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Latent Profiles of Depressive Symptoms Among Indonesian Adolescents: Evidence from the Indonesia Family Life Survey 5 (IFLS-5)

[Profil Laten Gejala Depresi Pada Remaja Indonesia: Temuan dari *Indonesia Family Life Survey 5 (IFLS-5)*]

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Adolescent depression is a major public health issue, yet there is limited study on depressive symptoms among Indonesian adolescents. Identifying distinct subgroups within this population could help inform targeted prevention and intervention efforts. This study analyzed data from the Indonesia Family Life Survey 5 (IFLS-5) utilizing Latent Profile Analysis (LPA) to identify depressive symptom subgroups. Chi-Square Tests were utilized for univariate analysis, and Logistic Regression Analysis examined associated factors. Among 2,267 adolescents, two symptom profiles emerged: (1) "Low-Level" Depressive Symptoms Profile (73.31%); and (2) "High-Level" Depressive Symptoms Profile (26.69%). Sex or gender was the only significant factor in the univariate analysis, with Logistic Regression Analysis revealing that female adolescents were more likely to exhibit high levels of depressive symptoms. These findings suggest that female adolescents are at greater risk for more severe depressive symptoms, highlighting the need for targeted prevention and intervention strategies.

Keywords: adolescents, depression, Latent Profile Analysis (LPA)

Depresi pada remaja merupakan masalah kesehatan masyarakat yang signifikan, tetapi studi mengenai gejala depresi di kalangan remaja Indonesia masih terbatas. Identifikasi sub-kelompok yang berbeda dalam populasi ini dapat memberikan informasi penting bagi upaya pencegahan dan intervensi yang lebih terarah. Studi ini menganalisis data dari *Indonesia Family Life Survey 5 (IFLS-5)* dengan menggunakan *Latent Profile Analysis (LPA)* untuk mengidentifikasi sub-kelompok gejala depresi. Analisis univariat dilakukan menggunakan *Chi-Square Tests*, sementara *Logistic Regression Analysis* digunakan untuk mengidentifikasi faktor terkait. Dari 2.267 remaja yang dianalisis, ditemukan dua profil gejala depresi, yaitu: (1) Profil Gejala Depresi "Tingkat Rendah" (73,31%); dan (2) Profil Gejala Depresi "Tingkat Tinggi" (26,69%). Jenis kelamin atau *gender* merupakan satu-satunya faktor yang signifikan dalam analisis univariat, yang kemudian diperkuat dengan hasil *Logistic Regression Analysis* menunjukkan bahwa remaja perempuan memiliki kemungkinan lebih besar untuk mengalami gejala depresi tingkat tinggi. Temuan ini mengindikasikan bahwa remaja perempuan memiliki risiko lebih tinggi mengalami gejala depresi yang lebih parah, sehingga diperlukan strategi pencegahan dan intervensi yang lebih spesifik dan terfokus.

Kata kunci: remaja, depresi, *Latent Profile Analysis (LPA)*

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Depression represents one of the most prevalent mental health concerns among adolescents globally, with estimates suggesting that 10-20% of adolescents experience clinically significant depressive symptoms (World Health Organization [WHO], 2024). In Indonesia, there are approximately 45 million individuals between the ages of 10-19 years (United Nations Children's Fund [UNICEF] Indonesia, 2021). However, the burden of adolescent depression remains understudied despite its significant implications for educational outcomes, social development, and long-term mental health trajectories (Thapar et al., 2012). Depression in adolescents could affect multiple domains, including family, school, and social functioning (Jaycox et al., 2009). It is also a major risk factor for suicide and other psychiatric disorders (Hawton et al., 2013). Adolescent depression has also become an increasingly recognized public health concern in Indonesia. An analysis of a large dataset of adolescents in the country found that the prevalence of depression among those aged 15-17 years old was 5.1% (Suryaputri et al., 2022). While previous studies have begun to explore the correlates of adolescent depression (see Idris & Tuzzahra, 2023; Mubasyiroh et al., 2024; Sarfika et al., 2024), the overall understanding remains limited. Although examining correlates could provide valuable insights, it is still insufficient to capture the heterogeneity of depressive experiences among Indonesian adolescents. This highlights the need to move beyond traditional approaches toward more person-centered analytic approaches.

Recent advances in statistical modeling, particularly person-centered approaches, have introduced methods that allow for deeper evaluation beyond superficial explorations and enable a better understanding of specific subgroups based on symptom manifestation. These methods include Cluster Analysis, Latent Class Analysis (LCA), and Latent Profile Analysis (LPA; see Cleophas, 2012; Weller et al., 2020; Spurk et al., 2020). Cluster analysis techniques, such as K-means and hierarchical clustering, have been widely utilized; however, they are non-model-based and do not provide fit indices for model comparison (Cleophas, 2012). Latent Class Analysis (LCA) offers some improvement by enabling model comparison through fit statistics, but it is generally more appropriate for categorical data, making it more suitable for identifying subgroups based on categorical indicators closely related to the variable of interest (Weller et al., 2020). In contrast, Latent Profile Analysis (LPA) is a model-based approach that utilizes continuous indicators to identify distinct subgroups (often referred to as "profiles") based on individuals' response patterns (Spurk et al., 2020).

Depresi merupakan salah satu masalah kesehatan mental yang paling umum di kalangan remaja secara global, dengan estimasi bahwa 10-20% remaja mengalami gejala depresi yang signifikan secara klinis (World Health Organization [WHO], 2024). Di Indonesia, terdapat sekitar 45 juta individu berusia antara 10-19 tahun (United Nations Children's Fund [UNICEF] Indonesia, 2021). Namun, beban depresi remaja masih kurang diteliti walaupun implikasinya yang signifikan terhadap hasil pendidikan, perkembangan sosial, dan lintasan kesehatan mental jangka panjang (Thapar et al., 2012). Depresi pada remaja dapat memengaruhi banyak domain, termasuk keluarga, sekolah, dan fungsi sosial (Jaycox et al., 2009). Depresi juga merupakan faktor risiko utama untuk bunuh diri dan gangguan kejiwaan lainnya (Hawton et al., 2013). Depresi remaja juga telah menjadi masalah kesehatan masyarakat yang semakin diakui di Indonesia. Analisis terhadap *dataset* besar remaja di Indonesia menemukan bahwa prevalensi depresi pada kelompok usia 15-17 tahun adalah 5,1% (Suryaputri et al., 2022). Walaupun studi sebelumnya telah mulai mengeksplorasi korelasi depresi remaja (lihat Idris & Tuzzahra, 2023; Mubasyiroh et al., 2024; Sarfika et al., 2024), pemahaman secara keseluruhan masih terbatas. Meskipun mengkaji korelasi dapat memberikan wawasan berharga, hal tersebut masih belum cukup untuk menangkap heterogenitas pengalaman depresi di kalangan remaja Indonesia. Hal ini menyoroti perlunya beralih dari pendekatan tradisional menuju pendekatan analitik yang lebih berpusat pada individu.

Kemajuan terbaru dalam pemodelan statistik, khususnya pendekatan yang berpusat pada individu, telah memperkenalkan metode yang memungkinkan evaluasi yang lebih mendalam, melampaui eksplorasi yang dangkal dan memungkinkan pemahaman yang lebih baik tentang subkelompok spesifik berdasarkan manifestasi gejala. Metode tersebut meliputi *Cluster Analysis*, *Latent Class Analysis (LCA)*, dan *Latent Profile Analysis* (*LPA*; lihat Cleophas, 2012; Weller et al., 2020; Spurk et al., 2020). Teknik *cluster analysis*, seperti *K-means* dan pengelompokan (atau klasterisasi) hierarkis, telah banyak digunakan; namun, teknik tersebut tidak berbasis model dan tidak menyediakan indeks kecocokan (*fit indices*) untuk perbandingan model (Cleophas, 2012). *Latent Class Analysis (LCA)* menawarkan beberapa peningkatan dengan memungkinkan perbandingan model melalui statistik kecocokan (*fit statistics*), tetapi umumnya lebih sesuai untuk data kategoris, sehingga lebih cocok untuk mengidentifikasi sub-kelompok berdasarkan indikator kategoris yang berkaitan erat dengan variabel yang diminati (Weller et al., 2020). Sebaliknya, *Latent Profile Analysis (LPA)* adalah pendekatan berbasis model yang menggunakan

The authors believe that utilizing continuous depression symptom scales allows for a more accurate understanding of how Indonesian adolescents experience depression in different ways. By classifying individuals into specific profiles, Latent Profile Analysis (LPA) aids in tailoring interventions to target the most severe symptom profiles. This approach can prioritize interventions for subgroups with the highest symptom burden, thereby improving treatment outcomes (Saunders et al., 2016). The outcomes associated with each latent profile may benefit from differentiated approaches. For instance, offering more intensive interventions to those in high-symptom profiles while minimizing the risk of under- or overtreatment. This could improve therapeutic outcomes and reduce the likelihood of dropout or adverse experiences. These approaches have revealed meaningful heterogeneity in depressive symptom presentations among adolescents in the context of WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries, with distinct profiles characterized by varying combinations of cognitive, affective, and somatic symptoms (Conway et al., 2019). Depression in adolescents is often underdiagnosed, misinterpreted, or inadequately treated (Stein et al., 2006; Sihvola et al., 2007; Eapen & Črnčec, 2012), particularly in Low- and Middle-Income Countries (LMICs) such as Indonesia. Various factors may contribute to these challenges, including cultural and societal influences such as stigmatization (Hartini et al., 2018) and limited mental health literacy (Yani et al., 2025). These factors can lead to negative attitudes toward mental health and hinder help-seeking behaviors—as Kleinman (2004) emphasized, substantial cultural differences in emotional expression, help-seeking practices, and societal attitudes toward mental illness may shape both the manifestation and recognition of depressive symptoms. Consequently, it is questionable to what extent existing findings from WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries can be generalized to the context of Indonesian adolescents.

