I-NAMHS INDONESIA – NATIONAL ADOLESCENT MENTAL HEALTH SURVEY

National Survey Report

Indonesia

–

National Adolescent Mental Health Survey (I-NAMHS) Report

UNIVERSITAS GADJAH MADA

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

KEMENTERIAN
KESEHATAN
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This report is the result of I-NAMHS, a collaboration which consists of the following partners: Center for Reproductive Health of Universitas Gadjah Mada (lead organization of I-NAMHS), Universitas Sumatera Utara, Universitas Hasanuddin, the Johns Hopkins Bloomberg School of Public Health, and the University of Queensland (lead organization of NAMHS).

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Indonesia

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Acronyms

ADHD:	Attention-deficit/hyperactivity disorder
CPMH:	Center for Public Mental Health
CRH:	Center for Reproductive Health
DEFF:	Design effect
DISC-5:	Diagnostic Interview Schedule for Children, Version 5
DSM-5:	Diagnostic and Statistical Manual of Mental Disorders, 5th Edition
EA:	Enumeration area
GBD:	Global Burden of Disease Study
GDP:	Gross domestic product
GEAS:	Global Early Adolescent Study
HICs:	High-income countries
HREC:	Human Research Ethics Committee
IDHS:	Indonesia Demographic and Health Survey
I-NAMHS:	Indonesia – National Adolescent Mental Health Survey
JHSPH:	Johns Hopkins Bloomberg School of Public Health

K-NAMHS:	Kenya – National Adolescent Mental Health Survey
LMICs:	Low- and middle-income countries
MoH:	Ministry of Health
NAMHS:	National Adolescent Mental Health Surveys
NIMH:	National Institute of Mental Health
ODK:	Open Data Kit
PPS:	Probability proportional to size
PTSD:	Posttraumatic stress disorder
RPJMN:	Rencana Pembangunan Jangka Menengah Nasional (National Medium-Term Development Plan)
SDQ:	Strengths and Difficulties Questionnaire
SI:	Statistics Indonesia
TUQIA	The University of Queensland in America
UGM:	Universitas Gadjah Mada
UHC:	Universal health coverage
Unhas:	Universitas Hasanuddin
UQ:	The University of Queensland
USU:	Universitas Sumatera Utara
V-NAMHS:	Viet Nam Adolescent Mental Health Survey
WHO:	World Health Organization

Foreword

In line with the 2020-2024 National Medium-Term Development Plan (RPJMN), the Government of the Republic of Indonesia through the Ministry of Health has made mental health one of the priorities of the national health program. Mental health is an important component to support Indonesia's development and its human resources, especially for the youth population who will be the determinant of Indonesia's future and to realize the Vision of Indonesia 2045.

The Ministry of Health welcomes the Indonesia – National Adolescent Mental Health Survey (I-NAMHS). I-NAMHS makes a significant contribution by producing the first national prevalence estimates for five common mental disorders among adolescents in Indonesia. These five disorders include major depressive disorder, anxiety disorders, posttraumatic stress disorder, attention-deficit/hyperactivity disorder, and conduct disorder.

This prevalence data is the beginning of the better development of policies, programs, and further research on mental health and adolescent well-being in Indonesia. This includes prevention and early detection of mental disorders so that the burden of disease and disability associated with these conditions can be minimized. The output of I-NAMHS also highlights the challenges and opportunities for synergies between the Ministry of Health and the Social Security Administration (BPJS) as the manager of the universal health coverage program in Indonesia. This information is crucial to ensure that all citizens, especially teenagers, can access mental health services and have optimal mental health conditions regardless of their socioeconomic status.

I-NAMHS was possible because of the cooperation of many parties. The Ministry of Health would like to thank the University of Queensland, Australia as the leader of NAMHS globally, and the Johns Hopkins Bloomberg School of Public Health, United States of America for providing technical assistance to I-NAMHS. The same appreciation is also conveyed to Universitas Gadjah Mada, particularly the Center for Reproductive Health as the leader of I-NAMHS, and the University of North Sumatra and Hasanuddin University as I-NAMHS partners.

We hope that I-NAMHS is a start for greater and better investment in adolescent mental health issues in Indonesia and a starting point for synergy in efforts to improve adolescent mental health to achieve the Vision of Indonesia 2045.

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Acknowledgements

This study and report are a result of collaboration by many parties.

I-NAMHS is indebted to the support given by the Ministry of Health of the Republic of Indonesia and Statistics Indonesia in developing the study and this report. The study was also supported by the Department of Psychiatry of Dr. Sardjito General Hospital Yogyakarta, UGM's Center for Public Mental Health, and Dr. Soerodjo Mental Hospital Magelang, Indonesia.

The national survey data collection would not be possible without the support and hard work from I-NAMHS partners, Universitas Sumatera Utara and Universitas Hasanuddin, which organized the training and fieldwork in their respective regions. Like similar surveys, I-NAMHS relied on the field supervisors and enumerators to conduct high-quality data collection. I-NAMHS extends its gratitude to the field staff who performed exceptionally during the global pandemic.

The National Adolescent Mental Health Surveys (NAMHS) is funded by The University of Queensland in America (TUQIA) through support from Pivotal Ventures, a Melinda French Gates company. The funding for NAMHS is administered by The University of Queensland (UQ) which, in turn, provided the funding for I-NAMHS to CRH UGM. As a part of NAMHS, I-NAMHS would also like to thank our global partners, the African Population and Health Research Center in Kenya, the Institute of Sociology in Vietnam, the Johns Hopkins Bloomberg School of Public Health in the United States, and the University of Queensland in Australia as the lead of this study. In developing and adapting the instruments for this study, I-NAMHS was also supported by Associate Professor Prudence Fisher of Columbia University, USA.

This study received valuable assistance from Dr. Ardhina Ramania, Dr. Ajrina Rarasrum, Dr. Aristo Tanadi, Dr. Dita Azka Nadhira, Dr. Luqman Hidayatullah, Dr. Nurida Khasanah, and Dr. Teresa Adryana. Mr. Heru Subekti and Ms. Mustikaningtyas who served as I-NAMHS research assistants and I-NAMHS postgraduate research assistant, respectively, also helped to realize this study. I-NAMHS would also like to thank Ms. Anggriyani Wahyu Pinandari for her expertise and advice. We would like to acknowledge the contributions of Meaghan Enright and Jamileh Shadid from UQ who provided support during the implementation of I-NAMHS including during the pilot study training, testing of data collection tools, programming, and other work on the survey. Additionally, we would like to acknowledge the work of the Johns Hopkins University Global Early Adolescent Study for their programming and data analysis support, especially the survey programming support of Mark Emerson.

I-NAMHS is thankful for the adolescents and their primary caregivers who participated in this survey. Without their involvement, I-NAMHS would not have been possible. This report is dedicated to them and the community leaders, the primary health care providers, and all organizations working on adolescent mental health in Indonesia. Above all, this report is for Indonesian adolescents, may they have a future that will always be bright

Executive Summary

Overview

The prevalence of mental disorders among adolescents in Indonesia is largely unknown. Accurate prevalence data are crucial for effective prevention, service planning, and prioritization of mental health policy. Accurate estimates also enable evidence-based advocacy and public health campaigns that can increase awareness of, and reduce stigma related to, mental health. This report presents findings from the Indonesia – National Adolescent Mental Health Survey (I-NAMHS), the first national survey to measure the prevalence of mental disorders in adolescents among a nationally representative sample of households across Indonesia.

This report includes findings related to mental health (inclusive of mental health problems and mental disorders). In I-NAMHS, adolescents with mental health problems were those who met at least half of the symptoms required for a given mental disorder but who may not necessarily meet all diagnostic criteria required for a mental disorder diagnosis. Adolescents with mental disorders were those who met the full diagnostic criteria required for a diagnosis. This report also includes findings related to use of services for emotional and behavioural problems. Rather than referring to mental health directly, the term ‘emotional and behavioural problems’ was used in questions related to service use to account for the myriad of ways that mental disorder symptoms can manifest and to avoid issues of stigma or poor mental health literacy. A chapter on findings related to COVID-19 in the context of mental health and wellbeing is also provided.

Key findings

- One in three adolescents (34.9%) had a mental health problem in the past 12 months, equating to 15.5 million Indonesian adolescents.
- One in twenty adolescents (5.5%) had a mental disorder in the past 12 months, equating to approximately 2.45 million Indonesian adolescents.
- Anxiety disorders were the most common mental disorder experienced by adolescents.
- No difference was seen in the overall prevalence of mental disorders by sex or by age, but some sex and age differences were seen in the prevalence of specific mental disorders.
- Only 2.6% of adolescents with a mental health problem had accessed services that provide support or counselling for emotional and behavioral problems in the past 12 months.
- Overall, only one in fifty adolescents (2.0%) had used services in the past 12 months, and two-thirds of these adolescents (66.5%) only accessed a service once.
- When asked what service providers were accessed the most, almost two-fifths (38.2%) of primary caregivers reported that this was school staff (i.e., teachers and other school staff).
- Only 4.3% of primary caregivers identified that their adolescent needed help for emotional and behavioral problems in the past 12 months (despite 34.9% of adolescents having experienced a mental health problem in the same period).
- Of the primary caregivers who indicated that their adolescent needed help, over two-fifths (43.8%) reported that they did not seek help because they preferred to handle the adolescent's problems themselves or with the support of family or friends.
- During the COVID-19 pandemic, 4.6% of adolescents reported often feeling more anxious, more depressed, more lonely, or having more problems concentrating more than usual.

