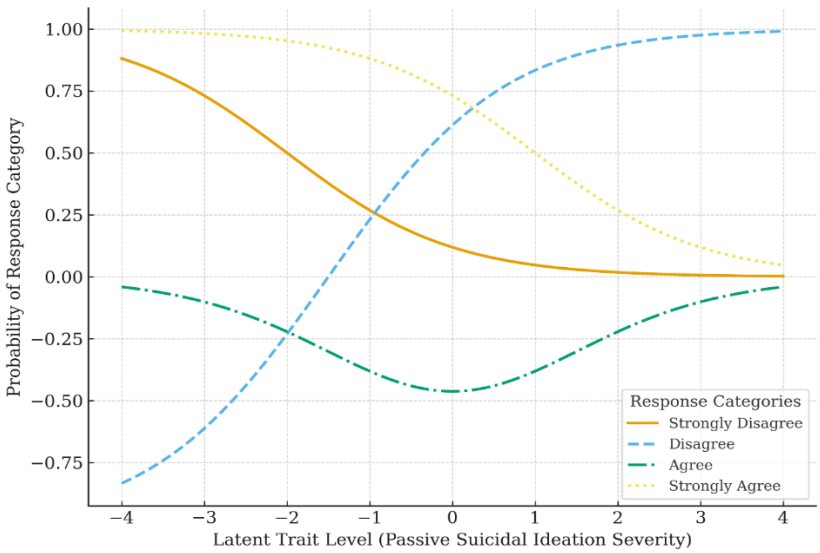

Figure 2. Category Probability Curves of the Four-Point Response Format

3.6. Psychometric Performance of the D-PSI Scale

The Rasch analysis demonstrates that the Distinctive Passive Suicidal Ideation (D-PSI) Scale possesses strong psychometric properties for assessing early manifestations of passive suicidal cognition. The high person

reliability coefficient indicates that the instrument can consistently differentiate respondents across varying levels of passive suicidal ideation. In Rasch measurement, high reliability and separation indices suggest that the scale is capable of distinguishing individuals with different latent trait levels and provides stable measurement across the respondent sample. Such measurement precision is essential when assessing subtle psychological constructs such as passive suicidal ideation, which often emerge before explicit suicidal intent becomes observable.

The distribution of item difficulty estimates further indicates that most items cluster within the low-to-moderate difficulty range. This pattern suggests that the scale is particularly sensitive to early forms of psychological disengagement from life rather than acute suicidal intent. Previous studies have shown that passive suicidal ideation often manifests as cognitive withdrawal, emotional fatigue, and reduced motivation to maintain self-preservation before escalating into more explicit suicidal desire or planning [29]–[31]. Therefore, the observed item distribution aligns well with theoretical expectations that passive ideation represents an early stage in the continuum of suicidality.

Item fit statistics also support the internal consistency of the scale. Most items demonstrated acceptable infit and outfit mean square (MNSQ) values within the recommended range, indicating that they function coherently in measuring the same latent construct. Although several items exhibited slightly elevated outfit values, these patterns are not uncommon in psychological instruments assessing sensitive constructs such as suicide-related cognition. Minor misfit may reflect variability in how individuals interpret statements related to existential disengagement or emotional withdrawal, which are known to be psychologically complex and context-dependent experiences [32]-[34].

Finally, the person–item targeting results indicate that the scale is appropriately calibrated for the population under study. The average person measure was located slightly below the average item difficulty, suggesting that the instrument is well-suited to detect early levels of passive suicidal ideation within non-clinical or community samples. Such targeting is particularly important for preventive screening contexts, where identifying subtle cognitive disengagement from life may enable earlier intervention before suicidal thoughts progress toward active planning or behavior.

3.7. Conceptual Interpretation of Passive Suicidal Ideation

The findings of this study also provide conceptual insight into the psychological nature of passive suicidal ideation as an early stage in the continuum of suicidality. The three dimensions identified in the D-PSI Scale avoidance of life preservation, desire to escape from life, and non-concrete death ideation reflect cognitive and affective processes associated with gradual disengagement from life. Rather than expressing an explicit wish to die, individuals experiencing passive suicidal ideation often demonstrate a diminishing motivation to preserve their well-being and an increasing tendency toward emotional withdrawal from life circumstances. Such patterns align with theoretical models suggesting that suicidal cognition often begins with subtle psychological detachment before evolving into active suicidal intent [29]–[31].