The present study addresses this gap by applying Latent Profile Analysis (LPA) to identify distinct patterns of depressive symptom presentations among a large, nationally representative sample of Indonesian adolescents.

indikator berkelanjutan untuk mengidentifikasi sub-kelompok berbeda (sering disebut sebagai "profil") berdasarkan pola respons individu (Spurk et al., 2020).

Para penulis percaya bahwa pemanfaatan skala gejala depresi berkelanjutan memungkinkan pemahaman yang lebih akurat tentang bagaimana remaja Indonesia mengalami depresi dengan berbagai cara. Dengan mengklasifikasikan individu ke dalam profil spesifik, *Latent Profile Analysis (LPA)* membantu dalam menyesuaikan intervensi untuk menargetkan profil gejala yang paling parah. Pendekatan ini dapat memprioritaskan intervensi untuk subkelompok dengan beban gejala tertinggi, sehingga meningkatkan luaran perlakuan atau pengobatan (Saunders et al., 2016). Luaran yang terkait dengan tiap profil laten dapat memperoleh manfaat dari pendekatan yang berbeda. Sebagai contoh adalah menawarkan intervensi yang lebih intensif kepada mereka yang memiliki profil gejala tinggi sekaligus meminimalkan risiko pengobatan yang kurang atau berlebihan. Hal ini dapat meningkatkan luaran terapeutik dan mengurangi kemungkinan putus perlakuan (*dropout*) atau pengalaman buruk. Pendekatan tersebut telah mengungkapkan heterogenitas yang signifikan dalam presentasi gejala depresi di kalangan remaja dalam konteks negara *WEIRD (Western, Educated, Industrialized, Rich, and Democratic)*, dengan profil yang berbeda yang dikarakterisasikan oleh berbagai kombinasi gejala kognitif, afektif, dan somatik (Conway et al., 2019). Depresi pada remaja seringkali kurang terdiagnosis, disalahartikan, atau tidak ditangani secara memadai (Stein et al., 2006; Sihvola et al., 2007; Eapen & Črnčec, 2012), terutama di negara berpenghasilan rendah dan menengah seperti Indonesia. Berbagai faktor dapat berkontribusi terhadap tantangan ini, termasuk pengaruh budaya dan masyarakat seperti stigmatisasi (Hartini et al., 2018) dan keterbatasan literasi kesehatan mental (Yani et al., 2025). Sejumlah faktor tersebut dapat menyebabkan sikap negatif terhadap kesehatan mental dan menghambat perilaku mencari pertolongan—sebagaimana ditekankan oleh Kleinman (2004), perbedaan budaya yang substansial dalam ekspresi emosi, praktik mencari pertolongan, dan sikap masyarakat terhadap penyakit mental dapat membentuk manifestasi dan pengenalan gejala depresi. Sebagai akibatnya, patut dipertanyakan sejauh mana temuan yang ada dari negara *WEIRD (Western, Educated, Industrialized, Rich, and Democratic)* dapat digeneralisasikan ke konteks remaja Indonesia.

Studi ini mengatasi kesenjangan tersebut dengan menerapkan *Latent Profile Analysis (LPA)* untuk mengidentifikasi pola khas presentasi gejala depresi di antara sampel remaja Indonesia yang besar dan representatif secara

By examining the heterogeneity in symptom profiles, the authors aim to move beyond traditional severity-based approaches to better understand the manifestations of adolescent depression within the Indonesian context. This approach may reveal specific symptom profiles that differ from those observed in Western populations. Furthermore, this study also investigates how specific sociodemographic factors, especially sex or gender, socioeconomic status, urban-rural residence, and education are associated with classification into different depressive symptom profiles. Previous studies have highlighted that sex or gender (Nolen-Hoeksema, 2001), socioeconomic status (Reiss, 2013), urban-rural residence (Khairunnisa et al., 2024), education (Li et al., 2022) have consistently linked to differences in depressive symptoms. Studying these associations can help improve the comprehension how those sociodemographic factors affect mental health within the context of adolescents in Indonesia. The findings from this study may help develop more effective screening practices and support the development of targeted interventions that are better aligned with the varying needs of Indonesian adolescents experiencing depressive symptoms.

Hypothesis: There are multiple distinct latent profiles of depressive symptoms among Indonesian adolescents.

Method

Study Participants and Procedure

The authors analyzed secondary data from the fifth wave of the Indonesia Family Life Survey (IFLS; Strauss et al., 2016), a longitudinal demographic and health survey that began in 1993. Over the years, the Indonesia Family Life Survey (IFLS) has undergone four prior periods of data collection, including Indonesia Family Life Survey 5 (IFLS-5) which was completed and released in 2015. In Indonesia Family Life Survey 5 (IFLS-5), detailed individual information was collected from randomly selected household members. Although the Indonesia Family Life Survey (IFLS) does not cover all 38 provinces of Indonesia, it is highly representative—including over 83% of the national population by sampling 13 provinces that include both urban and rural areas across major islands (Strauss et al., 2016). A total of 16,204 households participated in the survey, with 31,447 individuals aged 15 and older completing interviews that included assessments of depressive symptoms (Strauss et al., 2016). The Indonesia Family Life Survey 5 (IFLS-5) data are publicly available

nasional. Dengan memeriksa heterogenitas dalam profil gejala, para penulis bertujuan untuk bergerak melampaui pendekatan berbasis keparahan tradisional untuk lebih memahami manifestasi depresi remaja dalam konteks Indonesia. Pendekatan ini dapat mengungkapkan profil gejala spesifik yang berbeda dari yang diamati pada populasi Barat. Lebih lanjut, studi ini juga menyelidiki bagaimana faktor sosiodemografi spesifik, terutama jenis kelamin atau *gender*, status sosial ekonomi, tempat tinggal perkotaan-pedesaan, dan pendidikan dikaitkan dengan klasifikasi ke dalam profil gejala depresi yang berbeda. Sejumlah studi sebelumnya telah menyoroti bahwa jenis kelamin atau *gender* (Nolen-Hoeksema, 2001), status sosial ekonomi (Reiss, 2013), tempat tinggal perkotaan-pedesaan (Khairunnisa et al., 2024), pendidikan (Li et al., 2022) secara konsisten terkait dengan perbedaan gejala depresi. Mempelajari hubungan tersebut dapat membantu meningkatkan pemahaman tentang bagaimana faktor sosiodemografi tersebut memengaruhi kesehatan mental dalam konteks remaja di Indonesia. Temuan dari studi ini dapat membantu mengembangkan praktik skrining yang lebih efektif dan mendukung pengembangan intervensi terarah yang lebih selaras dengan beragam kebutuhan remaja Indonesia yang mengalami gejala depresi.

Hipotesis: Ada beberapa profil laten gejala depresi yang berbeda pada remaja Indonesia.

Metode

Partisipan dan Prosedur Studi

Para penulis menganalisis data sekunder dari gelombang kelima *Indonesia Family Life Survey* (*IFLS;* Strauss et al., 2016), sebuah survei demografis dan kesehatan longitudinal yang dimulai pada tahun 1993. Selama beberapa tahun, *Indonesia Family Life Survey (IFLS)* telah menjalani empat periode pengumpulan data sebelumnya, termasuk *Indonesia Family Life Survey 5 (IFLS-5)* yang telah selesai dan dirilis pada tahun 2015. Dalam *Indonesia Family Life Survey 5 (IFLS-5)*, informasi individu yang terperinci dikumpulkan dari anggota rumah tangga yang dipilih secara acak. Meskipun *Indonesia Family Life Survey (IFLS)* tidak mencakup seluruh 38 provinsi di Indonesia, survei ini sangat representatif—mencakup lebih dari 83% populasi nasional dengan mengambil sampel dari 13 provinsi yang mencakup wilayah perkotaan dan pedesaan di seluruh pulau besar (Strauss et al., 2016). Sebanyak 16.204 rumah tangga berpartisipasi dalam survei ini, dengan 31.447 individu berusia 15 tahun ke atas menyelesaikan wawancara yang mencakup penilaian gejala depresi (Strauss et al., 2016).

and can be accessed through RAND's website (available at https://www.rand.org/well-being/social-and-behavioral-policy/data/FLS/IFLS.html) following a registration process. The use of the data for academic research is permitted without additional special permission, provided that the source is properly cited and data confidentiality guidelines are respected.

Although the survey is longitudinal, the authors focused the analysis on the cross-sectional data from Indonesia Family Life Survey 5 (IFLS-5) for adolescents. Since the terms "young adulthood" and "emerging adulthood" are generally defined as ranging from approximately 18-26 years of age (Patton et al., 2016; Arnett, 2000), the authors classified adolescents as individuals under 18 years old—therefore, in this study the analysis included individuals aged 15-17 years. Initially, data from 2,274 participants were obtained. The authors then reviewed the quality assessment of responses embedded in the dataset—in which evaluated both quality of answers and seriousness. As a result, five participants were excluded due to low-quality responses, and two more were removed for lack of seriousness and attentiveness—yielding a total sample of 2267 participants for analysis. The study received approval from *Komite Etik Fakultas Psikologi Universitas Gadjah Mada*: 2920/UN1/PS.1/SD/PT.01.04/2025.