Recommendations

- Anxiety was the most prevalent mental health problem among adolescents. Priority should be given to efforts to support anxiety management in adolescents and educate adolescents and their families on when and how to seek professional help for symptoms of anxiety.
- Implementation of specific screening and management strategies, integrated with mental health promotion activities, and the establishment of referral pathways within the school setting could be used to reduce the prevalence and potential impact of mental health problems as well as encouraging help-seeking behaviors among adolescents.
- Mental health literacy programs targeting caregivers should focus on ensuring they feel better equipped to handle worries or concerns presented by an adolescent while also educating them on indicators of mental health problems, where to seek help for such problems, and the benefits of doing so for both their adolescent and their family more broadly.
- In tandem, mental health training should be provided for health professionals across all Indonesian provinces to improve the recognition and treatment of mental health problems within the existing health workforce. Resources should also be devoted to task-shifting and growing mental health capacity within community health workers, particularly in rural and regional areas.

Introduction

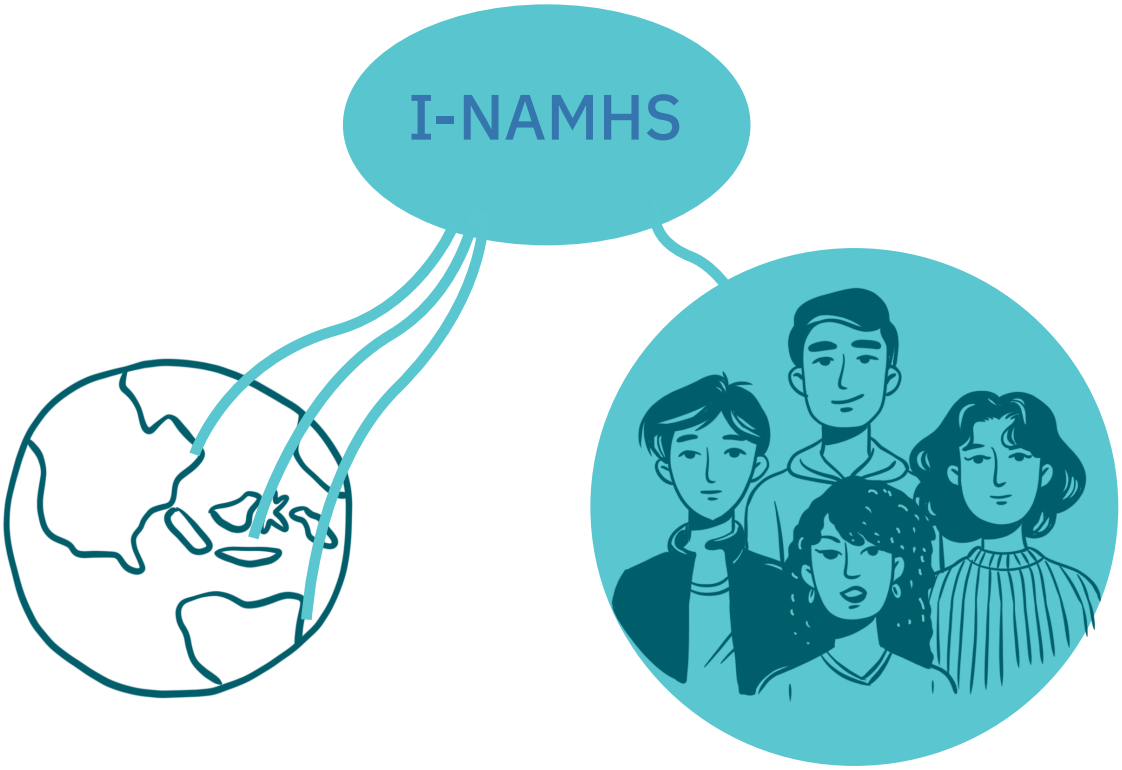
Background

The 2016 Lancet Commission on Adolescent Health and Wellbeing identified adolescence as a key period of physical and emotional development (Patton et al., 2016). While today's adolescents have an advantage over previous generations in terms of medical and technological advances, this generation also faces unprecedented health, social, economic, and cultural challenges (Kleinert & Horton, 2016; Patton et al., 2016). Understanding adolescent mental health is important given that over half of mental disorders begin during adolescence (World Health Organization, 2014) and can lead to long-term adverse health, social, and economic outcomes (Erskine et al., 2016; Ormel et al., 2017).

Globally however, there remains a large gap in prevalence data available for mental disorders among adolescents. A study by Erskine et al. (2017) found that only 6.7% of the global population of children and adolescents were represented by existing prevalence data for mental disorders, with a stark disparity between high-income countries (HICs; 26.4%) and low- and middle-income countries (LMICs; 4.5%). In Indonesia, the proportion of the population represented by available data for mental disorders among adolescents was even lower at less than 0.1% (Erskine et al., 2017), suggesting very little is known about the prevalence of mental disorders among in Indonesian adolescents. While some studies have provided estimates of mental disorders in Indonesian adolescents, these are limited by various methodological issues. For example, the 2018 Basic Health Research conducted by the Ministry of Health (MoH) reported that the prevalence of depressive symptoms was 5.1%. However, this survey used symptom measures instead of diagnostic instruments, limiting the ability to differentiate between adolescents with mild mental health symptoms (e.g., feeling sad) and those with mental disorders requiring support and intervention

(Suryaputri, Mubasyiroh, Idaiani, & Indrawati, 2022). Accurate prevalence data is crucial for the development of effective prevention strategies, service delivery programs, and advocacy campaigns for mental health. Such data requires use of diagnostic tools, consideration of cultural factors, and a robust study design. In parallel, it is important to understand how adolescents engage with services to support their mental health and gain insight into factors that may facilitate help-seeking behaviors or act as barriers to care.

The Indonesia – National Adolescent Mental Health Survey (I-NAMHS) is the first nationally representative household survey to measure the prevalence of mental disorders in adolescents in Indonesia. I-NAMHS will inform the Indonesian Government and other stakeholders about the prevalence of mental disorders, risk and protective factors, and service utilization among adolescents. Data collected will also inform international agencies and global research efforts, such as the Global Burden of Disease Study (GBD) which is used by a range of stakeholders and policymakers to support decision-making and prioritize funding and health promotion projects. Further, I-NAMHS provides a feasible methodology for ascertaining high-quality data that can be used in Indonesia in the future and can be adapted to neighboring countries. The information provided by I-NAMHS will aid in shaping and improving the Indonesian health system and in supporting policy changes to positively impact the lives of adolescents in Indonesia. Providing accurate national estimates of adolescent mental disorders will also enable a broader global movement in support of mental health and lay the foundations for an improved approach to culturally relevant mental health care.

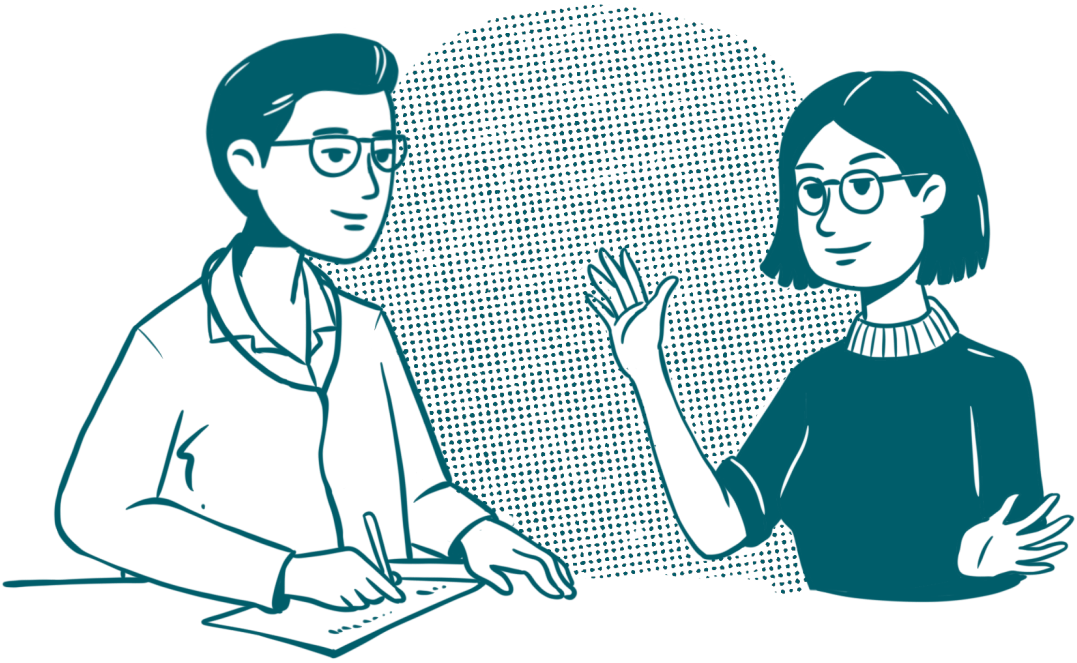


What is I-NAMHS?