From a cognitive perspective, these findings are consistent with Beck's cognitive theory of depression and suicidality, which emphasizes the role of negative cognitive schemas regarding the self, the world, and the future. According to this framework, hopelessness and distorted interpretations of life circumstances can gradually narrow perceived coping options and contribute to a sense of existential resignation [35]–[37]. The dimensions captured in the D-PSI Scale correspond to these cognitive patterns. For instance, avoidance of life preservation reflects a cognitive withdrawal from self-protective behaviors, while the desire to escape from life may represent emotional exhaustion and the perception that life problems are overwhelming. Similarly, non-concrete death ideation reflects an early cognitive acknowledgment of death as a conceptual escape rather than a deliberate plan for self-harm. From a contextual perspective, the emergence of such cognitive patterns may also be influenced by psychosocial resources. Studies among university students indicate that social support and religiosity can function as protective factors that strengthen psychological well-being and reduce vulnerability to negative cognitive processes associated with suicidal ideation [38].

These findings are also compatible with contemporary ideation-to-action models of suicide, which distinguish between the emergence of suicidal thoughts and the development of suicidal behavior. Within these frameworks, passive ideation represents an intermediate cognitive stage in which individuals experience ambivalence toward life but have not yet developed the capability or intention to act on suicidal thoughts [39]–[41]. The clustering of item difficulty in the lower range of the Rasch continuum supports this interpretation, indicating that the D-PSI Scale primarily captures early cognitive disengagement rather than acute suicidal intent.

Taken together, the conceptual structure of the D-PSI Scale supports the view that passive suicidal ideation should be understood not merely as a weaker form of active suicidal thinking but as a distinct psychological condition characterized by ambivalence, emotional fatigue, and reduced commitment to self-preservation.

3.8. Cultural Context of Passive Suicidal Ideation

The interpretation of passive suicidal ideation should also be considered within its cultural context. Expressions of psychological distress and attitudes toward life and death are strongly influenced by cultural values, belief systems, and social norms. In many collectivist societies, including Indonesia, emotional suffering and existential fatigue are often communicated indirectly through culturally meaningful expressions rather than explicit statements about suicidal intent. Cultural idioms of distress may therefore shape how individuals interpret and respond to questionnaire items related to life disengagement or thoughts about death [42], [43].

Within the Indonesian sociocultural context, concepts such as *pasrah* (surrender to fate) and *ikhlas* (spiritual acceptance) are commonly invoked to describe the process of accepting adversity or hardship. These constructs are generally viewed as adaptive coping mechanisms grounded in religious and spiritual frameworks, encouraging patience and meaning-making in difficult circumstances [44], [45]. In the Indonesian cultural context, belief systems rooted in local philosophical traditions often emphasize resilience, harmony, and meaning-making as ways of coping with adversity [46]. Educational and counseling research in Indonesia also demonstrates that strengthening students' sense of meaning in life can improve psychological well-being and reduce vulnerability to mental health problems [47]. Empirical studies further suggest that spirituality may moderate the relationship between hopelessness and suicidal behavior, functioning as a psychological resource that buffers individuals from progressing toward more severe forms of suicidality [48].

However, in certain situations, these culturally valued expressions of resignation may also overlap with subtle forms of psychological withdrawal from life. Individuals experiencing passive suicidal ideation may therefore articulate feelings of indifference toward life or diminished self-preservation in ways that resemble culturally normative expressions of acceptance rather than explicit suicidal intent.

This cultural dynamic may partly explain the minor misfit observed in several negatively phrased items within the Rasch analysis. Items involving negation or indirect references to death may be interpreted differently across respondents depending on their cultural understanding of resignation, fate, or spiritual acceptance. Cross-cultural research has shown that standardized psychological measures can produce interpretive variability when applied in settings where expressions of distress are shaped by culturally specific moral or spiritual frameworks [49], [50]. Consequently, the development of culturally grounded instruments such as the D-PSI Scale is essential to ensure that early signs of psychological disengagement from life are accurately identified without misinterpreting culturally normative coping expressions.