Measures

Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10; Andresen et al., 1994)

The Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) is a brief version of the original 20-item Center of Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) which was designed to evaluate the frequency of depressive symptoms in adolescents and adults. Study participants rate their experiences over the past week on a four-point scale, ranging from "0 (*Rarely or None of the Time [Less than 1 Day]*)" to "3 (*Most or All of the Time [5-7 Days]*)". The total scores ranged from 0 to 30 with higher scores indicating higher degrees of depressive symptoms. Andresen et al. (1994) categorized the depressive symptom severity measured by the Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) as follows: (1) scores of 0-9 indicate mild symptoms; (2) scores of 10-14 reflect moderate symptoms; and (3) scores of 15 or higher represent severe depressive symptoms. However, the Center of Epidemiologic Studies Depression Scale, 10-Item

Data *Indonesia Family Life Survey 5 (IFLS-5)* tersedia untuk umum dan dapat diakses melalui situs *web RAND* (https://www.rand.org/well-being/social-and-behavioral-policy/data/FLS/IFLS.html) setelah melalui proses registrasi. Penggunaan data untuk penelitian akademis diperbolehkan tanpa izin khusus tambahan, dengan syarat sumbernya dicantumkan dengan benar dan pedoman kerahasiaan data dipatuhi.

Walaupun survei ini bersifat longitudinal, para penulis memfokuskan analisis pada data *cross-sectional* dari *Indonesia Family Life Survey 5 (IFLS-5)* untuk remaja. Mengingat bahwa istilah "dewasa muda" dan "dewasa awal" umumnya didefinisikan berkisar antara usia sekitar 18-26 tahun (Patton et al., 2016; Arnett, 2000), para penulis mengklasifikasikan remaja sebagai individu di bawah usia 18 tahun—oleh karena itu, dalam studi ini analisisnya mencakup individu berusia 15-17 tahun. Para awalnya, data dari 2.274 partisipan diperoleh. Para penulis kemudian meninjau penilaian kualitas respons yang tertanam dalam *dataset*—yang mengevaluasi kualitas jawaban dan keseriusan. Sebagai hasilnya, lima partisipan dikeluarkan karena respons berkualitas rendah, dan dua partisipan dikeluarkan karena kurang serius dan kurang teliti—menghasilkan total sampel 2.267 partisipan untuk dianalisis. Studi ini mendapat persetujuan dari Komite Etik Fakultas Psikologi Universitas Gadjah Mada: 2920/UN1/PS.1/SD/PT.01.04/2025.

Alat Ukur

Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10; Andresen et al., 1994)

Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) adalah versi singkat *Center of Epidemiologic Studies Depression Scale* (*CES-D*; Radloff, 1977) yang terdiri dari 20 butir, yang dirancang untuk mengevaluasi frekuensi gejala depresi pada remaja dan dewasa. Partisipan studi menilai pengalaman mereka selama seminggu terakhir pada skala empat poin, mulai dari "0 (*Jarang atau Tidak Pernah [Kurang dari 1 Hari]*)" hingga "3 (*Sebagian Besar atau Sepanjang Waktu [5-7 Hari]*)". Skor total berkisar dari 0 hingga 30, dengan skor yang lebih tinggi menunjukkan derajat gejala depresi yang lebih tinggi. Andresen et al. (1994) mengategorikan tingkat keparahan gejala depresi yang diukur dengan *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)* sebagai berikut: (1) skor 0-9 menunjukkan gejala ringan; (2) skor 10-14 mencerminkan gejala sedang; dan (3) skor 15 atau lebih tinggi menunjukkan gejala depresi berat. Namun, *Center of Epidemiologic Stu-*

Version (CES-D-10) utilized in the Indonesia Family Life Survey 5 (IFLS-5) had different response options (ranging from 1 to 4 instead of 0 to 3). To ensure consistency with the original scoring system and improve comparability with other studies, the authors converted the scores to the original scale before conducting further analyses. The *McDonald's* ω reliability coefficient for this sample was relatively low but still within an acceptable range, being $\omega = .675$.

Socio-Demographic Questions

Socio-demographic questions included age, sex or gender, residential status (urban or rural), education, and subjective socioeconomic status. Subjective economic status was evaluated using a six-step ladder analogy, where study participants were asked: "Please imagine a six-step ladder where on the bottom (the first step), stand the poorest people, and on the highest step (the sixth step), stand the richest people. On which [economic] step are you today?" (Strauss et al., 2016). Responses ranged from "1 (*Poorest*)" to "6 (*Richest*)". For analysis, economic status was categorized as follows: (1) Steps 1 and 2 were classified as poor; (2) Steps 3 and 4 were classified as moderate; and (3) Steps 5 and 6 were classified as rich.

Statistical Analysis

Descriptive statistics were utilized to summarize the variables—categorical variables presented as frequencies (*n*) and percentages (%), while continuous variables reported as means (*M*) and standard deviations (*SD*). Three statistical analyses were performed: (1) Latent Profile Analysis (LPA); (2) Chi-Square Tests; and (3) Logistic Regression Analyses. Firstly, Latent Profile Analysis (LPA) was conducted to identify distinct depressive symptoms among adolescents. Ten items of the Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) were analyzed as observed variables. The Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), Sample Size Adjusted Bayesian Information Criterion (SABIC), Entropy, and Bootstrapped Likelihood Ratio Test (BLRT) were reported as model fit indices. A better model fit was indicated by lower Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and Sample Size Adjusted Bayesian Information Criterion (SABIC), statistically significant Bootstrapped Likelihood Ratio Test (BLRT; $p < .05$) indica-

dies Depression Scale, 10-Item Version (CES-D-10) yang digunakan dalam *Indonesia Family Life Survey 5 (IFLS-5)* memiliki pilihan respons yang berbeda (berkisar dari 1 hingga 4, bukan 0 hingga 3). Untuk memastikan konsistensi dengan sistem penilaian orisinal dan meningkatkan komparabilitas dengan studi lain, para penulis mengonversi skor ke skala orisinal sebelum melakukan analisis lebih lanjut. Koefisien reliabilitas *McDonald's* ω untuk sampel ini relatif rendah tetapi masih dalam rentang yang dapat diterima, yaitu $\omega = 0{,}675$.

Pertanyaan Sosio-Demografis

Pertanyaan sosiodemografi meliputi usia, jenis kelamin atau *gender*, status tempat tinggal (perkotaan atau pedesaan), pendidikan, dan status sosial ekonomi subjektif. Status ekonomi subjektif dievaluasi menggunakan analogi tangga enam langkah, ketika partisipan studi ditanya: "Mohon bayangkan sebuah tangga enam langkah ketika di anak tangga paling bawah (anak tangga pertama), berdiri orang-orang termiskin, dan di anak tangga tertinggi (anak tangga keenam), berdiri orang-orang terkaya. Di anak tangga [ekonomi] manakah Anda saat ini?" (Strauss et al., 2016). Respons berkisar dari "1 (*Termiskin*)" hingga "6 (*Terkaya*)". Untuk analisis, status ekonomi dikategorikan sebagai berikut: (1) Anak tangga 1 dan 2 diklasifikasikan sebagai miskin; (2) Anak tangga 3 dan 4 diklasifikasikan sebagai moderat; dan (3) Anak tangga 5 dan 6 diklasifikasikan sebagai kaya.

Analisis Statistik

Statistik deskriptif digunakan untuk meringkas variabel—variabel kategorikal disajikan sebagai frekuensi (*n*) dan persentase (%), sementara variabel kontinu dilaporkan sebagai rerata atau *mean* (*M*) dan simpangan baku atau *standard deviation* (*SD*). Para penulis melakukan tiga analisis statistik: (1) *Latent Profile Analysis (LPA)*; (2) *Chi-Square Test*; dan (3) *Logistic Regression Analyses*. Pertama, *Latent Profile Analysis (LPA)* dilakukan untuk mengidentifikasi gejala depresi yang berbeda pada remaja. Sepuluh butir dari *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)* dianalisis sebagai variabel yang diamati. *Akaike Information Criterion (AIC)*, *Bayesian Information Criterion (BIC)*, *Sample Size Adjusted Bayesian Information Criterion (SABIC)*, *Entropy*, dan *Bootstrapped Likelihood Ratio Test (BLRT)* dilaporkan sebagai indeks kecocokan (*fit indices*) model. *Model fit* yang lebih baik ditunjukkan oleh *Akaike Information Criterion (AIC)*, *Bayesian Information Criterion (BIC)*, dan *Sample Size Adjusted Bayesian Information Criterion (SABIC)* yang lebih rendah, *Bootstrapped Like-*

ted the representing profile provided a better fit than the previous (k-1) model (Spurk et al., 2020). Entropy was used to quantify how well individuals were classified into category classification (Weiss & Dardick, 2016). In addition to the above indicators, practical significance and interpretability were also taken into account. Secondly, Chi-Square Tests were utilized to examine differences in sociodemographic variables across the identified profiles. Lastly, variables that were statistically significant in the Chi-Square Tests ($p < .05$) were included in Logistic Regression Analyses to evaluate the factors associated with depressive symptoms in adolescents. Latent Profile Analysis (LPA) was conducted using the tidyLPA package (Rosenberg et al., 2018) in R Version 4.4.3 (R Core Team, n.d.), while Chi-Square Tests and Logistic Regression Analyses were performed using Jeffrey's Amazing Statistics Program (JASP) Version 0.19.3 (The JASP Team, 2025).

