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The Role of Psychological Distress on High School Students' Meaning in Life: Gender Analysis

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Abstract / *Abstrak*

This study examined the relationship between psychological distress and meaning in life among senior high school students and whether it differed by gender in a predominantly Sundanese sample of adolescents (75.2%) in Bandung. Participants were 709 students (351 males, 358 females) selected using multistage sampling at the school level and convenience sampling at the class level. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) and Multi-Group Analysis (MGA), preceded by the Measurement Invariance of Composite Models (MICOM) procedure. Psychological distress was significantly and negatively related to meaning in life for both male ($\beta = -0.305$; $p < .001$) and female students ($\beta = -0.396$; $p < .001$). Parametric tests, bootstrap PLS-MGA, and permutation tests consistently indicated no significant difference in path coefficients between groups ($p > .05$). Thus, psychological distress is associated with a diminished sense of meaning in life among adolescents, regardless of gender.

Penelitian ini menguji hubungan antara distres psikologi dan makna hidup pada siswa sekolah menengah atas (SMA), serta apakah hubungan tersebut berbeda antara siswa laki-laki dan perempuan pada sampel yang didominasi remaja etnis Sunda (75,2%) di Kota Bandung. Partisipan terdiri atas 709 siswa SMA (351 laki-laki, 358 perempuan) yang dipilih dengan multistage sampling di tingkat sekolah dan convenience sampling di tingkat kelas. Data dianalisis menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM) dengan Multi-Group Analysis (MGA), didahului uji Measurement Invariance of Composite Models (MICOM). Distres psikologi berhubungan negatif secara signifikan dengan makna hidup, baik pada siswa laki-laki ($\beta = -0,305$; $p < 0,001$) maupun perempuan ($\beta = -0,396$; $p < 0,001$). Uji parametrik, bootstrap PLS-MGA, dan uji permutasi secara konsisten menunjukkan selisih koefisien jalur antarkelompok tidak signifikan ($p > 0,05$). Dengan demikian, distres psikologis berkaitan dengan makna hidup yang lebih rendah pada remaja, tanpa perbedaan antara laki-laki dan perempuan.

Keywords / *Kata kunci*

Psychological Distress; Meaning in Life; Senior High School; Gender

Psychological Distress; Makna Hidup; Sekolah Menengah Atas; Jenis Kelamin

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Introduction

Adolescence is often identified as a transitional period marked by dynamism and emotional fluctuation across an individual's developmental lifespan. According to Erikson's psychosocial theory, this period is characterized by an identity crisis, a process of critical self-evaluation that includes determining one's direction and goals for the future (Erikson, 1968). Adolescence is also a crucial transition marked by simultaneous maturation across physical, neurobiological, cognitive, and socioemotional domains, as well as by shifts in the individual's social context (Kim, 2021). Beyond these rapid internal changes, adolescents face several developmental tasks that must be accomplished as a foundation for the competencies and skills of adulthood.

Most adolescents navigate this period smoothly, however, some experience difficulty meeting environmental demands, which leads to psychological distress. Psychological distress is described as a nonspecific mental health condition characterized by symptoms of anxiety and depression, difficulty coping with the demands of daily life, and somatic complaints (Anyanwu, 2023; Drapeau et al., 2012). High psychological distress not only affects current emotional states but also impacts daily functioning, such as diminished academic engagement and learning

motivation (Yin et al., 2023), alcohol and psychoactive substance consumption, risky sexual behaviors (Anyanwu, 2023), and school dropout (Butterworth & Leach, 2018).

Furthermore, prolonged psychological distress may increase the risk of more serious psychological problems. Adolescents therefore need a source of psychological protection that allows them to face daily life with optimism. Frankl (1969) asserted that humans have a basic, innate drive to find meaning (will to meaning). According to Frankl, meaning in life is a subjective reason to keep living (a reason to live) that can be found in any situation, even amid suffering and life crises (Jiang et al., 2026; Steger et al., 2006). Adolescents who are able to find meaning in their life experiences tend to have a clearer future orientation and greater resilience, and thus show greater adaptability to psychological distress (Dulaney et al., 2018; Li et al., 2017).

Meaning in life functions as an internal protective resource for maintaining emotional stability (Dulaney et al., 2018). It is conceptualized as individuals' cognitive understanding and subjective experience of the significance and purpose of their existence. The construct comprises two dimensions: presence of meaning and search for meaning. Presence of meaning reflects the degree to which individuals experience their lives as having significance, direction, and a clearly defined existential purpose. Search for meaning represents an active and ongoing process of identifying, articulating, or deepening one's understanding of life purpose (Steger et al., 2006). During adolescence, both dimensions develop dynamically alongside identity formation, value exploration, and social experiences (Negru-Subtirica et al., 2016; Steger et al., 2009)

Suffering is not necessarily a negative experience, it can take on positive value when individuals are able to find meaning in it. This capacity to find meaning is the psychological mechanism that reduces distress, enabling individuals not only to endure but also to grow amid adversity (Arslan et al., 2020). Nevertheless, this dynamic is not linear. The relationship is bidirectional: meaning in life can serve as a buffer against psychological distress, whereas prolonged psychological distress may erode an individual's capacity to find meaning in life (distress-to-meaninglessness framework) (Boreham & Schutte, 2023; Li et al., 2017).