Understanding these cultural nuances is particularly important for suicide prevention efforts, as failure to account for culturally embedded expressions of distress may lead to under-detection of early suicidal cognition. Research conducted among Indonesian adolescents has shown that protective factors such as family cohesion, peer connectedness, and supportive social environments play a significant role in reducing vulnerability to suicidal ideation [51]. These findings highlight the importance of culturally sensitive assessment approaches that can distinguish between normative expressions of spiritual acceptance and early indicators of psychological disengagement from life.

The development and validation of the D-PSI Scale also carry important implications for technology-enabled suicide prevention in higher education as an early detection tool. As digital learning environments increasingly mediate students' academic experiences, educational institutions are gaining access to large volumes of behavioral and engagement-related data through learning management systems and other digital platforms. These data sources offer new opportunities for identifying early indicators of psychological disengagement that may precede more severe mental health risks [52], [53].

Passive suicidal ideation represents one such construct that may serve as an early indicator of psychological vulnerability in educational settings. Research on student engagement in digital learning environments has shown that patterns such as reduced participation, diminished curiosity, and withdrawal from collaborative learning activities may reflect underlying emotional disengagement rather than purely academic difficulties [54]. Recent studies also indicate that emerging digital environments—including virtual learning platforms and metaverse-based interactions—may influence students' psychological well-being, potentially contributing to emotional fatigue and social detachment when adequate counseling support is unavailable [55], [56]. Without validated psychological measures, however, it becomes difficult to distinguish between normal variations in learning behavior and early signs of psychological distress.

The Rasch-validated D-PSI Scale provides a potential bridge between psychological assessment and emerging educational technologies. By operationalizing the cognitive state described as the "wish not to live," the instrument provides a measurable indicator that could inform learning analytics models, digital counseling platforms, and AI-based early-warning systems designed to support student well-being. Recent studies have highlighted the potential of artificial intelligence and data-driven analytics to improve early detection of suicide risk, particularly when psychological constructs are integrated with behavioral data derived from digital environments [57], [58].

Nevertheless, the integration of psychological screening tools into educational technology systems requires careful ethical consideration. Suicide prevention technologies must prioritize student privacy, informed consent, and supportive intervention rather than surveillance-based monitoring. In addition to technological

systems, human-centered support structures such as peer counseling programs can also play a crucial role in helping students manage psychological distress and learning-related challenges within educational institutions [53]. Ethical frameworks for digital health and suicide research emphasize that early detection systems should function as supportive mechanisms that assist educators and counselors in providing timely care rather than labeling individuals as high-risk without contextual understanding [59], [60]. Early identification of suicide-related cognition is particularly important because preventive interventions are most effective when implemented before individuals progress toward more severe or method-specific suicidal behaviors [61].

This study contributes several novel insights to the literature on suicidality measurement and prevention in educational contexts. First, it introduces a psychometrically validated instrument specifically designed to assess passive suicidal ideation, a construct that has historically received less empirical attention compared to active suicidal intent. While many existing instruments focus on the wish to die or explicit suicidal planning, the D-PSI Scale operationalizes the earlier cognitive state described as the "wish not to live," which may represent a transitional phase preceding more severe suicidal cognition [39], [41].

Second, the use of Rasch model analysis provides a rigorous measurement framework that enables passive suicidal ideation to be quantified along a latent continuum, improving the precision and interpretability of psychological assessment. Third, this study extends the relevance of suicidality research to the field of educational technology, demonstrating how validated PSI indicators may inform the development of learning analytics, digital counseling platforms, and AI-supported early detection systems aimed at protecting student wellbeing in digital learning environments.

This study possesses several strengths that contribute to the robustness of its findings. First, the study employs Rasch model analysis, which provides a rigorous psychometric framework for evaluating item functioning, measurement precision, and scale targeting. Unlike traditional classical test approaches, Rasch modeling enables ordinal survey responses to be transformed into interval-level measurements and allows detailed examination of item difficulty and person reliability. Second, the study involves a relatively large and culturally diverse sample, allowing the instrument to capture variations in passive suicidal ideation across multiple demographic backgrounds. Third, the development of the D-PSI Scale integrates theoretical perspectives from suicidology with emerging concerns in educational environments, particularly the growing need for early detection tools that can inform preventive interventions in higher education settings.