Results

Sociodemographic Characteristics of Study Participants

The study participants' age (n = 2,267) ranged from 15 to 17 years old, with an average age of 15.92 (SD = 0.82). Among them, 50.82% were female, 59.77% lived in urban areas, 93.82% had high school education, and 80.86% consider themselves within the moderate subjective welfare. Table 1 provides more detailed information regarding the sociodemographic characteristics of the study participants.

Latent Profile Analysis (LPA)

The three fitted models are presented in Table 2. It was presented that Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and Sample Size Adjusted Bayesian Information Criterion (SABIC) tend to be lower the more profiles estimated. The authors found that the *p-value* of the Bootstrapped Likelihood Ratio Test (BLRT) was consistently significant ($p < .05$) across all fitted models. Entropy was highest in the 2-profile model. The 3-profile model showed to be the most appropriate model based on the indices. Yet, the profile showed only slight differences with Model 2, and the average probability of each subgroup was lower compared to the 2-profile model. After taking into account the presented results, practical significance, and interpretability, the 2-profile model was chosen as the final fitted model. Table 2 also showed that the average probability of each sub-

lihood Ratio Test (*BLRT*; $p < 0,05$) yang signifikan secara statistik menunjukkan profil yang mewakili memberikan kecocokan yang lebih baik daripada model sebelumnya (k-1; Spurk et al., 2020). *Entropy* digunakan untuk mengukur seberapa baik individu diklasifikasikan ke dalam klasifikasi kategori (Weiss & Dardick, 2016). Selain indikator di atas, signifikansi praktis dan interpretabilitas juga diperhitungkan. Kedua, *Chi-Square Test* digunakan untuk memeriksa perbedaan variabel sosiodemografi di seluruh profil yang diidentifikasi. Terakhir, variabel yang signifikan secara statistik dalam *Chi-Square Test* ($p < 0,05$) dimasukkan dalam *Logistic Regression Analyses* untuk mengevaluasi faktor yang terkait dengan gejala depresi pada remaja. *Latent Profile Analysis (LPA)* dilakukan dengan menggunakan *tidyLPA package* (Rosenberg et al., 2018) dalam *R* Versi 4.4.3 (R Core Team, n.d.), sementara *Chi-Square Test* dan *Logistic Regression Analyses* dilakukan menggunakan *Jeffrey's Amazing Statistics Program (JASP)* Versi 0.19.3 (The JASP Team, 2025).

Hasil

Karakteristik Sosiodemografi Partisipan Studi

Usia partisipan studi (n = 2.267) berkisar antara 15 hingga 17 tahun, dengan rerata usia 15,92 (SD = 0,82). Dalam total tersebut, 50,82% adalah perempuan, 59,77% tinggal di perkotaan, 93,82% berpendidikan sekolah menengah atas (SMA), dan 80,86% menganggap diri mereka berada dalam kategori kesejahteraan subjektif sedang. Tabel 1 menyediakan informasi lebih rinci mengenai karakteristik sosiodemografi partisipan studi.

Latent Profile Analysis (LPA)

Tiga model yang telah disesuaikan (*fitted*) disajikan dalam Tabel 2. Secara spesifik, disajikan bahwa *Akaike Information Criterion (AIC)*, *Bayesian Information Criterion (BIC)*, dan *Sample Size Adjusted Bayesian Information Criterion (SABIC)* cenderung lebih rendah semakin banyak profil yang diperkirakan. Para penulis menemukan bahwa *p-value* dari *Bootstrapped Likelihood Ratio Test (BLRT)* secara konsisten signifikan ($p < 0,05$) di seluruh model yang telah disesuaikan (*fitted*). *Entropy* tertinggi ada pada model 2-profil. Model 3-profil terbukti menjadi model yang paling tepat berdasarkan indeks. Namun, profil tersebut hanya menunjukkan sedikit perbedaan dengan Model 2, dan rerata probabilitas setiap sub-kelompok lebih rendah dibandingkan dengan model 2-profil. Setelah memperhitungkan hasil yang disajikan, signifikansi praktis, dan interpretabilitas, model 2-profil dipilih sebagai

Table 1
Study Participants' Sociodemographic Characteristics (n = 2,267)

Sociodemographic Characteristics	*n / M*	*% / SD*
Age (*M*, *SD*)	15.92	0.82
Sex (*n*, *%*)		
Male	1,115	49.18%
Female	1,152	50.82%
Education (*n*, *%*)		
None	3	0.13%
Elementary School	125	5.51%
Highschool	2,127	93.83%
Higher Education	12	0.53%
Residence (*n*, *%*)		
Rural	912	40.23%
Urban	1,355	59.77%
Subjective Economic Background (*n*, *%*)		
"Does Not Know"	12	0.53%
Poor	335	14.78%
Moderate	1,833	80.86%
Rich	87	3.83%
CES-D-10* (*M*, *SD*)	19.28	4.71

Notes. *M* = Mean; *SD* = Standard Deviation; *CES-D-10 = Center of Epidemiologic Studies Depression Scale, 10-Item Version.

Tabel 1
Karakteristik Sosiodemografis Partisipan Studi (n = 2.267)

Karakteristik Sosiodemografis	*n / M*	*% / SD*
Usia (*M*, *SD*)	15,92	0,82
Jenis Kelamin atau *Gender* (*n*, *%*)		
Laki-Laki	1.115	49,18%
Perempuan	1.152	50,82%
Pendidikan (*n*, *%*)		
Tidak Sekolah	3	0,13%
Sekolah Dasar	125	5,51%
Sekolah Menengah	2.127	93,83%
Perguruan Tinggi	12	0,53%
Lokasi Tempat Tinggal (*n*, *%*)		
Desa	912	40,23%
Kota	1.355	59,77%
Latar Belakang Ekonomi Subjektif (*n*, *%*)		
"Tidak Tahu"	12	0,53%
Miskin	335	14,78%
Menengah	1.833	80,86%
Kaya	87	3,83%
*CES-D-10** (*M*, *SD*)	19,28	4,71

Catatan. *M* = Rerata; *SD = Standard Deviation* (Simpangan Baku); **CES-D-10 = Center for Epidemiologic Studies Depression Scale, 10-Item Version.*

Table 2
Indicators for Each Latent Profile of Depressive Symptoms in Adolescents

Profile	*Likelihood*	*AIC*	*BIC*	*SABIC*	*Entropy*	*Probability*		*BLRT (p)*
						Min.	*Max.*	
1	- 29888.95	59817.91	59932.43	59868.89	1	1	1	
2	**- 28450.8**	**56963.62**	**57141.13**	**57042.64**	**0.84**	**0.91**	**0.97**	**2876.28 (.01)**
3	- 28154.26	56392.51	56633.01	56499.57	0.78	0.83	0.94	694.47 (.01)

Notes. *AIC* = Akaike Information Criterion; *BIC* = Bayesian Information Criterion; *SABIC* = Sample Size Adjusted Bayesian Information Criterion (BIC); *BLRT* = Bootstrapped Likelihood Ratio Test; Optimal model is highlighted in **bold**.

Tabel 2
Indikator Untuk Tiap Profil Laten Depresi Pada Remaja

Profil	*Likelihood*	*AIC*	*BIC*	*SABIC*	*Entropy*	*Probability*		*BLRT* (*p*)
						Min.	*Max.*	
1	- 29888,95	59817,91	59932,43	59868,89	1,00	1,00	1,00	
2	**- 28450,81**	**56963,62**	**57141,13**	**57042,64**	**0,84**	**0,91**	**0,97**	**2876,28 (0,01)**
3	- 28154,26	56392,51	56633,01	56499,57	0,78	0,83	0,94	694,47 (0,01)

Catatan. *AIC = Akaike Information Criterion*; *BIC = Bayesian Information Criterion*; *SABIC = Sample Size Adjusted Bayesian Information Criterion (BIC)*; *BLRT = Bootstrapped Likelihood Ratio Test*; Model optimal disorot dengan **cetak tebal**.

Table 3
Inter-Profile Sociodemographic Characteristic Differences (n = 2,267)

Sociodemographic Characteristics	"Low-Level" Depressive Symptoms Profile*	"High-Level" Depressive Symptoms Profile**	χ^2	*p*
Age (*M*, *SD*)	15.91 (0.83)	15.95 (0.80)	7.211	.07
Sex (*n*, *%*)			11.409	< .001
Male	853 (51.32%)	262 (43.31%)		
Female	809 (48.68%)	343 (56.69%)		
Education (*n*, *%*)			1.275	.53
None	2 (0.12%)	1 (0.17%)		
Elementary School	86 (5.17%)	39 (6.45%)		
Highschool	1,564 (94.10%)	563 (93.05%)		
Higher Education	10 (0.60%)	2 (0.33%)		
Residence (*n*, *%*)			0.272	.6
Rural	674 (40.55%)	238 (39.34%)		
Urban	988 (59.45%)	367 (60.66%)		
Subjective Economic Background (*n*, *%*)			6.832	.08
"Does Not Know"	11 (0.66%)	1 (0.17%)		
Poor	229 (13.78%)	106 (17.52%)		
Moderate	1,358 (81.71%)	475 (78.51%)		
Rich	64 (3.85%)	23 (3.80%)		

Notes. *n = 1,662; **n = 605; *M* = Mean; *SD* = Standard Deviation; χ^2 = Chi-Square value; *p* = p-value.

group of adolescents belonging to each respective profile ranged from 91% to 97%, which indicated that the identified two latent profile model was the optimal model.

model akhir yang telah disesuaikan (*fitted*). Tabel 2 juga menunjukkan bahwa rerata probabilitas tiap sub-kelompok remaja yang termasuk dalam masing-masing profil berkisar antara 91% hingga 97%, yang menunjukkan bahwa dua model profil laten yang diidentifikasi adalah model optimal.