I-NAMHS is a nationally representative household survey developed and conducted through collaboration between the Universitas Gadjah Mada (UGM) Center for Reproductive Health (CRH) in Indonesia and the University of Queensland (UQ) in Australia as the lead institutions, with support from the Johns Hopkins University Bloomberg School of Public Health (JHSPH) in the United States. Indonesia is one of three countries that conducted a similar project under the banner of NAMHS led by UQ; the other countries included are Kenya (K-NAMHS) and Vietnam (V-NAMHS).

The core aims of I-NAMHS are to:

1. Determine the prevalence of mental disorders in adolescents aged 10-17 years.
2. Identify risk and protective factors associated with mental disorders in adolescents.
3. Understand patterns of use, barriers to care, and perceived need for mental health services.



Who conducted I-NAMHS?

CRH was responsible for the implementation of I-NAMHS. CRH consulted MoH and Statistics Indonesia (SI) to ensure that I-NAMHS would deliver information most pertinent to policymakers. CRH was also supported by Universitas Sumatera Utara (USU) and Universitas Hasanuddin (Unhas) in managing the data collection in the western and eastern parts of Indonesia, respectively. UGM's Center for Public Mental Health (CPMH) was involved in the pilot testing of the survey.

In accordance with the law and regulations in Indonesia, I-NAMHS was approved by the UGM Medical and Health Research Ethics Committee (Approval number KE/FK/1212/EC/2019), as well as UQ's Human Research Ethics Committee (HREC) B (Approval number: 2019001268). I-NAMHS also had endorsement from the Ministry of Home Affairs of the Republic of Indonesia to conduct a nationally representative survey (Approval number 440.02/835/Polpum).

Who participated in I-NAMHS?

Participants were adolescents and their primary caregiver across 34 provinces in Indonesia. Eligible adolescents were those aged 10-17 years living with their primary caregiver more than 50% of the time. Adolescents aged 18-19 years were not included because a high proportion of these adolescents are likely to be living away from the family and because the diagnostic measures were not designed for people aged 18 years and older (Erskine et al., 2021). In households with more than one eligible adolescent, an adolescent was randomly selected from the household roster by the programmed data collection instrument. This ensured no unintentional bias in regard to selection of the reference adolescent.

The primary caregiver was an adult member of the household (i.e., 18 years of age or older) who had responsibility and provided care for the adolescent, knew the most about them, and was best placed to answer questions about their health and wellbeing. Households were excluded from the study if:

- There was not an adolescent aged 10-17 living at the interviewed address
- The adolescent was not living at the interviewed address most of the time and/or was temporarily away from home
- The adolescent was married
- The adolescent OR primary caregiver did not speak Bahasa Indonesia
- There was no primary caregiver living at the address
- The household or primary caregiver did not provide consent to participate
- The adolescent was unable to participate due to severe physical or cognitive impairments (as assessed by a standard measure)

As shown in Table 1, a total of 6,580 households from 34 provinces across Indonesia were randomly selected for approach as per the survey sampling frame (see Appendices: Methodology for further information). Of these, 5,760 households were eligible and agreed to participate, giving a total response rate of 92.2% (calculated by dividing the total number of participating, eligible households [n = 5,760] by the total number of households after discounting ineligible households [n = 6,245]). Households with incomplete data (n = 96) were not included in the final sample, giving a final I-NAMHS reporting sample of 5,664 primary caregiver-adolescent pairs.

Table 1. Sample recruitment for I-NAMHS

Total number of households in scope for approach	6,580
Total number of households that were not approached or unavailable [a]	280
Total number of households that refused participation	205
Total number of ineligible households	335
Total number of participating, eligible households	5,760
Total number of households with incomplete data	96
Total number of households with complete data	5,664

[a] This includes all households in one enumeration area (EA) that could not be approached due to conflict.

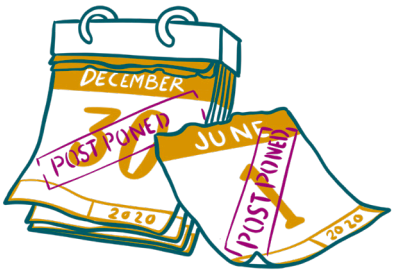
What were participants asked?

I-NAMHS focused on six mental disorders among adolescents including social phobia, generalized anxiety disorder, major depressive disorder, conduct disorder, posttraumatic stress disorder (PTSD), and attention-deficit/hyperactivity disorder (ADHD). Social phobia and generalized anxiety disorder are reported collectively as 'anxiety disorders' in this report. All mental disorders were measured using the Diagnostic Interview Schedule for Children, Version 5 (DISC-5) developed by a team at Columbia University, USA (Bitsko et al., 2019; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). The DISC-5 is a structured interview designed to be administered by trained interviewers without any clinical or medical background (i.e., 'lay interviewers').

I-NAMHS also included several additional measures of risk and protective factors relevant to adolescent mental health, such as bullying, school and education, peer and family relationships, sexual behavior, substance use, and adverse childhood experiences, as well as measures of service use. These measures were adapted and developed through a collaborative process involving the international NAMHS partners (Erskine et al., 2021). The instrument also included a set of questions designed specifically for Indonesia which assessed health insurance status and use for accessing mental health services for the adolescent. A complete list of measures can be found in Appendices: Measures. The I-NAMHS instrument was split into a questionnaire administered to the primary caregiver and the adolescent separately. The instruments were originally developed in English and were then translated into Bahasa Indonesia and back-translated into English to check for conceptual consistency and accuracy (i.e., ensuring that the meaning of questions remained consistent with the original English version). The translated concepts were then internally reviewed during trainings, as well as checked by a board of clinicians in Indonesia. The translated instruments were piloted in January 2020 after which further revisions were made prior to the finalization of the instrument for data collection.

When was I-NAMHS conducted?

I-NAMHS was conducted between 8 March 2021 and 30 November 2021. Due to the COVID-19 pandemic, data collection was split into three phases with data collection only commencing in each enumeration area (EA) when public health officials indicated it was safe to do so. The first phase began in March 2021 and consisted of EAs under the direct supervision of CRH. Both the second and the third phases began in July 2021 and consisted of EAs under the supervision of USU and Unhas, along with some additional EAs under the jurisdiction of CRH that were deemed unsafe for data collection during the first phase.



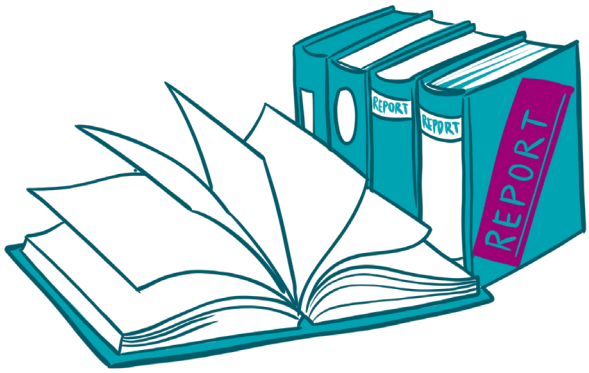
Did COVID-19 impact I-NAMHS?

The unprecedented situation with COVID-19 directly affected the I-NAMHS' timeline. Data collection was initially planned to commence in June 2020. However, after considering the global and national situation and consulting with global and domestic partners, data collection was postponed until March 2021.

In preparation for data collection during such an event, CRH tracked the COVID-19 status in each EA and developed a reporting and scoring system to assess each EA's readiness for data collection. The field staff safety protocol was also updated in accordance with the COVID-19 safety protocol. Both CRH and UQ consulted with their ethical review committees to ensure that all necessary steps were taken to protect participants and field staff.

In addition to the master training conducted in Yogyakarta in December 2019, an online refresher training was conducted in January 2021 by CRH and UQ. This was then followed by field staff training. Both trainings provided a thorough overview of the modules within the I-NAMHS instrument and relevant administration processes. The field staff training design was also modified into a hybrid model which was a combination of a week-long online training and a 2.5-day face-to-face meeting.

The COVID-19 pandemic also provided an opportunity to assess the effect of restrictions of movement and contact with peers, together with other potential stressors related to the pandemic, on adolescent mental health. Two COVID-19 modules (one for the primary caregiver and one for the adolescent) were developed specifically for the survey by UQ, JHSPH, CRH, and the other international NAMHS teams.