The pattern of association between psychological distress and meaning in life is not the same for all adolescents. A meta-analysis found that females experience higher levels of psychological distress than males (Salk et al., 2017). Similarly, Matud et al. (2024), showed that females report higher levels of chronic stress, minor daily hassles, and psychological distress than males.

For meaning in life, empirical findings across populations remain inconsistent. Yu et al. (2017) reported that the protective effect of presence of meaning against depressive symptoms was stronger among females than among males. In contrast, a meta-analysis by He et al. (2023) showed that gender did not moderate the relationship between meaning in life and psychological distress. Meanwhile, differences in levels of search for meaning between males and females are very small or not statistically significant (Negru-Subtirica et al., 2016; Zhang et al., 2018). These inconsistent findings suggest that whether gender alters the strength of the relationship between psychological distress and meaning in life remains unclear and therefore warrants further examination.

Research on psychological distress and meaning in life is largely rooted in Western cultures, which differ conceptually from Asian cultural values. These differences can be explained by Markus & Kitayama (1991) concept of self-construal, which distinguishes between independent self-construal (the self as an autonomous entity) and interdependent self-construal (the self as closely bound to the social environment). Both patterns of self-conceptualization are deeply rooted in the cultural values within which individuals are raised.

In societies that emphasize interdependence, the dynamics of distress and the fulfillment of meaning in life rest on relationships with others, that is, on mutual dependence, rather than solely on individual agency or internal attributes (Jiang et al., 2026; Ninin, 2015). This condition aligns with the collectivist characteristics of Indonesian society, where individuals are closely embedded in social relations. Consequently, the dynamics of distress and psychological well-being do not center on autonomy or personal achievement, but rather rest on relational harmony and acceptance from the social environment (Joshanloo et al., 2021; Ninin, 2015).

Sarfika et al. (2026) found that psychological distress among Indonesian adolescents is strongly rooted in relational dynamics, including the

quality of family support, academic demands, and the degree of acceptance by peers. Similarly, the construction and experience of meaning in life in the Indonesian context reflect distinctive contextual characteristics. These characteristics are articulated through a collectivistic cultural order, close relational ties, and the internalization of religious values and local wisdom (Ibad et al., 2026; Marhayati et al., 2026; Ninin, 2015).

The Sundanese people uphold the philosophy of silih asah, silih asih, silih asuh, as both a worldview and a fundamental foundation of social relations. This principle guides individuals to consistently prioritize noble values, such as mutual respect, affection, and cooperation in everyday interactions (Ibad et al., 2026). These cultural values are not static, they continue to develop through parenting practices and daily social interactions.

Most respondents in this study were Sundanese, so Sundanese culture is important for interpreting the findings. Sundanese people tend to maintain social harmony, care about how others see them, try to protect others' feelings, and hold the cultural norm of ewuh pakewuh a feeling of reluctance or hesitation out of politeness (Ibad et al., 2026; Rosidi, 2010, as cited in Perceka et al., 2019; Rahman et al., 2018). Keeping harmony often means that individuals hold back from expressing themselves. As a result, they tend to use non-assertive coping strategies, especially suppressing negative emotions, to avoid interpersonal conflict (Perceka et al., 2019) When emotions are suppressed for a time, stress can build up and may reduce life satisfaction and make it harder to find meaning in life (Li et al., 2017; Perceka et al., 2019).

This study involved middle adolescents aged 15-17 years (Feldman & Elliott, 1990, as cited in Curtis, 2015). This age range was selected because basic cognitive capacities reach maturity at around age 16, enabling reflective processes and deeper meaning-making (Icenogle et al., 2019). In addition, age 15 is a turning point at which identity synthesis becomes increasingly integrated and identity confusion begins to decline significantly (Bogaerts et al., 2021). During this transitional phase, cognitive maturity and the exploration of meaning in life also reach an important point at which they can act as protective factors against increasing psychological distress (Jiang et al., 2026; Negru-Subtirica et al., 2016).