Tabel 3
Perbedaan Karakteristik Sosiodemografis Antar Profil (n = 2.267)

Karakteristik Sosiodemografis	Profil Gejala Depresi "Tingkat Rendah"*	Profil Gejala Depresi "Tingkat Tinggi"**	χ^2	*p*
Usia (*M*, *SD*)	15,91 (0,83)	15,95 (0,80)	7,211	0,07
Jenis Kelamin atau *Gender* (*n*, *%*)			11,409	< 0,001
Laki-Laki	853 (51,32%)	262 (43,31%)		
Perempuan	809 (48,68%)	343 (56,69%)		
Pendidikan (*n*, *%*)			1,275	0,53
Tidak Sekolah	2 (0,12%)	1 (0,17%)		
Sekolah Dasar	86 (5,17%)	39 (6,45%)		
Sekolah Menengah	1,564 (94,10%)	563 (93,05%)		
Perguruan Tinggi	10 (0,60%)	2 (0,33%)		
Lokasi Tempat Tinggal (*n*, *%*)			0,272	0,60
Desa	674 (40,55%)	238 (39,34%)		
Kota	988 (59,45%)	367 (60,66%)		
Latar Belakang Ekonomi Subjektif (*n*, *%*)			6,832	0,08
"Tidak Tahu"	11 (0,66%)	1 (0,17%)		
Miskin	229 (13,78%)	106 (17,52%)		
Menengah	1,358 (81,71%)	475 (78,51%)		
Kaya	64 (3,85%)	23 (3,80%)		

Catatan. *n = 1.662; **n = 605; *M* = Rerata; *SD* = *Standard Deviation* (Simpangan Baku); χ^2 = Nilai *Chi-Square*; *p* = *p-value* (Taraf Signifikansi).

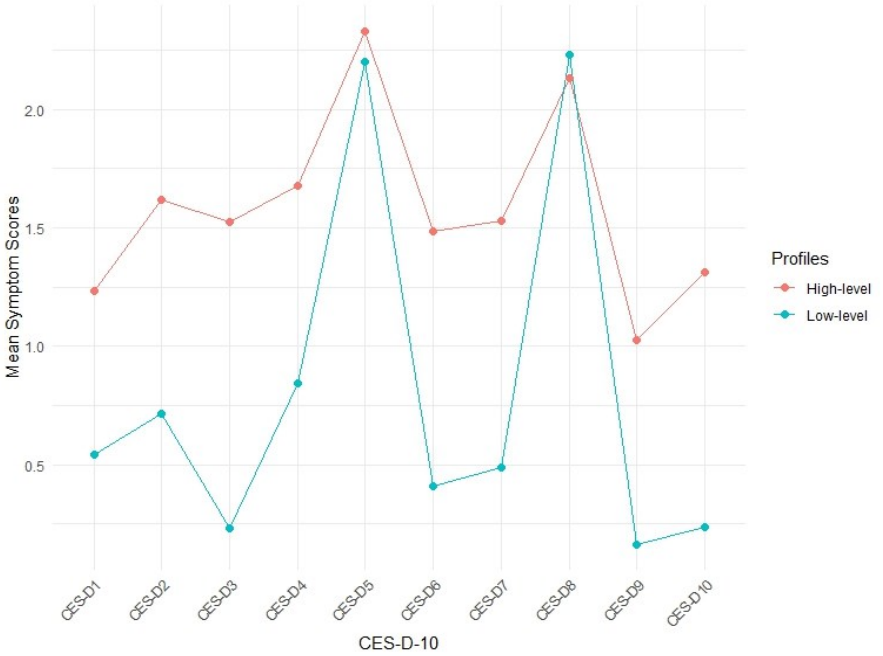


Figure 1. Latent profile model of depressive symptoms in adolescents.
Notes. CES-D-10 = Center of Epidemiologic Studies Depression Scale, 10-Item Version.

Based on the results of Latent Profile Analysis (LPA), the authors visualized the response patterns for all ten items of the Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10; see Figure 1). Profile 1 showed lower scores on nearly all Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) items relative to the other profile, except for Item 8, which did not follow this pattern. Given these characteristics, the authors labeled this subgroup as the "Low-Level" Depressive Symptoms Profile, which consisted of 73.31% of the total sample. In contrast, Profile 2 had significantly higher scores on all observed variables—which indicated a more severe presence of depressive symptoms. The authors designated this group as the "High-Level" Depressive Symptoms Profile, which comprised 26.69% of the sample.

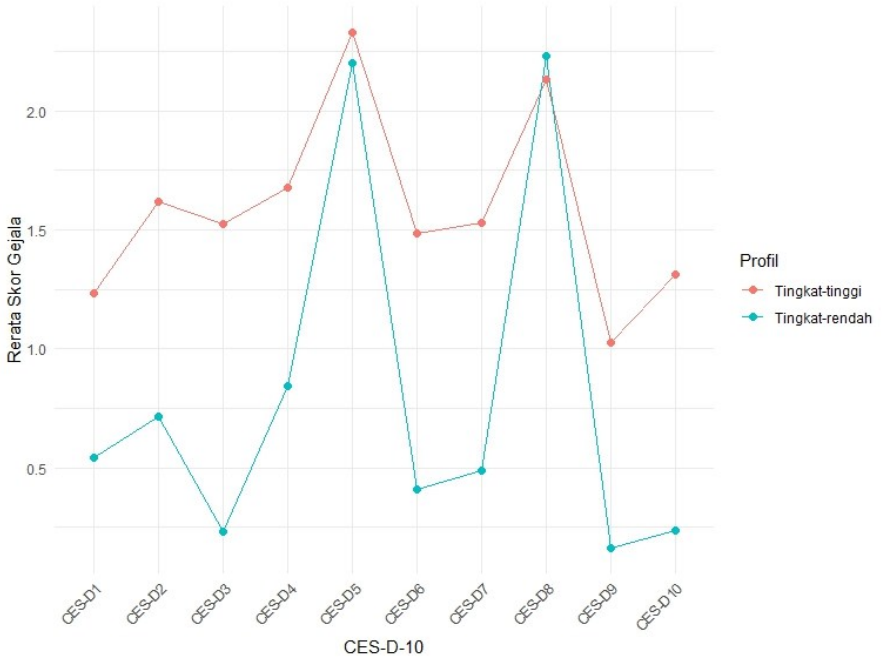
Sociodemographic Variables Across Profiles

The differences in sociodemographic characteristics between the identified depressive symptom profiles are summarized in Table 3, which provides a more detailed information regarding the age, sex or gender, education level, residential location, and subjective economic status across both profiles. The authors found that sex or gender was the only sociodemographic variable with a statistically significant difference between the two profiles

Berdasarkan hasil *Latent Profile Analysis (LPA)*, para penulis memvisualisasikan pola respons untuk semua sepuluh butir *Center of Epidemiologic Studies Depression Scale, 10-Item Version* (*CES-D-10*; lihat Gambar 1). Profil 1 menunjukkan skor yang lebih rendah pada hampir semua butir *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)* relatif terhadap profil lainnya, kecuali untuk Butir 8, yang tidak mengikuti pola ini. Mengingat karakteristik ini, para penulis memberi label sub-kelompok ini sebagai Profil Gejala Depresi "Tingkat Rendah", yang terdiri dari 73,31% dari total sampel. Sebaliknya, Profil 2 memiliki skor yang jauh lebih tinggi pada semua variabel yang diamati—yang menunjukkan adanya gejala depresi yang lebih parah. Para penulis menetapkan kelompok ini sebagai Profil Gejala Depresi "Tingkat Tinggi", yang terdiri dari 26,69% dari sampel.

Variabel Sosiodemografi di Seluruh Profil

Perbedaan karakteristik sosiodemografi antara profil gejala depresi yang teridentifikasi dirangkum dalam Tabel 3, yang menyediakan informasi lebih rinci mengenai usia, jenis kelamin atau *gender*, tingkat pendidikan, lokasi tempat tinggal, dan status ekonomi subjektif di kedua profil. Para penulis menemukan bahwa jenis kelamin atau *gender* merupakan satu-satunya variabel sosiodemografi dengan perbedaan yang signifikan secara statistik



Gambar 1. Model profil laten gejala depresi pada remaja.
Catatan. CES-D-10 = Center of Epidemiologic Studies Depression Scale, 10-Item Version.

(χ^2 = 11.41; p < .01), while age, education level, residential location, and subjective economic background showed no significant differences. Particularly, a higher proportion of female adolescents were classified under the "High-Level" Depressive Symptoms Profile compared to the "Low-Level" Depressive Symptoms Profile (n = 343; 56.69% of the "High-Level" Depressive Symptoms Profile).