What is the scope of this report?

This report provides key findings from I-NAMHS that relate to the core aims of the study and are relevant for Indonesian stakeholders. The report has three main chapters: mental health (inclusive of suicidal behaviors and self-harm), service use, and COVID-19. Sample characteristics (i.e., demographics) are included while other information related to methodology and conduct of the survey is included in the Appendices. All findings (proportions and numbers) have been weighted to represent the Indonesian population of adolescents aged 10-17 years unless stated otherwise. While tests of statistical significance are not included in the report, differences that are statistically significant have been highlighted in the relevant table or text. Only differences which are statistically significant are discussed in text.

This report is not designed nor intended to provide a full comprehensive record of all data and findings from I-NAMHS. Other findings and more in-depth analyses, including findings from the oversampled areas of Purworejo Regency and City of Palu, will be provided in upcoming reports. The information presented here is intended to provide the MoH and other stakeholders with a better understanding of the prevalence of mental disorders to improve mental health promotion and encourage increased availability of mental health services for adolescents. Each chapter has been designed to provide sufficient information to be read independently, although it is recommended that the report is read in its entirety.

Sample Characteristics

Table 2 shows the demographic characteristics of the adolescent sample, while Table 3 shows the demographic characteristics of the primary caregiver sample. Table 4 shows the household-level information. All findings reported in these tables are unweighted. All information was reported by the primary caregiver and inputted into the adolescent form prior to the adolescent interview. Where discrepancies occurred, these were resolved using pre-determined methods.

Adolescent

Table 2. Adolescent sample by age, sex, education, and employment status

Measure	%	N=5,664 (n)
Age		
10-13	50.4	(2,857)
14-17	49.6	(2,807)
Sex		
Males	49.5	(2,803)
Females	50.5	(2,861)
Education status		
Currently attending school	96.4	(5,460)
Not currently attending but have attended in the past 12 months	1.6	(89)
Have attended but not in the past 12 months	2.0	(112)
Never attended school	0.1	(3)
Employment status		
Currently employed	3.8	(217)
Not currently employed but have been employed in the past 12 months	1.0	(54)
Have been employed but not in the past 12 months	0.5	(27)
Never been employed	94.7	(5,366)
Not currently attending school AND not currently employed	2.6	(146)

Average age of the adolescent: 13.5 years

Primary caregiver

Table 3. Primary caregiver sample by demographic information

Measure	%	N=5,664 (n)
Age (mean, year)[a]	42.7 years	
Sex		
Male	20.5	(1,163)
Female	79.5	(4,501)
Relationship with adolescent		
Mother ^	75.7	(4,290)
Father ^^	20.0	(1,132)
Grandparent	2.3	(132)
Other family member	1.9	(108)
Marital status		
Married	90.0	(5,098)
Never married	0.7	(40)
Other	9.2	(521)
Education level		
None	2.1	(119)
Primary school	26.1	(1,480)
High school	55.1	(3,119)
Trade/vocational school or equivalent	4.1	(234)
Tertiary education	12.2	(693)
Currently studying	1.2	(111)
Employment status		
Full-time	31.5	(1,783)
Part-time/casual	26.5	(1,500)
Not employed but seeking employment	2.4	(135)
Not employed and not seeking employment	39.4	(2,231)

[a] n = 5,616 (after excluding ages <18 years [n=1] and non-meaningful responses [n=47]);

^ includes stepmother (which was a separate response option) and adoptive mother (as inferred);

^^ includes stepfather (which was a separate response option) and adoptive father (as inferred);

Household

Table 4. Household sample by demographic information

Measure	%	N=5,664 (n)
Wealth Quintile [a]		
Q1	20.2	(1,146)
Q2	20.7	(1,170)
Q3	20.7	(1,172)
Q4	17.6	(999)
Q5	20.8	(1,177)
Urbanicity [b]		
Urban	69.1	(3,913)
Rural	30.9	(1,751)
Region		
Sumatera	22.2	(1,258)
Jawa/ Bali	58.2	(3,295)
Kalimantan/ East Area	19.6	(1,111)

[a] Derived from Wealth Index questions answered by the primary caregiver

[b] As per the classification by the Ministry of Home Affairs

Mental Health

Overview

Adolescents make up almost one-fifth of Indonesia's population (Statistics Indonesia, 2021). The current generation has been referred to as the 'Golden Generation' ('Generasi Emas') because of its importance to Indonesia's continued economic growth and position on the global stage (Wilopo et al., 2021). However, relatively little is known about the prevalence of mental disorders among Indonesian adolescents despite international research indicating that mental disorders during this developmental period can have adverse outcomes throughout the life course (Erskine et al., 2016; Ormel et al., 2017). Previous studies in Indonesia have found that up to 28% of older adolescents (aged 15-19 years) report depressive symptoms (Purborini, Lee, Devi, & Chang, 2021) while others have found prevalence of depressive symptoms to be as low as 5% (Suryaputri et al., 2022). Beyond depression, one study focusing on the impacts of the 2004 tsunami found that 8.9% of 4-18-year-olds in North Aceh met criteria for a mental disorder (Wiguna, Guerrero, Kaligis, & Khamelia, 2010).

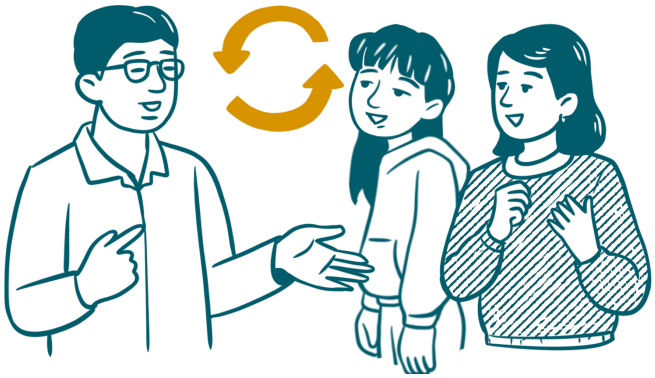
However, the available literature is limited by use of symptom scales rather than diagnostic measures, small sample sizes, restricted locations or age ranges, and/or a focus on specific disorders. A study looking at the representativeness of the prevalence data for mental disorders in children and adolescents found that less than 1% of the Indonesian population of young people was represented by available data utilizing diagnostic instruments (Erskine et al., 2017). As such, the evidence to inform adolescent mental health policy in Indonesia, and the subsequent ability to act positively for adolescent mental health, is limited. The core aim of I-NAMHS is to generate nationally representative prevalence estimates of mental disorders in Indonesian adolescents. This chapter outlines how mental health was measured in I-NAMHS and provides a detailed explanation of the difference between mental health problems and mental disorders, as well as the rationale for reporting both. Findings are presented (as both weighted proportions and numbers) for mental health problems and mental disorders. In addition, the prevalence of suicidal behaviors and self-harm are also presented in the context of mental health. Finally, considerations related to the interpretation of these findings and their implications for policymakers are briefly discussed.

Measurement

Measures

Diagnostic modules from the DISC-5 were used to assess the prevalence of mental disorders in the past 12 months. The DISC-5 is a standardized diagnostic instrument (Bitsko et al., 2019; Shaffer et al., 2000) first developed by Columbia University through support from the United States National Institute of Mental Health (NIMH). The DISC-5 is designed to be administered by trained 'lay' interviewers, i.e., individuals who do not have any clinical training but who are trained on the DISC-5. The DISC-5 was used to assess anxiety disorders (inclusive of social phobia and generalized anxiety disorder), major depressive disorder, conduct disorder, PTSD, and ADHD. These disorders were chosen as they are prevalent in adolescence and are responsible for a significant proportion of burden of disease in this age group (Erskine et al., 2015). Except for the ADHD module (which was administered to the primary caregiver), all DISC-5 modules (i.e., measures of individual disorders) were administered to the adolescent.

Measures of suicidal behaviors and self-harm were included. Suicidal behaviors include suicidal ideation (serious thoughts about taking your own life), making a suicide plan (making a plan to end your own life), or attempting suicide (where the self-injury or action is intended to end your life). Self-harm means deliberately hurting or injuring yourself without trying to end your life (i.e., non-suicidal self-injury). All adolescents were asked questions related to suicidal behaviors and self-harm, regardless of their mental disorder status. For suicidal behaviors in the past 12 months specifically, adolescents were only asked about suicide planning if they endorsed suicidal ideation and were only asked about suicide attempts if they endorsed suicide planning.