This study was conducted in Bandung because the city represents an urban context with complex social dynamics, a competitive academic climate, and relatively high mental health vulnerability. Epidemiologically, West Java has the highest prevalence of depression in Indonesia among individuals aged 15–24 years (Kemenkes, 2023). Within this context, Bandung was selected because, as the provincial capital, it is considered to represent the center of social and educational dynamics in West Java. This choice is further supported by screening data from the Free Health Check program (Cek kesehatan Gratis/CKG)

This choice is further supported by screening data from the Free Health Check program (CKG). These data showed that 48% of students in Bandung were indicated to have mental health problems, with 25.79% at the senior high school level (Iman, 2026). This high psychological vulnerability makes Bandung an appropriate and relevant setting for examining the dynamics of distress and the mechanisms of meaning-making among adolescents.

Based on this background, this study aims (1) to examine the relationship between psychological distress and meaning in life among public senior high school students in Bandung, who are predominantly Sundanese, and (2) to compare this relationship between male and female students using Multi-Group Analysis (MGA). Accordingly, the following hypotheses were proposed: (H_1) psychological distress is signicantly associated with meaning in life among public senior high school students; and (H_2) the relationship between psychological distress and meaning in life differs between male and female students.

Method

Research Design

This study employed a quantitative cross-sectional design. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM; Hair et al., 2022) with SmartPLS 4.0 software to examine the relationship between psychological distress and meaning in life among senior high school students, and to test whether this relationship differs between male and female students using Multi-Group Analysis (MGA).

Participants

Participants were 709 public senior high school students (Grades 10-12) aged 15-17 years (middle adolescents) in Bandung, Indonesia. The sample comprised 351 male (49.5%) and 358 female (50.5%) students, with Sundanese being the largest ethnic group (n = 533; 75.2%). The sampling technique used was multistage sampling

at the school level, followed by convenience sampling at the class level.

Bandung comprises four administrative areas (north, south, east, and west), each consisting of a varying number of subdistricts, and the number of public senior high school per subdistricts also varies. In the first stage, one public senior high school was randomly selected from each subdistrict that had at least one such schools. In the second stage, one school was randomly selected from among the schools drawn in each area, yielding four schools, each representing one area of the city.

Within each selected school, classes were selected based on schedule availability, that is, classes whose sessions did not conflict with learning activities or whose subjects were less demanding, and all students present in the selected classes were included as participants.

Ethical approval for this study was obtained from the Human Research Ethics Committee of Universiti Pendidikan Sultan Idris (UPSI), and permission for data collection was obtained from the West Java Provincial Education Office and the National and Political Unity Agency of West Java. Informed consent was obtained prior to data collection from the schools, acting on behalf of the students' parents/guardians, and from the students themselves. The inclusion criteria were being aged 15-17 years, consistent with the middle adolescence age range, and being willing to participate in the study, as indicated on the consent form.

Data Collection Procedure

Data were collected face-to-face at each school. A questionnaire containing a total of 20 items (K10 and MLQ) was administered directly to the students. Instructions were delivered by the researcher with the help of research assistants, who also directly supervised the completion process. Completion took approximately 30 minutes.

Instruments

Psychological distress was measured using the Kessler Psychological Distress Scale (K10), adapted into Indonesian by Tran et al. (2019). The K10 is a self-report instrument consisting of 10 items rated on a five-point Likert scale (1 = never to 5 = always), in which respondents answer based on their experiences over the past four weeks. The instrument captures emotional states such as feeling nervous, hopeless, restless, tired, or worthless, and feeling that everything is more difficult than usual. The instrument is unidimensional and has good reliability, with Cronbach's alpha > .80 (Tran et al., 2019).

Meaning in life was measured using the Meaning in Life Questionnaire (MLQ; Steger et al., 2006), which consists of two dimensions: presence of meaning and search for meaning. The MLQ comprises 10 items rated on a seven-point Likert scale (1 = absolutely untrue to 7 = absolutely true). The MLQ was adapted by the researcher following the cross-cultural adaptation stages proposed by Borsa et al. (2012). The adaptation results showed adequate convergent validity (AVE = .668) and composite reliability (ρc = .797), both of which met the recommended criteria.

Data Analysis

Data were analyzed using PLS-SEM with SmartPLS version 4.0. Meaning in life was modeled as a reflective-reflective second-order construct using the two-stage approach (Hair et al., 2022).

Several criteria were used to assess the validity and reliability of the measurement model following established guidelines (Hair et al., 2022). Indicators were retained if their outer loadings were ≥ .70, and indicators with loadings below .40 were removed from the model. Indicators with loadings between .40 and .70 were retained unless their removal substantially increased the construct's composite reliability (ρc) or raised the AVE above the threshold. Constructs were considered to demonstrate convergent validity if AVE ≥ .50 and to be reliable if ρc ≥ .70. Discriminant validity was assessed using the heterotrait-monotrait ratio (HTMT), with a threshold of < .85, while multicollinearity was examined using the variance inflation factor (VIF), with values expected to be below 5 (Hair et al., 2022). The structural model was evaluated using path coefficients, the coefficient of determination (R^2), and effect size f^2 (0.02 small; 0.15 medium; 0.35 large) (Hair et al., 2022). The significance of the path coefficient was tested using bootstrapping with 5,000 subsamples (two-tailed) at a significance level of $\alpha = .05$.