Logistic Regression of Depressive Symptoms Profiles

A binary logistic regression was conducted to further explore the predictive role of sex or gender on latent depressive symptom profile classification. Sex or gender was coded as 0 for males and 1 for females. The dependent variable was profile classification (0 = "Low-Level" Depressive Symptoms Profile; 1 = "High-Level" Depressive Symptoms Profile). The authors utilized the "Low-Level" Depressive Symptoms Profile as the reference group. Results indicated that sex or gender was a significant predictor of depressive symptom severity (*OR* = 1.38; *95% CI* = 1.14 - 1.67). Specifically, adolescents classified in the "High-Level" Depressive Symptoms Profile were more likely to be female—and female adolescents had a 38% higher likelihood of exhibiting high levels of depressive symptoms compared to their male counterparts.

antara kedua profil (χ^2 = 11,41; p < 0,01), sementara usia, tingkat pendidikan, lokasi tempat tinggal, dan latar belakang ekonomi subjektif tidak menunjukkan perbedaan yang signifikan. Secara khusus, proporsi remaja perempuan yang diklasifikasikan dalam Profil Gejala Depresi "Tingkat Tinggi" lebih tinggi dibandingkan dengan Profil Gejala Depresi "Tingkat Rendah" (n = 343; 56,69% dari Profil Gejala Depresi "Tingkat Tinggi").

Logistic Regression Profil Gejala Depresi

Binary logistic regression dilakukan untuk lebih mengeksplorasi peran prediktif jenis kelamin atau *gender* pada klasifikasi profil gejala depresi laten. Jenis kelamin atau *gender* dikodekan sebagai 0 untuk laki-laki dan 1 untuk perempuan. Variabel dependen adalah klasifikasi profil (0 = Profil Gejala Depresi "Tingkat Rendah"; 1 = Profil Gejala Depresi "Tingkat Tinggi"). Para penulis menggunakan Profil Gejala Depresi "Tingkat Rendah" sebagai kelompok referensi. Hasil menunjukkan bahwa jenis kelamin atau *gender* merupakan prediktor signifikan dari tingkat keparahan gejala depresi (*OR* = 1,38; 95% *CI* = 1,14 - 1,67). Secara khusus, remaja yang diklasifikasikan dalam Profil Gejala Depresi "Tingkat Tinggi" lebih cenderung berjenis kelamin perempuan—dan remaja perempuan memiliki kemungkinan 38% lebih tinggi untuk menunjukkan gejala depresi tingkat tinggi dibandingkan dengan remaja laki-laki.

Discussion

The authors examined the latent subgroups of depressive symptoms among adolescents and evaluated the factors associated with the more severe depressive symptoms manifestation. In this study, the authors identified and selected two distinct depressive symptoms profiles within the adolescents' sample—namely "Low-Level" Depressive Symptoms Profile and "High-Level" Depressive Symptoms Profile.

Study results show that 26.69% of the samples were classified as "High-Level" Depressive Symptoms Profile—indicated by higher overall mean scores on the scale. The presentation of each symptoms measured are concerning. They consistently reported higher severity of symptoms almost on all items, especially on: (1) Item 4 ("I felt that everything I did was an effort"); (2) Item 2 ("I had trouble keeping my mind on what I was doing"); (3) Item 7 ("My sleep was restless"); and (4) Item 6 ("I felt fearful"). These responses indicated that this profile was having significantly higher levels of difficulties in both cognitive functioning and emotional regulation. The elevated levels of these symptoms might indicate substantial disruptions in daily lives (Steger & Kashdan, 2009; Culpepper, 2015).

On the other hand, 73.31% of adolescents were classified as "Low-Level" Depressive Symptoms Profile, with lower overall mean scores on the scale, indicating that they might not be experiencing clinical depression. It is possible that individuals in this profile were experiencing emotional distress or situational challenges rather than a clinical episode of depression. Their responses might reflect normal mood variations, which are common during adolescence and often influenced by school pressure, family issues, or peer relationships (Verma et al., 2017; Maciejewski et al., 2019).

The patterns identified in both profiles reflected a combination of burdened psychological and cognitive difficulties, which were both potentially impairing among adolescents within the "High-Level" Depressive Symptoms Profile. The consistent reporting of distress across multiple domains—affective (e.g., fearfulness), cognitive (e.g., concentration difficulties), behavioral (e.g., reduced motivation), and somatic (e.g., sleep disturbance) suggested a broad pattern of difficulties that might negatively impact academic performance, relationships, and daily functioning (Humensky et al., 2010). Adolescents within the

Diskusi

Para penulis meneliti sub-kelompok laten gejala depresi pada remaja dan mengevaluasi faktor yang terkait dengan manifestasi gejala depresi yang lebih parah. Dalam studi ini, para penulis mengidentifikasi dan memilih dua profil gejala depresi yang berbeda (atau unik) dalam sampel remaja—yaitu Profil Gejala Depresi "Tingkat Rendah" dan Profil Gejala Depresi "Tingkat Tinggi".

Hasil studi menunjukkan bahwa 26,69% sampel diklasifikasikan sebagai Profil Gejala Depresi "Tingkat Tinggi"—ditunjukkan oleh skor rerata keseluruhan yang lebih tinggi pada skala. Presentasi tiap gejala yang diukur mengkhawatirkan. Butir secara konsisten melaporkan tingkat keparahan gejala yang lebih tinggi hampir pada semua butir, terutama pada: (1) Butir 4 ("Saya merasa bahwa semua yang saya lakukan adalah sebuah usaha"); (2) Butir 2 ("Saya kesulitan menjaga pikiran saya pada apa yang saya lakukan"); (3) Butir 7 ("Tidur saya gelisah"); dan (4) Butir 6 ("Saya merasa takut"). Respons ini mengindikasikan bahwa profil ini memiliki tingkat kesulitan yang jauh lebih tinggi dalam fungsi kognitif dan regulasi emosional. Tingkat gejala yang meningkat ini mungkin menunjukkan gangguan substansial dalam kehidupan sehari-hari (Steger & Kashdan, 2009; Culpepper, 2015).

Di sisi lain, 73,31% remaja diklasifikasikan sebagai Profil Gejala Depresi "Tingkat Rendah", dengan skor rerata keseluruhan yang lebih rendah pada skala, yang menunjukkan bahwa mereka mungkin tidak mengalami depresi klinis. Ada kemungkinan bahwa individu dalam profil ini mengalami tekanan emosional atau tantangan situasional, dan bukan episode klinis depresi. Respons mereka mungkin mencerminkan variasi suasana hati yang normal, yang umum terjadi selama masa remaja dan sering kali dipengaruhi oleh tekanan sekolah, masalah keluarga, atau hubungan dengan teman sebaya (Verma et al., 2017; Maciejewski et al., 2019).

Pola yang diidentifikasi dalam kedua profil mencerminkan kombinasi kesulitan psikologis dan kognitif yang membebani, yang keduanya berpotensi mengganggu remaja dalam Profil Gejala Depresi "Tingkat Tinggi". Pelaporan hendaya yang konsisten di berbagai domain—afektif (misalnya: ketakutan), kognitif (misalnya: kesulitan berkonsentrasi), perilaku (misalnya: motivasi berkurang), dan somatik (misalnya: gangguan tidur) menunjukkan pola kesulitan yang luas yang mungkin berdampak negatif pada kinerja akademik, hubungan, dan fungsi sehari-hari (Humensky et al., 2010). Remaja dalam Profil

"High-Level" Depressive Symptoms Profile might be caught in a negative cycle where emotional dysregulation leads to cognitive fatigue in which then worsen their emotional symptoms—creating a pattern of self-perpetuating distress for them (Joormann & Siemer, 2011; Joormann & Tanovic, 2015).

On the contrary, adolescents within the "Low-Level" Depressive Symptoms Profile might not be experiencing the challenges as severe as their "High-Level" Depressive Symptoms Profile counterparts—nevertheless, their experiences still could be considered as vulnerability that required further attention (Cuijpers & Smit, 2008; Karsten et al., 2013; Rodríguez et al., 2012). Individuals within the "Low-Level" Depressive Symptoms Profile might be in a prodromal stage of depression (Fava & Tossani, 2007; Meisenzahl et al., 2024), where symptoms are not yet severe enough to meet clinical thresholds but could develop into more serious issues if stressors persist or intensify.

Additionally, it is important to highlight the anomalies observed in the reverse-scored items—Item 5 ("I felt hopeful about the future") and Item 8 ("I was happy")—in the Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10). In contrast to the expected pattern, the mean scores for these items were nearly identical across both the "High-Level" and "Low-Level" Depressive Symptoms Profiles (see Figure 1), suggesting that they failed to meaningfully differentiate between adolescents with severe depressive symptoms and those with minimal symptoms. These reverse-scored items might not function reliably within this sample and context. Consequently, Item 5 and Item 8 may be psychometrically weak indicators of depression severity in this context and might diminish the scale's construct validity. Previous studies have raised similar concerns, showing that reverse-scored items on the Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) often load inconsistently in factor analyses and reduce internal consistency (James et al., 2020), introduce bias (MacIntosh & Strickland, 2010), and present other psychometric issues (Andresen et al., 2014). As a result, several researchers have recommended removing these items from the scale (Stansbury et al., 2006; MacIntosh & Strickland, 2010; Andresen et al., 2014). Therefore, future use of the Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)—particularly in adolescent context in Indonesia should consider excluding these items in order to avoid drawing misleading conclusions.

Gejala Depresi "Tingkat Tinggi" mungkin terperangkap dalam siklus negatif ketika disregulasi emosional menyebabkan kelelahan kognitif yang kemudian memperburuk gejala emosional mereka—menciptakan pola hendaya yang terus-menerus bagi mereka (Joormann & Siemer, 2011; Joormann & Tanovic, 2015).