Mental health problems and mental disorders

The content and structure of the DISC-5 was designed to follow established diagnostic criteria for mental disorders and was recently updated to meet the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) (American Psychiatric Association, 2013). A diagnosis of a mental disorder according to the DSM-5 requires an individual to not only endorse the symptoms of a certain mental disorder but also to meet specific thresholds regarding the duration, frequency, severity, and expression of these symptoms, while further reporting a minimum level of impairment caused by these symptoms. The questions in the DISC-5 reflect DSM-5 criteria by first asking about a given symptom and then asking detailed questions about the specific characteristics of this symptom as required for diagnosis. This differentiates a diagnostic instrument, such as the DISC-5, from 'symptom scales' which only ask about the general presence of a symptom. As such, symptom scales tend to report much higher prevalence than diagnostic instruments (Ferrari et al., 2013; GBD 2019 Mental Disorders Collaborators, 2022; Santomauro et al., 2021) as they are assessing symptoms and not disorders.

However, individuals can still experience distress and associated impairments without necessarily meeting the DSM-5 criteria for diagnosis of a specific mental disorder. These individuals may be an important group for preventive intervention prior to progressing on to a fully developed mental disorder (Pagliaro, Pearl, Lawrence, Scott, & Diminic, 2021). In parallel, questions have also been raised regarding the applicability of DSM-5 diagnostic criteria to non-Western cultures and the impact of cultural factors when administering a standardized instrument such as the DISC-5 (Canino & Alegría, 2008; Patel & Winston, 1994).

In recognition of these potential challenges, two sets of findings are presented. First, the prevalence of 'mental health problems' are reported which, for the purposes of this report, includes individuals who meet at least half of the symptoms for a given mental disorder as measured by the DISC-5 but who may not necessarily meet all the diagnostic criteria required for a diagnosis as specific in DSM-5. Second, the prevalence of mental disorders is reported. This includes individuals who meet diagnostic criteria for a mental disorder as specified by DSM-5. Table 5 below gives the general definition for mental health problems and mental disorders, as well as the definition according to Indonesia law and the operational definition as applied in I-NAMHS. The terminology used for the different types of mental health problems versus mental disorders are also shown.

Table 5. Definitions of mental health problems and mental disorders

	Mental health problem	Mental disorder
General definition	Interferes with how a person thinks, feels, and behaves, but to a lesser extent than a mental disorder. They can be experienced temporarily, or as an acute reaction to the stresses of life.	Clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and is associated with present distress (e.g., a painful symptom), disability (i.e., impairment in one or more important areas of functioning), and/or a significantly increased risk of suffering death, pain, disability, or an important loss of freedom.
Indonesia's Ministry of Health definition (based on the Law Number 18 Year 2014 on Mental Health) (Republic of Indonesia, 2014)	People who have physical, mental, social, growth, and developmental problems, and/or poor quality of life which puts them at risk of experiencing mental disorders.	People who experience disturbances in thoughts, behavior, and feelings that are manifested in the form of a set of symptoms and/or significant behavioral changes, and can cause suffering and obstacles in carrying out people's functions as human beings.
Applied definition within I-NAMHS	An adolescent was considered to have a mental health problem if at least half of the symptoms required for diagnosis of a given mental disorder were endorsed (i.e., 'subthreshold symptoms). Adolescents with mental health problems therefore included those with subthreshold or full threshold symptoms, with or without impairment. As such, this group also includes adolescents who meet criteria for a mental disorder.	An adolescent was considered to have met DSM-5 criteria for a mental disorder if all required symptoms (i.e., 'full threshold symptoms') and a level of impairment due to these symptoms were endorsed. This diagnosis followed standard scoring algorithms which were provided by the DISC-5 authors.
Terminology for different types	Depression	Major depressive disorder
	Anxiety	Anxiety disorders
	Posttraumatic stress	PTSD
	Conduct problems	Conduct disorder
	Problems with inattention and/or hyperactivity	ADHD

Findings

Mental health problems

Over a third of all adolescents (34.9%) reported a mental health problem in the past 12 months (Table 6). No difference was seen between males and females, or younger (10-13 years) and older (14-17 years) adolescents.

Table 6. 12-month prevalence of mental health problems among 10-17-year-olds by sex and age group

Mental health problems	10-13 years		14-17 years		Total	
	%	(n/N)	%	(n/N)	%	(n/N)
Males	36.1	(540/1,498)	33.0	(457/1,385)	34.6	(997/2,883)
Females	34.2	(498/1,458)	36.2	(479/1,322)	35.1	(977/2,781)
Total	35.1	(1,038/2,956)	34.6	(936/2,708)	34.9	(1,974/5,664)

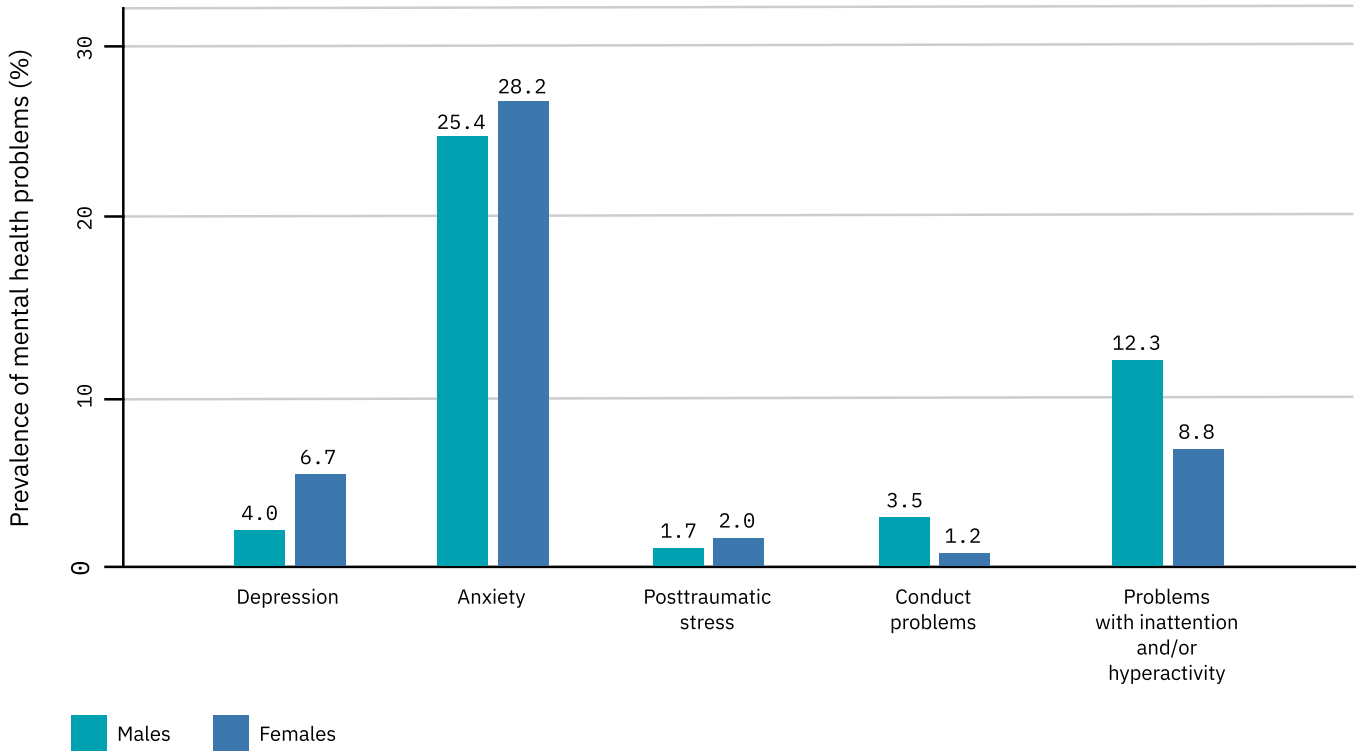
n=numerator; N=denominator

As shown in Table 7, anxiety was the most prevalent mental health problem (26.7%) among 10-17-year-olds in Indonesia.