To compare the relationship between psychological distress and meaning in life between male and female students, measurement invariance was first tested using the Measurement Invariance of Composite Models (MICOM) procedure (Henseler et al., 2016). MICOM comprises three steps that assess configural invariance, compositional invariance (a correlation-based permutation test), and the

Table 1
Outer Loading, Reliability, and Convergent Validity (First-Order Constructs, Overall Sample)

Construct	Indikator	Outer Loading	*pc*	AVE
Psychological Distress			.901	.537
	PD10	.798		
	PD3	.715		
	PD4	.757		
	PD5	.741		
	PD6	.738		
	PD7	.791		
	PD8	.513		
	PD9	.770		
Presence of Meaning			.896	.637
	PM1	.839		
	PM4	.878		
	PM5	.864		
	PM6	.804		
	PM9	.566		
Search for Meaning			.880	.602
	SM10	.481		
	SM2	.825		
	SM3	.822		
	SM7	.849		
	SM8	.836		

Table 2
Discriminat Validity (HTMT) of the First-Order

	Distres psikologi	Presence of Meaning	Search for Meaning
Distres psikologi	-		
Presence of Meaning	.410	-	

equality of composite means and variances. Multi-Group Analysis (MGA) was then conducted using three complementary approaches: the parametric test, bootstrap-based PLS-MGA, and the permutation test. All three methods used two-tailed tests, and differences in path coefficients were considered significant if $p < .05$ (Hair et al., 2022).

Results

Measurement Model Evaluation

First-Order Constructs. Two psychological distress indicators, PD1 (.071) and PD2 (.129), were removed because their outer loadings were below .40, leaving eight indicators after removal.

Three indicators, PD8, PM9, and SM10, fell within the .40 to .70 range but were retained because their removal did not meaningfully increase ρc or AVE. After removal, all first-order constructs met the criteria for composite reliability and convergent validity, as shown in Table 1.

The discriminant validity of the three first order constructs was assessed using the HTMT criterion. As detailed in Table 2, all values were below .85, including that between presence of meaning and search for meaning (HTMT = .439), confirming adequate discriminant validity.

Second-Order Construct. Following the two-stage approach, meaning in life was modeled as a second-order construct comprising presence of meaning and search for meaning. Table 3 presents the reliability and validity of the second-order model.

Discriminant validity at the second-order level is presented in Table 4.

Multicollinearity among indicators was examined using the variance inflation factor (VIF) in the overall sample. All VIF values ranged from 1.178 to 2.045, well below the threshold of 5, indicating no meaningful multicollinearity.

Structural Model and Hypothesis Testing

The structural model was examined through path coefficients, their significance (based on

Table 3
Outer Loading, Reliability, and Convergent Validity (Second-Order Constructs, Overall Sample)

Construct	Indikator	Outer Loading	*pc*	AVE
Distres psikologi			.902	.538
	PD10	.796		
	PD3	.692		
	PD4	.769		
	PD5	.751		
	PD6	.727		
	PD7	.797		
	PD8	.549		
	PD9	.758		
Meaning in Life			.733	.607
Presence of Meaning		.996	-	-
Search for Meaning		.472	-	-

Table 4
Discriminat Validity (HTMT) of the Second-Order

	Distres psikologi	Meaning in Life
Distres psikologi	-	
Meaning in Life	.361	-

Table 5
Measurement Invariance Testing (MICOM Steps 2 and 3)

Construct	Step 2 Compositional invariance (*p*)	Step 3a Mean difference (*p*)	Step 3b Variance difference (*p*)
Distres psikologi	.943	.967	.716
Meaning in Life	.981	.199	.058

bootstrapping), and the variance explained in each gender group. Measurement invariance testing (MICOM) was conducted first to ensure the validity of between group comparisons before hypothesis testing.

Measurement Invariance

Before comparing the structural model across gender groups, measurement invariance was tested using the three step MICOM procedure (Hair et al., 2022; Henseler et al., 2016). Configural invariance (Step 1) was established by design, as identical indicators per measurement model, data treatment, and algorithm settings were applied to both groups. Compositional invariance (Step 2) and the equality of composite means and variances (Step 3) were tested using a permutation procedure and are presented in Table 5.

All *p* values exceeded .05, indicating that compositional invariance and the equality of composite means and variances were established for both constructs (the variance equality test for meaning in life, p = .058, approached but did not reach significance). Thus, full measurement invariance was established, allowing a valid comparison of path coefficients between the male and female groups using MGA.