Sebaliknya, remaja dalam Profil Gejala Depresi "Tingkat Rendah" mungkin tidak mengalami tantangan seberat remaja dalam Profil Gejala Depresi "Tingkat Tinggi"—meskipun demikian, pengalaman mereka masih dapat dianggap sebagai kerentanan yang memerlukan perhatian lebih lanjut (Cuijpers & Smit, 2008; Karsten et al., 2013; Rodríguez et al., 2012). Individu dalam Profil Gejala Depresi "Tingkat Rendah" mungkin berada dalam tahap *prodromal* depresi (Fava & Tossani, 2007; Meisenzahl et al., 2024), ketika gejalanya belum cukup parah untuk memenuhi ambang klinis tetapi dapat berkembang menjadi masalah yang lebih serius jika stresor menetap atau meningkat.

Selain itu, penting untuk menyoroti anomali yang diamati dalam butir skor terbalik (*reverse*)—Butir 5 ("Saya merasa penuh harapan tentang masa depan") dan Butir 8 ("Saya bahagia")—dalam *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)*. Berbeda dengan pola yang diharapkan, skor rerata untuk butir tersebut hampir identik di kedua Profil Gejala Depresi "Tingkat Tinggi" dan "Tingkat Rendah" (lihat Gambar 1), yang menunjukkan bahwa mereka gagal membedakan secara bermakna antara remaja dengan gejala depresi berat dan mereka yang memiliki gejala minimal. Butir skor terbalik (*reverse*) ini mungkin tidak berfungsi dengan andal dalam sampel dan konteks ini. Sebagai akibatnya, Butir 5 dan Butir 8 mungkin merupakan indikator psikometrik yang lemah dari tingkat keparahan depresi dalam konteks ini dan dapat mengurangi validitas konstruk skala. Studi sebelumnya telah mengangkat kekhawatiran serupa, menunjukkan bahwa butir skor terbalik (*reverse*) pada *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)* sering kali dimuat secara tidak konsisten dalam analisis faktor dan mengurangi konsistensi internal (James et al., 2020), menimbulkan bias (MacIntosh & Strickland, 2010), dan menimbulkan masalah psikometrik lainnya (Andresen et al., 2014). Sebagai akibatnya, beberapa peneliti telah merekomendasikan penghapusan butir tersebut dari skala (Stansbury et al., 2006; MacIntosh & Strickland, 2010; Andresen et al., 2014). Oleh karena itu, penggunaan *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)* di masa mendatang—terutama dalam konteks remaja di Indonesia—sebaiknya mempertimbangkan

The "High-Level" and "Low-Level" Depressive Symptoms Profiles identified in this study underscore the importance of addressing both groups accordingly. While a higher Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) score does not translate as a definitive depression diagnosis (Björgvinsson et al., 2013), it does indicate the need for further assessment. Therefore, individuals that have pronounced symptoms as seen in the "High-Level" Depressive Symptoms Profile might require clinical attention. Conversely, although the symptom severity in the "Low-Level" Depressive Symptoms Profile is subclinical, these signs should not be dismissed as harmless. Mild symptoms can worsen over time if left unaddressed, making preventive efforts are necessary in this context (Lim et al., 2020).

In addition, the authors also found that sex or gender was the only sociodemographic variable with a statistically significant difference between the two profiles, while other factors such as age, education level, residential location, and subjective economic status did not differ significantly between profiles. These findings might reflect the complex and multifactorial nature of adolescent depression, which cannot be fully explained by broad sociodemographic conditions alone. While sociodemographic variables might explain overall differences in depression risk among adolescents, they appear to play a more limited role when it comes to distinguishing between specific depressive symptom profiles. One possible explanation is that sex or gender differences in emotional regulation (Kelly et al., 2008), coping strategies (Eschenbeck et al., 2007), and hormonal development (Bakker, 2019; Neufang et al., 2009) during adolescence may contribute more directly to variations in how depressive symptoms are expressed, whereas other factors may influence overall risk but not necessarily the pattern or severity of symptoms.

Furthermore, this also could be explained by the well-established sex or gender differences in the experience and expression of depressive symptoms (Hankin et al., 1998; Nolen-Hoeksema & Girgus, 1994; Frost et al., 2015). Findings of this study revealed that female adolescents were significantly more likely to show severe depressive symptoms, with a 38% greater likelihood of being classified in the "High-Level" Depressive Symptoms Profile com-

untuk mengecualikan butir tersebut guna menghindari kesimpulan yang menyesatkan.

Profil Gejala Depresi "Tingkat Tinggi" dan "Tingkat Rendah" yang diidentifikasi dalam studi ini menggarisbawahi pentingnya penanganan yang tepat untuk kedua kelompok. Meskipun skor *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)* yang lebih tinggi tidak menjamin diagnosis depresi definitif (Björgvinsson et al., 2013), skor tersebut menunjukkan perlunya penilaian lebih lanjut. Oleh karena itu, individu yang menunjukkan gejala yang jelas seperti yang terlihat pada Profil Gejala Depresi "Tingkat Tinggi" mungkin memerlukan perhatian klinis. Sebaliknya, walaupun tingkat keparahan gejala pada Profil Gejala Depresi "Tingkat Rendah" bersifat sub-klinis, tanda ini tidak boleh dianggap tidak berbahaya. Gejala ringan dapat memburuk seiring waktu jika tidak ditangani, sehingga upaya pencegahan diperlukan dalam konteks ini (Lim et al., 2020).

Selain itu, para penulis juga menemukan bahwa jenis kelamin atau *gender* merupakan satu-satunya variabel sosiodemografi yang memiliki perbedaan signifikan secara statistik antara kedua profil, sementara faktor lain seperti usia, tingkat pendidikan, lokasi tempat tinggal, dan status ekonomi subjektif tidak berbeda secara signifikan antar profil. Temuan ini mungkin mencerminkan sifat depresi remaja yang kompleks dan multifaktorial, yang tidak dapat sepenuhnya dijelaskan hanya dengan kondisi sosiodemografi yang luas. Walaupun variabel sosiodemografi dapat menjelaskan perbedaan risiko depresi secara keseluruhan di antara remaja, variabel tersebut tampaknya memainkan peran yang lebih terbatas dalam membedakan profil gejala depresi tertentu. Salah satu kemungkinan penjelasannya adalah perbedaan jenis kelamin atau *gender* dalam regulasi emosional (Kelly et al., 2008), strategi *coping* (Eschenbeck et al., 2007), dan perkembangan hormonal (Bakker, 2019; Neufang et al., 2009) selama masa remaja dapat berkontribusi lebih langsung terhadap variasi dalam cara gejala depresi diekspresikan, sementara faktor lain dapat memengaruhi risiko secara keseluruhan tetapi belum tentu memengaruhi pola atau tingkat keparahan gejala.

Lebih lanjut, hal ini juga dapat dijelaskan oleh perbedaan jenis kelamin atau *gender* yang telah mapan dalam pengalaman dan ekspresi gejala depresi (Hankin et al., 1998; Nolen-Hoeksema & Girgus, 1994; Frost et al., 2015). Temuan studi ini mengungkapkan bahwa remaja perempuan secara signifikan lebih mungkin menunjukkan gejala depresi berat, dengan kemungkinan 38% lebih besar untuk diklasifikasikan dalam Profil Gejala Depresi

pared to their male peers. The finding aligns with previous studies showing that female adolescents are more likely to experience depressive symptoms (Nolen-Hoeksema, 2001; Salk et al., 2017). Female adolescents were also more susceptible to various proximal risk factors of depression—including family history of depression (Thapar et al., 2012), rumination (Alloy et al., 2016; Miloseva et al., 2018), actual-ideal discrepancy (Papadakis et al., 2006), low perceived social support (Sun et al., 2021) and low self-esteem (MacPhee & Andrews, 2006). Moreover, within the Indonesian context, this gender disparity may be shaped by various sociocultural factors. Putra et al. (2023) highlighted that females are more affected by social expectations, such as traditional sex or gender roles can contribute to psychological distress. Similarly, Santosa et al. (2024) noted that societal expectations placed on females can limit their autonomy, opportunities, and access to resources. These constraints may increase the vulnerability of female adolescents to experiencing depressive symptoms. These findings highlight the need for mental health interventions that address the specific pathways contributing to the development of depressive symptoms among female adolescents.

The observed sex or gender differences in depressive symptom profiles highlight the need for tailored mental health interventions for Indonesian adolescents. For female adolescents, who were more likely to fall into the profile with higher depressive symptoms, interventions that help individuals identify and challenge unhelpful thought patterns might be beneficial, especially interventions related to self-worth and idealized expectations. Interventions that explicitly address rumination such as Rumination-Focused Cognitive Behavioral Therapy (RF-CBT; Watkins et al., 2011) could be particularly effective in reducing repetitive negative thinking patterns in female adolescents (Langenecker et al., 2024). In addition, self-compassion-based interventions (Ferrari et al., 2019) might also reduce the negative impact of actual-ideal discrepancies by fostering a kinder and more accepting perspective of oneself.