Table 7. 12-month prevalence of mental health problems among 10-17-year-olds by type

Mental health problems	Total	
	%	N=5,664
Depression	5.3	(302)
Anxiety	26.7	(1,514)
Posttraumatic stress	1.8	(104)
Conduct problems	2.4	(134)
Problems with inattention and/or hyperactivity	10.6	(599)

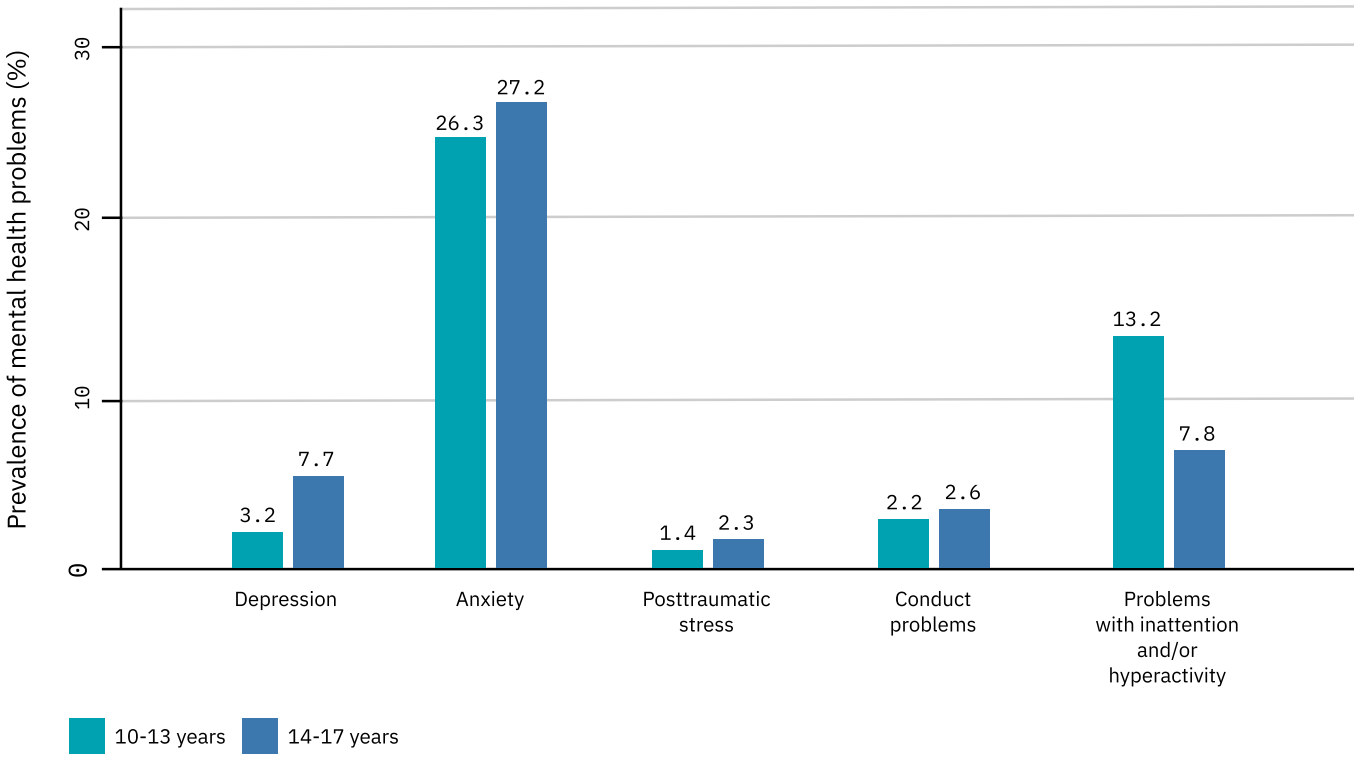
Anxiety was the most prevalence mental health problem for both males (25.4%) and females (28.2%). Females (6.7%) had higher prevalence of depression than males (4.0%) while males had higher prevalence of conduct problems (3.5% vs 1.2%) and problems with inattention and/or hyperactivity (12.3% vs 8.8%) than females.



Note:
Male=2,883; Female=2,781; Total=5,664
Statistically significant difference between males and females for depression, conduct problems, and problems with inattention, and/or hyperactivity
Adolescent can be diagnosed with more than one mental health problem

Figure 1. 12-month prevalence of mental health problems among 10-17-year-olds by sex and type

As shown in Figure 2, younger adolescents had higher prevalence of problems with inattention and/or hyperactivity (13.2%) as compared to older adolescents (7.8%), while older adolescents had higher prevalence of depression (7.7%) as compared to younger adolescents (3.2%).



Note:
10-13 years=2,956; 14-17 year=2,708; Total=5,664
Statistically significant difference between age groups for depression and problems with inattention and/or hyperactivity
Adolescent can be diagnosed with more than one mental health problem

Figure 2. 12-month prevalence of mental health problems among 10-17-year-olds by age group and type

Adolescents with mental health problems were further analyzed to determine the proportion reporting impairment due to their symptoms in combination with the proportion reporting full threshold vs subthreshold symptoms. Symptom thresholds were based on DSM-5 criteria whereby subthreshold symptoms indicate at least half (but not all) of the required symptoms were met while full threshold symptoms indicate that all required symptoms were met. This means that adolescents with a mental health problem were categorized into one of the four groups shown in Figure 3 (noting that full threshold symptoms with impairment equate to those meeting criteria for a mental disorder). Figure 3 shows that most adolescents with a mental health problem reported a level of impairment due to their symptoms, whether endorsing all symptoms required for a DSM-5 diagnosis (5.5%) or at least half of the required symptoms (16.7%).

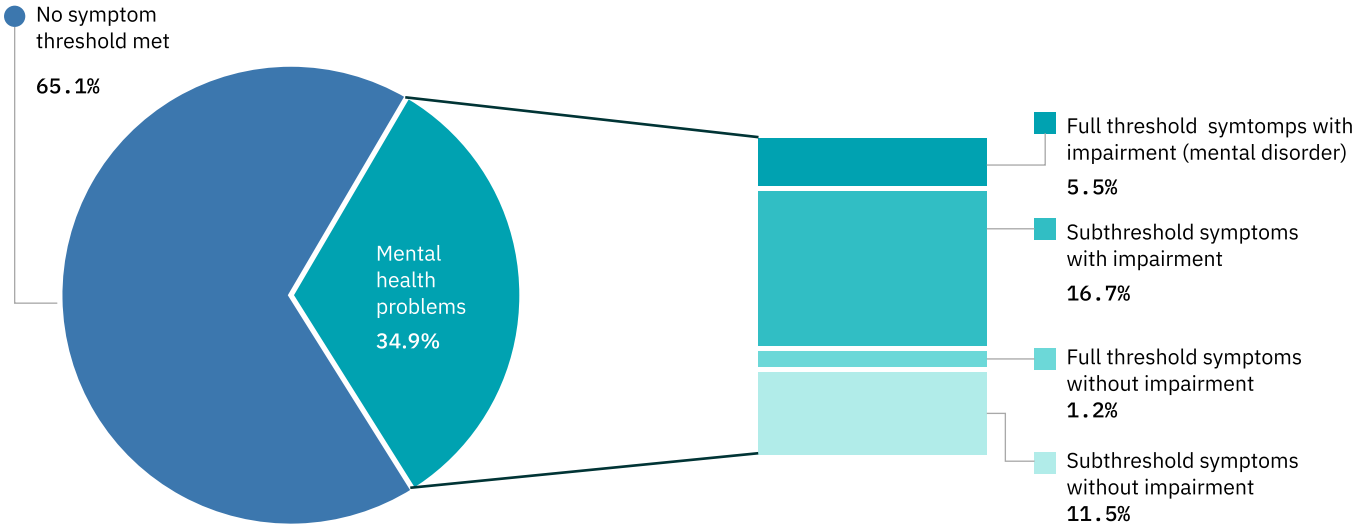


Figure 3. Mental health problems among 10-17-year-olds by symptom threshold and impairment endorsement

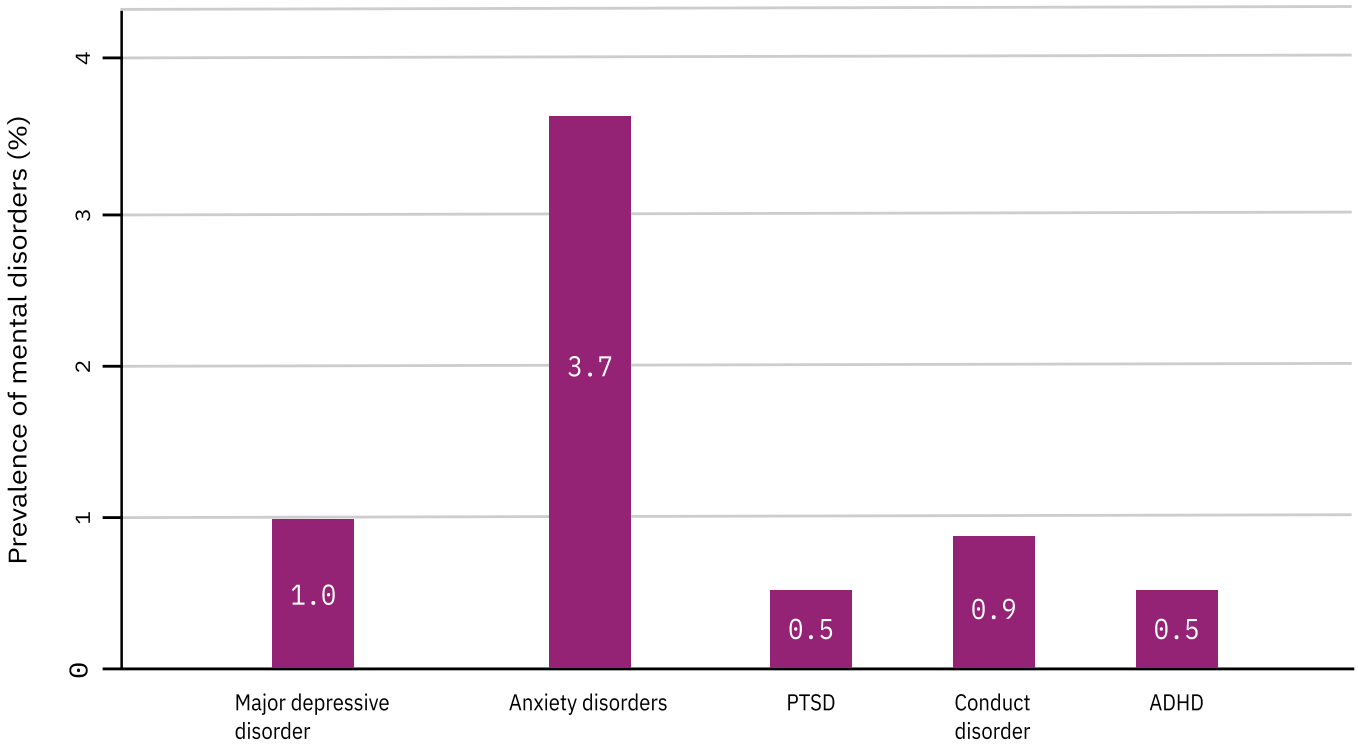
The DISC-5 assessed impairment (as required for DSM-5 diagnosis) caused by symptoms across four domains: family (problems with relationships with caregivers, difficulties spending time with family), peers (difficulties spending time with peers), school or work (difficulties with school or work), and personal distress. Impairment in more than one domain could be endorsed. Of those with a mental health problem who reported impairment (n = 1,257), almost two-thirds (64.7%) reported impairment in the family domain, while impairment in relation to peers (41.1%) or school/work (39.3%) was reported by approximately two-fifths, respectively (Table 8).