The relationship between psychological distress and meaning in life was statistically significant in both groups (Table 6), supporting Hypothesis 1 (H_1 supported). The relationship was negative, indicating that higher psychological distress was associated with lower meaning in life, and vice versa. The structural model results for each group are presented in Figures 1 and 2.

Multi-Group Analysis (MGA)

To test whether the strength of the relationship between psychological distress and meaning in life differed between male and female students (Hypothesis 2), three complementary MGA methods were applied: the parametric test, bootstrap-based PLS-MGA, and the permutation test. The results are presented in Table 7.

Across all three methods, the difference in path coefficients between male (β = -0.305) and female students (β = -0.396) was not statistically significant ($p > .05$). Although the negative relationship between psychological distress and meaning in life appeared descriptively stronger

Table 6
Structural Path Results by Gender Group

Group	β	t	p value	R^2	R^2 adjusted	f^2
Total ($N = 709$)	-0.352	11.049	< .001	.124	.123	0.142
Male ($n = 351$)	-0.305	6.643	< .001	.093	.090	0.103
Female ($n = 358$)	-0.396	9.801	< .001	.157	.155	0.186

Table 7
Multi-Group Analysis: Comparison of Path Coefficients Between Male and Female Students

Method	Δβ (Male - Female)	Test Statistic	p value
Parametric test	0.091	t = 1.495	.135
Bootstrap-based PLS-MGA	0.091	-	.136
Permutation test	0.091	-	.151

among female students, this difference did not reach statistical significance. Therefore, Hypothesis 2 (H_2), which proposed that the relationship between psychological distress and meaning in life differs significantly between male and female students, was not supported.

Discussions

This study aimed to examine the role of psychological distress in the formation of meaning in life in a sample predominantly of Sundanese ethnicity, and to investigate whether this role differs between male and female students. The results showed that psychological distress was negatively associated with meaning in life among public senior high school students, thus supporting the first hypothesis (H1). In contrast, the second hypothesis (H_2) was not supported because there was no significant difference in the strength of the relationship between psychological distress and meaning in life by gender. This finding was consistently confirmed by the three multi-group analysis (MGA) approaches used. Each hypothesis is discussed further in the following sections.

Psychological Distress and Meaning in Life (H1)

The results showed that psychological distress negatively predicted meaning in life among senior high school students (H_1), both in the overall sample (β = -0.352) and in the male (β = -0.305) and female (β = -0.396) groups. This finding is consistent with the distress-to-meaninglessness framework, which posits that the accumulation of psychological distress over time can weaken adolescents' sense of meaning in life (Li et al., 2017). In the overall sample, psychological distress explained 12.4% of the variance in meaning in life ($R^2 = .124$ and $f^2 = 0.142$), which is categorized as a small effect according to the criteria of Cohen (1988), with $f^2 = 0.103$ for males and $f^2 = 0.186$ for females. This indicates that most of the variance in meaning in life is explained by factors other than psychological distress, consistent with the nature of meaning in life as a multidimensional construct influenced by various psychological and contextual factors.

A meta-analysis by He et al. (2023) found that presence of meaning was correlated with lower psychological distress across various cultural contexts, and that variation in the strength of this relationship was determined more by the type of distress indicator used than by gender. This finding is consistent with the present results, in which a negative relationship was found in both gender groups.

Psychologically, the main developmental task of adolescence is resolving the crisis of identity versus role confusion (Maehler & Hernández-Torrano, 2025; Ragelienė, 2016). During this stage, adolescents begin to revisit their past self-perceptions and explore their life direction by getting to know themselves more deeply through fundamental questions, such as who they are, where their lives are heading, and what their role in society is. In earlier stages, they merely accepted the self-image shaped by their parents or childhood environment (Bogaerts et al., 2021; Negru-Subtirica et al., 2016; Ragelienė, 2016).

The search for identity goes hand in hand with the search for meaning in life and the formulation of life goals (Muttaqin et al., 2026; Negru-Subtirica et al., 2016; Steger et al., 2009), and search for meaning has been reported to be higher in younger age groups (emerging adulthood) than in older groups (Steger et al., 2009). Negru-Subtirica et al. (2016) demonstrated a link between identity exploration and the search for meaning in life during adolescence. In other words, as adolescents attempt to understand who