Despite these strengths, several limitations should be acknowledged. First, the cross-sectional design of the study does not allow conclusions regarding causal relationships or the temporal progression from passive suicidal ideation to more severe forms of suicidality. Longitudinal research is therefore necessary to examine whether early cognitive disengagement measured by the D-PSI Scale predicts future suicidal behaviors. Second, the sample composition was dominated by adolescents and emerging adults, which may limit the generalizability of the findings to older or clinical populations. Third, the use of self-report instruments introduces the possibility of social desirability bias, particularly in cultural contexts where discussing suicide-related thoughts may still carry stigma [57]. Fourth, several items exhibited minor misfit in the Rasch analysis, suggesting that linguistic nuances or cultural interpretations of negatively phrased items may influence response patterns.

Future research may extend this work in several directions. Longitudinal studies are needed to evaluate the predictive validity of D-PSI scores for later suicidal ideation or behavior. Additionally, future studies should examine measurement invariance across demographic groups to ensure that the scale functions consistently across cultural and gender contexts [64]. Finally, interdisciplinary research integrating psychological assessment with educational technology systems may further explore how PSI indicators can be incorporated into digital counseling services, learning analytics models, or AI-assisted early detection frameworks for student well-being [57].

4. CONCLUSION

This study aimed to develop and psychometrically validate the Distinctive Passive Suicidal Ideation (D-PSI) Scale and to examine its relevance for technology-supported suicide prevention in higher education. The findings indicate that the D-PSI Scale demonstrates strong psychometric performance based on Rasch model analysis, including high person reliability, acceptable item fit statistics, ordered rating-scale thresholds, and appropriate person–item targeting. These results confirm that the scale is capable of reliably measuring early manifestations of passive suicidal ideation, particularly the cognitive state described as the "wish not to live," and can differentiate individuals across low to moderate levels of psychological disengagement from life. Such measurement capability provides an empirical foundation for identifying early suicidal cognition before it develops into active suicidal intent. Nevertheless, several limitations remain, including minor item misfit that may reflect linguistic and cultural nuances in interpreting resignation or spiritual acceptance, as well as the dominance of adolescent and emerging adult participants in the sample. Future research should therefore examine cross-cultural measurement invariance and differential item functioning to ensure the stability of the instrument across diverse populations, as well as conduct longitudinal studies to evaluate the predictive validity of passive suicidal ideation for later suicidal behaviors. By providing a Rasch-validated instrument for assessing early-stage suicidal cognition,

the D-PSI Scale offers a promising foundation for integrating psychological screening indicators into digital counseling platforms, learning analytics systems, and other technology-based student support mechanisms aimed at strengthening suicide prevention in higher education.

ACKNOWLEDGEMENTS

We would like to thank our fellow authors and institutions for their moral and intellectual support throughout the writing process. Especially to Indonesian Education Scholarship (BPI), Center for Higher Education Funding and Assessment (PPAPT), and Indonesian Endowment Fund for Education (LPDP), for the financial support (funding ID: 202327092430). This financial support has played an important role in enabling the writing of this article to be carried out from the initial stages to the analysis.

AUTHOR CONTRIBUTIONS

Conceptualization, R.H. and M.R.; Methodology, R.H. and N.H.; Software, R.H.; Validation, R.H., M.R. and N.H.; Formal Analysis, R.H.; Investigation, R.H.; Resources, M.R.M.M.; Data Curation, R.H.; Writing – Original Draft Preparation, R.H.; Writing – Review & Editing, M.R., N.H., and M.M.; Visualization, R.H.; Supervision, M.R., N.H., M.M., and M.B.A.T.; Project Administration, R.H.; Funding Acquisition, R.H.

INFORMED CONSENT STATEMENT

Informed consent was obtained from all participants prior to their participation in the study. Participants were presented with an online consent form outlining the study objectives, procedures, potential risks, and confidentiality assurances. Participation was voluntary, and respondents had the right to withdraw at any point without penalty. No personally identifiable information was collected, and all data were analyzed in aggregate form to ensure anonymity. Participants provided their consent by voluntarily proceeding with the questionnaire after reading the informed consent statement.

CONFLICTS OF INTEREST

The authors declare no conflict of interest. This research was supported by Indonesian Endowment Fund for Education (LPDP). The funders had no role in the design of the study; in the collection, analysis, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

During the preparation of this work, the author(s) used ChatGPT-5 to translate and paraphrase the sentences to make them more in line with proper academic English. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the published article.

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