Table 8. Proportion of 10-17-year-olds with mental health problems experiencing each impairment domain

Impairment domain	Proportion N=1,257	
	%	(n)
Family	64.7	(814)
Peers	41.1	(517)
School or work	39.3	(493)
Personal distress	27.2	(342)

Mental disorders

DSM-5 diagnostic criteria for any mental disorder were met by 5.5% (n = 309) of adolescents, with 1% (n = 55) having two or more mental disorders in the past 12 months. No difference in prevalence was seen between males (5.8%) and females (5.1%) or younger (4.5%) and older (6.5%) adolescents. As shown in Figure 4, anxiety disorders had the highest prevalence of any mental disorder (3.7%).



Note:
N=309; adolescent can be diagnosed with more than one mental disorder

Figure 4. 12-month prevalence of mental disorders among 10-17-year-olds by type

Of those with any mental disorder, impairment was again highest in the family domain (83.9%) (Table 9).

Table 9. Proportion of 10-17-year-olds with mental disorders experiencing each impairment domain

Impairment domain	Proportion N=309	
	%	(n)
Family	83.9	(259)
Peers	62.1	(192)
School or work	58.1	(180)
Personal distress	46.0	(142)

Suicidal behaviors and self-harm

Few adolescents reported suicidal behaviors in the past 12 months. Among the whole sample, 1.4% reported suicidal ideation, 0.5% reported making a suicide plan, and 0.2% reported attempting suicide. Only 0.4% of adolescents reported ever attempting suicide. However, as shown in Table 10, over 80% of those endorsing a suicidal behavior (ideation, planning, and/or attempt) in the past 12 months had a mental health problem.

Table 10. Mental health problems and mental disorders among 10-17-year-olds reporting suicidal behaviours

	Suicidal ideation in past 12 months, % (n/N)	Suicide planning in past 12 months, % (n/N)	Suicidal attempt in past 12 months, % (n/N)	Suicide attempts ever, % (n/N)
Mental health problem	84.1 (68/81)	96.6 (24/25)	100 (9/9)	90.4 (19/21)
Mental disorder	30.1 (24/81)	40.3 (10/25)	53.2 (5/9)	58.7 (12/21)

n=numerator; N=denominator

Similarly, only a small proportion (4.4%) of adolescents reported having ever deliberately harmed themselves, with 1% reporting having self-harmed in the past 12 months. Again however, most adolescents reporting self-harm in the past 12 months had a mental health problem (88.3%) (Table 11).

Table 11. Mental health problems and mental disorders among 10-17-year-olds reporting self-harm

	Self-harm in past 12 months, % (n/N)	**Self-harm ever, % (n/N)**
Mental health problem	88.3 (45/51)	71.8 (180/251)
Mental disorder	33.8 (17/51)	26.1 (65/251)

n=numerator; N=denominator

Considerations

Interpretation

I-NAMHS found that mental health problems are common among adolescents, with one in three adolescents (34.9%) having a mental health problem in the past 12 months. Further, one in twenty (5.5%) Indonesian adolescents met criteria for a mental disorder. Given that this equates to 13 million and 2 million adolescents, respectively, based on current census data (Statistics Indonesia, 2021), the findings of I-NAMHS demonstrate that mental health is a serious public health issue within this demographic. This is further supported by the finding that the vast majority of adolescents who reported a suicidal behavior or self-harm in the past 12 months also reported having a mental health problem.

There are few studies that have utilized diagnostic measures to estimate the prevalence of mental disorders among the general adolescent population in Indonesia. Overcoming such methodological limitations is a core feature of I-NAMHS and, as such, direct comparison to existing studies is challenging given fundamental differences in methodology. For example, a study of 12-17-year-olds in West Java Province found 31.6% had either a borderline or abnormal score on the Strengths and Difficulties Questionnaire (SDQ), a brief screening questionnaire for mental health problems (Pandia et al., 2021). While this finding is not completely disparate from the prevalence of mental health problems found in I-NAMHS (34.9%), caution should be taken when interpreting the findings of different populations and measures. Further, many existing studies focus on specific subpopulations of interest, such as those impacted by population-level events like armed conflicts or natural disasters (Fausiah, Turnip, & Hauff, 2019; Wiguna et al., 2010). A study investigating the prevalence of mental disorders among 4-18-year-olds in North Aceh district found that 8.9% of youth exposed to the tsunami disaster of December 2004 met criteria for any mental disorder based on clinical assessment (Wiguna et al., 2010). However, the authors also found that those exposed to the trauma were significantly more likely to have higher scores on the initial symptom screening measure than those who were not exposed (e.g., 46.5% of trauma-exposed 11-18-year-olds vs 12% of non-trauma-exposed 11-18-year-olds). While the prevalence of mental disorders based on clinical assessment among the non-trauma-exposed group was not reported by the authors (likely due to small numbers), these findings indicate that the prevalence of mental disorders (5.5%) found by I-NAMHS for the broader population is not unexpected. The lack of existing comparable studies demonstrates the significant evidence gap addressed by I-NAMHS, as well as the importance of utilizing comprehensive measures across a nationally representative sample to better understand the prevalence of mental disorders in the adolescent population.

Limitations

While I-NAMHS was intentionally designed to address the methodological limitations of existing studies, some aspects of the I-NAMHS methodology may have impacted the reported prevalence. For example, interviews were administered face-to-face by a trained interviewer. It is possible that the stigma associated with mental health problems and general lack of awareness about mental health in the community impacted participant willingness to disclose information (Hartini, Fardana, Ariana, & Wardana, 2018). This is despite comprehensive interviewer training, privacy being a requirement of the interview, and all participants being advised that collected data would be anonymous. A similar issue may have been present in regard to suicidal behaviors and self-harm, given that self-harm and suicide are topics that are rarely discussed among Indonesian adolescents (Liem, Prawira, Magdalena, Siandita, & Hudiyana, 2022; Putra, Karin, & Ariastuti, 2019). While the prevalence of suicidal behaviors in I-NAMHS were lower compared to previous research in Indonesia (Putra et al., 2019), the results demonstrating that those reporting suicidal behaviors or self-harm are more likely to be those with mental health problems are in line with the finding of studies from neighboring countries. For example, studies have found that the proportion of adolescents reporting suicidal ideation is significantly higher among those with depressive symptoms (Ahmad, Cheong, Ibrahim, & Rosman, 2014; Peltzer & Pengpid, 2012).

A further challenge may relate to the definitions of mental disorders as per the DSM-5 (as this is what the DISC-5 is based on). The DSM-5 was developed by the American Psychiatric Association and largely includes Western-based criteria (American Psychiatric Association, 2013). It is therefore possible that the requirements for diagnosis may not account for cultural differences in how mental health is described, experienced, or expressed in Indonesian population. For example, a diagnosis of conduct disorder according to the DSM-5 requires specific behaviors that violate societal or age-appropriate norms to be endorsed.

However, the norms on which the DSM-5 bases this diagnosis (and, subsequently, the behaviors included in the DISC-5) are United States-centric. This posed challenges when adapting the DISC-5 for the Indonesian context where, for example, truancy is considered a relatively normal adolescent behavior and does not warrant a special attention by teachers or parents when done occasionally. As such, it is not a good indicator of rule-breaking nor an adolescent's tendency to violate social norms. Another example is questions related to fire setting which required further explanation and nuance to distinguish them from culturally accepted practice related to agriculture and food preparation.