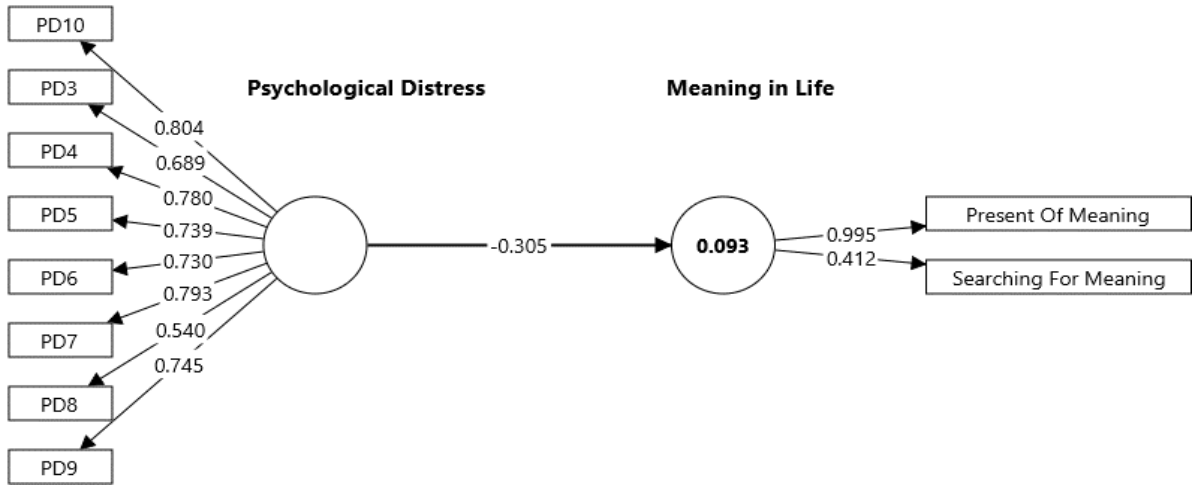


Figure 1. Structural Model of Psychological Distress and Meaning in Life in the Male Group

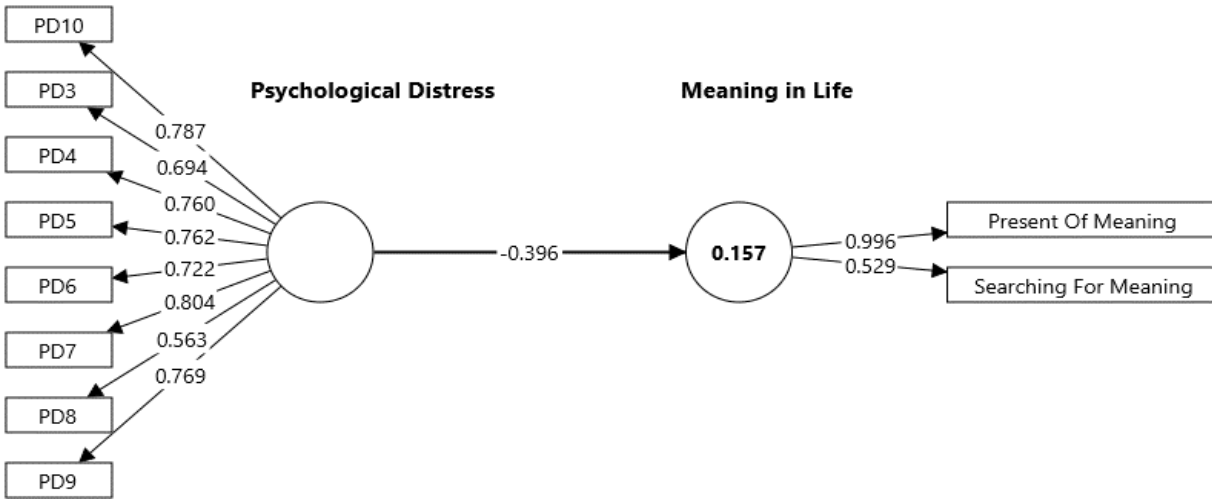


Figure 2. Structural Model of Psychological Distress and Meaning in Life in the Female Group

they are, they are simultaneously constructing meaning in life. This suggests that identity exploration and the search for meaning cannot be viewed as two separate processes but rather as two interrelated aspects of a cognitive-existential developmental process during adolescence. Among Indonesian adolescents, religious beliefs and life goals are salient identity domains (Muttaqin et al., 2026).

Bogaerts et al. (2021) identified a cubic age trend in identity development. Between the ages of 12 and 15, identity synthesis decreased as identity confusion increased. However, at ages 15-16, a turning point occurred at which identity synthesis began to increase and identity confusion declined until age 23. This developmental pattern underscores that middle adolescence is a transitional period that is theoretically the most dynamic for observing the relationship between psychological distress and the formation of meaning in life, compared with early adolescents, whose identity has not yet begun to form, or emerging adults, whose identity is relatively more stable.