On the other hand, male adolescents were less likely to fall into the profile with higher depressive symptoms, which could be partly explained by potential underreporting driven by stigma (Möller-Leimkühler et al., 2007) and differences in how depressive symptoms are expressed (Apicella et al., 2023). They may benefit from interventions that include components aimed at normalizing help-seeking behaviors (Syzdek et al., 2016) and promoting

"Tingkat Tinggi" dibandingkan dengan laki-laki sebaya. Temuan ini sejalan dengan studi sebelumnya yang menunjukkan bahwa remaja perempuan lebih mungkin mengalami gejala depresi (Nolen-Hoeksema, 2001; Salk et al., 2017). Remaja perempuan juga lebih rentan terhadap berbagai faktor risiko proksimal depresi—termasuk riwayat depresi dalam keluarga (Thapar et al., 2012), ruminasi (Alloy et al., 2016; Miloseva et al., 2018), perbedaan antara kondisi aktual dan ideal (Papadakis et al., 2006), rendahnya persepsi dukungan sosial (Sun et al., 2021), dan rendahnya harga diri (MacPhee & Andrews, 2006). Lebih lanjut, dalam konteks Indonesia, kesenjangan *gender* ini mungkin dibentuk oleh berbagai faktor sosiokultural. Putra et al. (2023) menyoroti bahwa perempuan lebih dipengaruhi oleh ekspektasi sosial, seperti peran jenis kelamin atau *gender* tradisional yang dapat berkontribusi terhadap tekanan psikologis. Demikian pula, Santosa et al. (2024) mencatat bahwa ekspektasi sosial yang dibebankan kepada perempuan dapat membatasi otonomi, peluang, dan akses mereka terhadap sumber daya. Kendala ini dapat meningkatkan kerentanan remaja perempuan untuk mengalami gejala depresi. Temuan ini menyoroti perlunya intervensi kesehatan mental yang menangani jalur spesifik yang berkontribusi terhadap perkembangan gejala depresi di kalangan remaja perempuan.

Perbedaan jenis kelamin atau *gender* yang teramati dalam profil gejala depresi menyoroti perlunya intervensi kesehatan mental yang disesuaikan untuk remaja Indonesia. Bagi remaja perempuan, yang lebih mungkin termasuk dalam profil dengan gejala depresi yang lebih tinggi, intervensi yang membantu individu mengidentifikasi dan menantang pola pikir yang tidak bermanfaat mungkin bermanfaat, terutama intervensi yang berkaitan dengan harga diri dan ekspektasi ideal. Intervensi yang secara eksplisit membahas ruminasi seperti *Rumination-Focused Cognitive Behavioral Therapy* (*RF-CBT*; Watkins et al., 2011) dapat sangat efektif dalam mengurangi pola pikir negatif berulang pada remaja perempuan (Langenecker et al., 2024). Selain itu, intervensi berbasis welas asih diri (Ferrari et al., 2019) juga dapat mengurangi dampak negatif dari perbedaan antara kondisi aktual dan ideal dengan menumbuhkan perspektif diri yang lebih baik dan lebih menerima.

Di sisi lain, remaja laki-laki cenderung tidak termasuk dalam profil dengan gejala depresi yang lebih tinggi, yang sebagian dapat dijelaskan oleh potensi kurangnya pelaporan (*underreporting*) yang didorong oleh *stigma* (Möller-Leimkühler et al., 2007) dan perbedaan dalam cara gejala depresi diekspresikan (Apicella et al., 2023). Mereka dapat memperoleh manfaat dari intervensi yang mencakup komponen yang bertujuan untuk menormalkan perilaku

emotional literacy (Duthie et al., 2024). More broadly, general promotive efforts such as psychoeducation can help adolescents recognize symptoms earlier, increase awareness, and encourage them to seek appropriate support (Shimazu et al., 2011; Morokuma et al., 2013).

Beyond informing the design of intervention programs, the identification of distinct depressive symptom profiles has important implications for mental health screening and diagnostic practices. The use of Latent Profile Analysis (LPA) allows for more detailed classification of adolescents based on symptom patterns, which can enhance the precision of screening tools by identifying subgroups that may be overlooked using traditional cut-off approaches. This profile-based approach could improve the identification of high-risk profiles in which could guide targeted screening efforts. Therefore, it may also help determine which adolescents should be prioritized for psychoeducational activities and more intensive interventions.

Additionally, the authors found that Item 5 ("I felt hopeful about the future") and Item 8 ("I was happy") from the Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) were less effective in distinguishing between high and low depressive symptom profiles. This finding is consistent with previous research, suggesting that these positively worded items may function differently from negatively framed items, potentially affecting their psychometric properties (Stansbury et al., 2006; James et al., 2020). Within the context of utilizing the abbreviated Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10) in the Indonesia Family Life Survey 5 (IFLS-5) dataset, these items appear to have limited discriminative value. Therefore, researchers may consider excluding these items when assessing depressive symptoms among Indonesian adolescents to improve measurement accuracy. Alternatively, it may be preferable to use depression screening tools based on diagnostic criteria, such as the Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001), which has demonstrated measurement invariance and validated clinical cut-off scores in the Indonesian population (Sucitra et al., 2025; Jaya et al., 2024).

Limitations and Suggestions

While this present study identifies profiles of depressive symptom severity in Indonesian adolescents, it does not

mencari bantuan (Syzdek et al., 2016) dan meningkatkan literasi emosional (Duthie et al., 2024). Secara lebih luas, upaya promotif umum seperti psikoedukasi dapat membantu remaja mengenali gejala lebih dini, meningkatkan kesadaran, dan mendorong mereka untuk mencari dukungan yang tepat (Shimazu et al., 2011; Morokuma et al., 2013).

Selain menginformasikan perancangan program intervensi, identifikasi profil gejala depresi yang berbeda (atau unik) memiliki implikasi penting bagi praktik skrining dan diagnostik kesehatan mental. Penggunaan *Latent Profile Analysis (LPA)* memungkinkan klasifikasi remaja yang lebih detail berdasarkan pola gejala, yang dapat meningkatkan presisi alat skrining dengan mengidentifikasi subkelompok yang mungkin terlewatkan oleh pendekatan *cut-off* tradisional. Pendekatan berbasis profil ini dapat meningkatkan identifikasi profil berisiko tinggi yang dapat memandu upaya skrining yang terarah. Oleh karena itu, pendekatan ini juga dapat membantu menentukan remaja mana yang harus diprioritaskan untuk kegiatan psikoedukasi dan intervensi yang lebih intensif.

Sebagai tambahan, para penulis menemukan bahwa Butir 5 ("Saya merasa penuh harapan tentang masa depan") dan Butir 8 ("Saya bahagia") dari *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)* kurang efektif dalam membedakan antara profil gejala depresi tinggi dan rendah. Temuan ini konsisten dengan penelitian sebelumnya, yang menunjukkan bahwa butir berstruktur positif ini mungkin berfungsi berbeda dari butir berstruktur negatif, yang berpotensi memengaruhi sifat psikometriknya (Stansbury et al., 2006; James et al., 2020). Dalam konteks penggunaan *Center of Epidemiologic Studies Depression Scale, 10-Item Version (CES-D-10)* dalam *dataset Indonesia Family Life Survey 5 (IFLS-5)*, butir tersebut tampaknya memiliki nilai diskriminatif yang terbatas. Oleh karena itu, peneliti dapat mempertimbangkan untuk mengecualikan butir tersebut saat menilai gejala depresi pada remaja Indonesia, untuk meningkatkan akurasi pengukuran. Sebagai alternatifnya, mungkin lebih baik menggunakan alat skrining depresi berdasarkan kriteria diagnostik, seperti *Patient Health Questionnaire-9* (*PHQ-9*; Kroenke et al., 2001), yang telah menunjukkan invariansi pengukuran dan skor batas (*cut-off scores*) klinis yang tervalidasi pada populasi Indonesia (Sucitra et al., 2025; Jaya et al., 2024).

Keterbatasan dan Saran

Walaupun studi ini mengidentifikasi profil keparahan gejala depresi pada remaja Indonesia, studi ini tidak me-

provide insight into the dynamics between specific symptoms. Depression is a heterogeneous condition, and not all symptoms contribute equally to its development. For instance, some symptoms might act as central nodes within the symptom network while others are more peripheral. Therefore, future studies should explore the structure of depressive symptoms using more appropriate methods, such as network analysis (Borsboom et al., 2021).

Conclusion

In this study, the authors identified two depressive symptom profiles in Indonesian adolescents—namely "High-Level" Depressive Symptoms Profile and "Low-Level" Depressive Symptoms Profile, which highlighted further need to address the needs for each profile accordingly. To the authors' knowledge, this appears to be the first article to evaluate the latent profiles of depressive symptoms within Indonesian adolescent contexts. Based on the comparisons between different profiles, it provided the information to better understand that female adolescents were more prone to be classified within a "High-Level" Depressive Symptoms Profile, which means that they require more attention and specific-targeted prevention.

nyediakan wawasan tentang dinamika antar-gejala spesifik. Depresi merupakan kondisi heterogen, dan tidak semua gejala berkontribusi secara setara terhadap perkembangannya. Sebagai contoh, beberapa gejala mungkin berperan sebagai *node* sentral dalam jaringan gejala, sementara yang lain lebih bersifat perifer. Oleh karena itu, studi selanjutnya sebaiknya mengeksplorasi struktur gejala depresi menggunakan metode yang lebih tepat, seperti analisis jaringan (*network analysis*; Borsboom et al., 2021).

Simpulan

Dalam studi ini, para penulis mengidentifikasi dua profil gejala depresi pada remaja Indonesia—yaitu Profil Gejala Depresi "Tingkat Tinggi" dan Profil Gejala Depresi "Tingkat Rendah", yang menyoroti perlunya penanganan lebih lanjut terhadap kebutuhan tiap profil. Sepengetahuan para penulis, artikel ini tampaknya merupakan artikel pertama yang mengevaluasi profil laten gejala depresi dalam konteks remaja Indonesia. Berdasarkan perbandingan antar profil, artikel ini menyediakan informasi untuk lebih memahami bahwa remaja perempuan lebih rentan diklasifikasikan dalam Profil Gejala Depresi "Tingkat Tinggi", yang berarti mereka memerlukan lebih banyak perhatian dan pencegahan yang spesifik dan terarah.

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