During this transitional phase, adolescents also face various pressures from developmental demands that may trigger distress. Li et al. (2017) reported that suicidal ideation among adolescents was mainly caused by two major stressors, namely academic pressure and interpersonal relationship crises. This occurs because stressful events are internalized as persistent psychological distress due to coping failure, which ultimately reduces life satisfaction and the experience of meaning. Similarly, Indonesian senior high school students experience higher distress due to academic pressure and peer problems (Sarfika et al., 2026). Distress arises when environmental demands exceed adolescents' ability to cope with them (Lazarus & Folkman, 1984) Prolonged stressors

lead to exhaustion, in which physical and mental capacities decline after passing through two earlier stages, namely alarm and resistance (Selye, 1976). This is consistent with the broaden-and-build theory of (Fredrickson, 2001), which explains that negative affect narrows individuals' thought and attention repertoires (narrowed thought-action repertoire), thereby reducing the capacity for deep reflection, linking experiences to life goals, or making meaningful sense of events. The implication is that adolescents not only have difficulty finding meaning in their experiences but also lose one of the primary means of forming their identity.

Based on the literature, in the context of Indonesian adolescents, particularly Sundanese adolescents, the search for identity does not stand alone in individualistic autonomy as in the West but proceeds through the interdependent self and the religious self (Ninin, 2015). This is in line with Muttaqin et al. (2026), who found that religious beliefs, purpose in life and family were identity domains most frequently throught about by Indonesian adolescents.

Boreham and Schutte (2023) stated that the relationship between meaning in life and psychological distress is reciprocal. Prolonged stress can weaken meaning in life (Li et al., 2017), whereas meaning in life serves as a buffer against psychological distress (Ostafin & Proulx, 2020). Distress is positively correlated with search for meaning and negatively correlated with presence of meaning (He et al., 2023). This pattern can be seen as an individual's attempt to regain weakened meaning.

These developmental and meaning-making processes take place within a particular cultural context. Most participants in this study were Sundanese (75.2%). Unlike the independent self, which emphasizes autonomy, the interdependent self views itself as part of relationships with others (Markus & Kitayama, 1991). Ninin (2015) explained that the Sundanese self tends to be relationship oriented, and that individuals with an interdependent self feel most meaningful when they are situated and act within appropriate social relationships. This description is consistent with Samin youth in Central Java, who stated that meaning in life is built through social responsibility, togetherness, and spirituality rather than through individual self-actualization (Marhayati et al., 2026). In the context of ethnic identity, a study of 639 senior high school and vocational high school students in West Java showed that most respondents had high ethnic commitment and exploration (Rahman et al., 2018). In contrast, Fathurroja et al. (2018) found that Sundanese and Javanese adolescents in border areas showed low ethnic exploration, although their sense of ethnic belonging remained high. This indicates that ethnic identity varies according to the social and geographical context of adolescents' environments.

The main values and characteristics that shape the ethnic identity and behavior of Sundanese society include friendliness (*someah*), politeness, mutual cooperation, gentleness, tolerance, and sociability (Rahman et al., 2018), together with the philosophy of *silih asah, silih asih, silih asuh*, reflected in a harmonious and tolerant communal life (Ibad et al., 2026). According to Kembara et al. (2021), these character values are inherited and acquired from parents. Ninin (2015) also described Sundanese culture as largely shaped by Islam, in which the attainment of meaning in life is realized through the formation of a religious self. Thus, the values of kinship, mutual help, and religiosity may serve as resources that help adolescents navigate this transitional phase, because the processes of exploration and meaning-making rely not only on individuals' cognitive and affective capacities but are also supported by the surrounding social environment (Ibad et al., 2026; Ninin, 2015).

However, close social relationships also carry demands that must be met. Ninin (2015) observed that some group roles must be followed for the sake of group acceptance. Perceka et al. (2019) described that the habit of protecting others' feelings leads some members of Sundanese society to prefer concealing their feelings rather than expressing them, and that Sundanese people are known to want to be viewed favorably by others (Rosidi, 2010, as cited in Perceka et al., 2019). This tendency may make it difficult for adolescents to express their distress and, when combined with other pressures they face, may lead to an accumulation of internal distress that can reduce meaning in life.

Gender Comparison (H2)

In addition to examining the relationship between psychological distress and meaning in life, this study also examined whether there were differences between female and male adolescents. The results showed no significant difference in the strength of the relationship between the two variables across the two gender groups. This supports the meta-analytic findings of He et al. (2023), which showed that gender and mean age

did not act as moderators of the relationship between the two variables. Although the path coefficient for females (β = -0.396) was nominally larger than that for males (β = - 0.305), the difference (Δβ = .091) was not significant across all three MGA methods (parametric p = .135; bootstrap p = .136; permutation p = .151).

Before comparing the structural models, the MICOM test indicated adequate measurement invariance between the male and female groups. Thus, at both the level of instrument measurement and the strength of the structural relationship, the data consistently showed the same pattern across genders.

This finding should be distinguished from differences in levels of distress. The literature shows that females report higher depressive symptoms than males, with the difference peaking during adolescence (Salk et al., 2017), and higher mental distress among females in the general population (Matud et al., 2024). In other words, although females may experience higher levels of distress, the strength of the relationship between psychological distress and meaning in life in this study did not differ by gender. A similar pattern was reported among Chinese adolescents, in which gender made only a minimal contribution to model variance and did not determine either the direction or the strength of the relationship between psychological distress and meaning in life (Jiang et al., 2026).

Theoretically, this finding supports the logotherapy of Frankl (1969), which posits the *will to meaning* as a motivational drive possessed by every individual. This result is also consistent with the broaden-and-build theory of Fredrickson (2001), which explains that the cognitive and affective mechanisms linking psychological distress and meaning in life operate through psychological processes that are relatively common in adolescence and thus do not differ fundamentally between male and female adolescents.

Practically, these findings can serve as a basis for school-based psychological intervention programs that need not be differentiated by gender, given that the mechanism linking psychological distress and meaning in life shows a similar pattern among male and female students. In addition, interventions that focus on reducing negative effects, such as mindfulness and cognitive restructuring, may not only lower levels of psychological distress but also restore the cognitive capacity needed for the formation of meaning in life, particularly during middle adolescence.

Methodologically, this study has several strengths. First, it involved a relatively large number of respondents (709 students), which increases statistical power and the representativeness of the findings. Second, gender differences were examined using three complementary Multi-Group Analysis (MGA) approaches, producing more robust conclusions. Such a comprehensive multi method comparison remains relatively rare in adolescent psychology research in Indonesia.

This study has several limitations that warrant further consideration. First, the cross-sectional design does not allow conclusions to be drawn about a causal relationship between psychological distress and meaning in life. Second, the relatively small coefficient of determination (R^2=12.4%) indicates that psychological distress explains only a small proportion of the variance in meaning in life; thus, other factors contribute to the formation of meaning in life among adolescents. Third, data were collected only in Bandung, so generalization to other cultural contexts or regions of Indonesia should be made with caution. Fourth, this study did not measure interdependence or the characteristics of Sundanese society; thus, the cultural discussion is interpretive and based on the literature.

Several recommendations are offered for future research. First, longitudinal designs should be used to gain a more detailed understanding of the direction of the relationship between psychological distress and meaning in life. Second, future studies should distinguish developmental stages specifically by age, including early, middle, and late adolescence, to gain an in-depth understanding of the dynamics and variations in meaning-making at each developmental phase. Third, the sample should be expanded to various regions and cultural contexts in Indonesia so that the findings can be more broadly generalized. Fourth, future research should measure cultural context directly, for example through ethnic identity, Sundanese cultural values, or interdependent self-construal, so that the role of culture in the relationship between psychological distress and meaning in life can be tested empirically.

Conclusion

This study showed that psychological distress was significantly and negatively related to meaning in

life among public senior high school students in both the male and female groups. Psychological distress explained 12.4% of the variance in meaning in life, which is categorized as small. Although there was a slight difference in the strength of the relationship between groups, the results of the Multi-Group Analysis (MGA) confirmed that this difference was not statistically significant. These results reinforce the relevance of the distress-to-meaninglessness framework and the logotherapy perspective as theoretical frameworks that apply across genders. In addition, this study supports the theoretical premise that psychological distress can reduce the cognitive resources important for identity exploration and the formation of meaning in life during middle adolescence.

The sample of this study was dominated by Sundanese adolescents. These findings can be viewed from the perspective of the interdependent and communal culture that characterizes Sundanese society, in which adolescents' meaning-making processes, regardless of gender, rely heavily on relationships and social support that are relatively equally available to males and females within the Sundanese cultural structure.

This interpretation is contextual because no direct statistical analysis of ethnicity or interdependent self-construal was conducted. Notwithstanding this limitation, the results of this study indicate that meaning-based psychological interventions in school settings can be applied inclusively without gender differentiation, while still considering the relational and communal values relevant to the Sundanese adolescent population.

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Conflict of Interest
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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The authors acknowledge the use of Claude and NotebookLM to support the development of the conceptual framework, literature review, English translation, and language refinement. AI tools were not used to generate, fabricate, modify, or analyze empirical data, statistical procedures, or research findings. The authors take full responsibility for the originality, scientific integrity, and content of this manuscript.

Ethical Clearance
Ethical approval for this study was obtained from the Human Research Ethics Committee of Sultan Idris Education University Malaysia (Approval No. 2025-0831-01). Permission to collect data was granted by the West Java Provincial Education Office (*Dinas Pendidikan Provinsi Jawa Barat*) and the National and Political Unity Agency of West Java (*Badan Kesatuan Bangsa dan Politik Jawa Barat*). Informed consent prior to data collection was obtained from the school authorities representing the students' parents or guardians, as well as from the students themselves.

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