To address these challenges, substantial efforts were made to adapt the DISC-5 for use in the Indonesian setting within the confines of the diagnostic requirements of DSM-5. The aim was to ensure that the language of the instrument (including grammar, idioms, and examples of behaviors) was adequately adapted to the Indonesian context while still measuring the same concepts as originally intended. This included careful translation of the instrument (including the DISC-5) into Bahasa Indonesia by CRH, back-translation by native speakers external to the study, review of translations and back-translations by CRH and UQ, revision based on feedback during initial training, and review by in-country clinicians. Changes were also made in response to the pilot study (further described in Appendices: Methodology). Revision continued throughout 2019 and 2020. However, it is acknowledged that a major challenge with any national survey in Indonesia is the fact that Indonesia is exceptionally linguistically diverse (Lewis, Simons, & Fennig, 2014). A single version of the I-NAMHS instrument in Bahasa Indonesia was administered country-wide in order to ensure consistency across the national sample. It is therefore possible that some concepts, nuances, or examples may not have been well understood by participants in certain locations (Kalfoss, 2019).

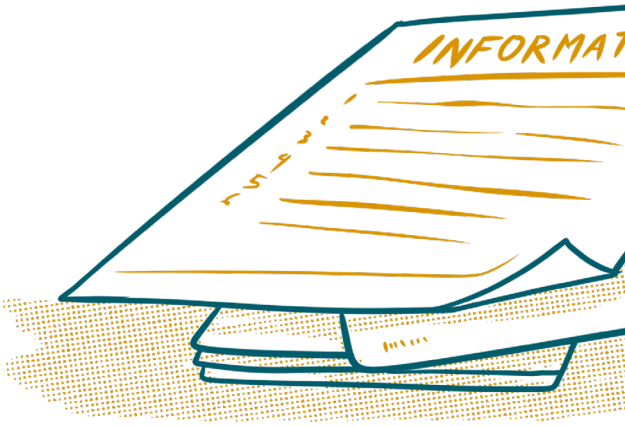
Finally, to better understand the potential interplay between cultural differences in mental health and the diagnostic requirements of the DSM-5, both mental health problems and mental disorders have been included in this report. This allows a more comprehensive understanding of the mental health of the Indonesian adolescent population beyond the requirements for diagnosis established by the DSM-5.

Implications

The findings of I-NAMHS indicate that poor mental health is a common health issue among adolescents, with one in three Indonesian adolescents experiencing a mental health problem in the past 12 months and one in twenty meeting criteria for a mental disorder. This prevalence indicates that mental health is a public health issue that requires the attention of policymakers and planners in Indonesia. Further, the data from I-NAMHS provides a foundational evidence base for policy and health initiatives. For example, the vast majority of adolescents were currently attending school. As such, the implementation of specific screening and management strategies integrated with mental health promotion activities within the school setting could be one vehicle to reduce the prevalence and potential impact of mental health problems. Further, given anxiety was the most prevalent mental health problem, designing school-based programs that focus on basic anxiety management skills and identifying when and how to seek professional help could be an effective use of limited resources.

I-NAMHS highlights the prevalence of poor mental health among adolescents and the subsequent need for investment in adolescent mental health and wellbeing. Such investments bring a triple dividend of 1) benefits experienced now by offering alleviation of symptoms and improved ability to function optimally in everyday life, 2) benefits offered into future adult life by potentially avoiding or minimizing adverse outcomes and potentially preventing chronic mental disorders, and 3) benefits for the next generation who would benefit from mentally well parents (Patton et al., 2016). This issue should be a priority to ensure the realization of ‘Indonesia 2045 and its Golden Generation’.

Service Use



Overview

The onset of mental disorders tends to occur during adolescence (Erskine et al., 2015; World Health Organization, 2014). This offers a unique opportunity to provide early intervention and targeted adolescent-tailored mental health services, given effective treatment and support can address symptoms and improve functioning (Colizzi, Lasalvia, & Ruggeri, 2020). Collecting information on service use patterns can help identify gaps in service delivery, inform whether existing mental health services are appropriate and accessible, and address barriers to care. This is especially important for adolescents, who can face unique challenges in accessing care due to family pressure, peer influence, and difficulties in paying for services (Persson, Hagquist, & Michelson, 2017; Schnyder et al., 2019; World Health Organization, 2014). An understanding of what challenges are faced by adolescents allows direct action to be taken to reduce barriers to improve service utilization and care outcomes for those with mental health problems or mental disorders.

In Indonesia, there have been recent attempts by the Indonesian Government to increase access to mental health services. Mental health treatment was added to Indonesia's universal health coverage (UHC) system with the introduction of Law Number 24 in 2014, which allowed increased access to mental health services. Although UHC includes the consultation and treatment for mental disorders, mental health financing was only 1% of the national health budget, which itself constituted around 3% of the country's gross domestic product (GDP) (World Health Organization, 2017). There are approximately 600 psychiatrists working in Indonesia, with 75% are located on the island of Java and 86% of these located in Jakarta (Marchira, 2011). Further, East Java Province only has two mental health hospitals despite being one of the largest provinces in Indonesia with a population of over 39 million people. Other areas beyond Java generally rely on community services. While the Ministry of Health has advocated for a community-based mental health service model, most of the health care providers in the community do not have the required training or experience to effectively diagnose and treat patients with mental disorders (Wiguna et al., 2010). Mental health services in Indonesia for adolescents specifically remain limited, especially within rural and island communities. Only a limited number of mental health workers are specifically trained to address the needs of young people in Indonesia (World Health Organization, 2017). Child and adolescent psychiatrists, and other clinicians trained in child and adolescent mental health, are even fewer and many adolescents experience significant difficulties when trying to access mental health services (Wiguna et al., 2010).

One of the main aims of I-NAMHS is to determine mental health service utilization among Indonesian adolescents, as well as levels of perceived need and barriers to care. This chapter outlines the measurement of service use and related factors. The findings are presented as both weighted numbers and proportions. Finally, considerations related to the interpretation of these findings and their implications for policymakers are briefly discussed.

Measurement

Service use questions were asked to all participants regardless of whether any mental disorder symptoms had been endorsed. To understand whether services had been accessed to support the adolescent's mental health, the term 'emotional and behavioral problems' was used to frame each service use question. This term was chosen to reduce any stigma or potential impact from a limited understanding of mental health terms. Additionally, 'emotional and behavioral problems' accounts for the broad range of ways that mental disorder symptoms can manifest, which can differ across age groups and cultural settings. This approach is consistent with similar studies of mental health and service use (Hafekost et al., 2016). Further, I-NAMHS recognized that the services used may include providers beyond formal healthcare services. For this reason, a broad range of service providers across health, education, religious/traditional, and other sectors were included as response options in relevant questions. All questions related to the past 12 months and all were asked to the primary caregiver, except for informal support and self-help strategies which were asked of the adolescent.

Findings

Service use frequency and type

Only 2.6% of adolescents with a mental health problem had used any service that provides support or counselling for emotional and behavioral problems in the past 12 months. Overall, only 2.0% (n = 111) of adolescents had accessed services, with no significant differences observed between males (2.0%) and females (1.9%).

Of those adolescents who used services, most primary caregivers reported that these were helpful or very helpful (93.4%). Table 12 shows two-thirds (66.5%) had used a service on one occasion, and a smaller proportion of adolescents (21.7%) reported using services two to four times in the past 12 months. Only three females (5.5%) reported that they used a service five or more times.

Table 12. Frequency of accessing services providing support or counselling for emotional and behavioral problems in the past 12 months among 10-17-year-olds by sex

Sex	Once		2-4 times		5 or more times	
	%	(n)	%	(n)	%	(n)
Males	71.8	(41)	20.3	(12)	0	(0)
Females	60.7	(33)	23.2	(12)	5.5	(3)
Total	66.5	(74)	21.7	(24)	2.7	(3)

Weighted N: males = 58; females = 54; total = 111

When asked what service provider was used most, almost two-fifths (38.2%) of primary caregivers whose adolescent used services in the past 12 months reported that this was school staff (Table 13). This was followed by doctor or nurse (24.3%) and religious/faith leader (20.5%).

Table 13. Service provider used most for emotional and behavioral problems in the past 12 months among 10-17-year-olds

Type of service provider	%	(n)
School staff	38.2	(43)
Doctor or nurse	24.3	(27)
Religious/faith leader	20.5	(23)
Community health worker	3.7	(4)
Specialist e.g., psychiatrist	2.9	(3)
Other	2.6	(3)

Weighted N = 111

Of those who accessed services, 46.5% had a mental health problem. As shown in Figure 5, adolescents with a mental health problem who did access services were more likely to report impairment than not, regardless of whether they endorsed full threshold (28.2%) or subthreshold (51.4%) symptoms.

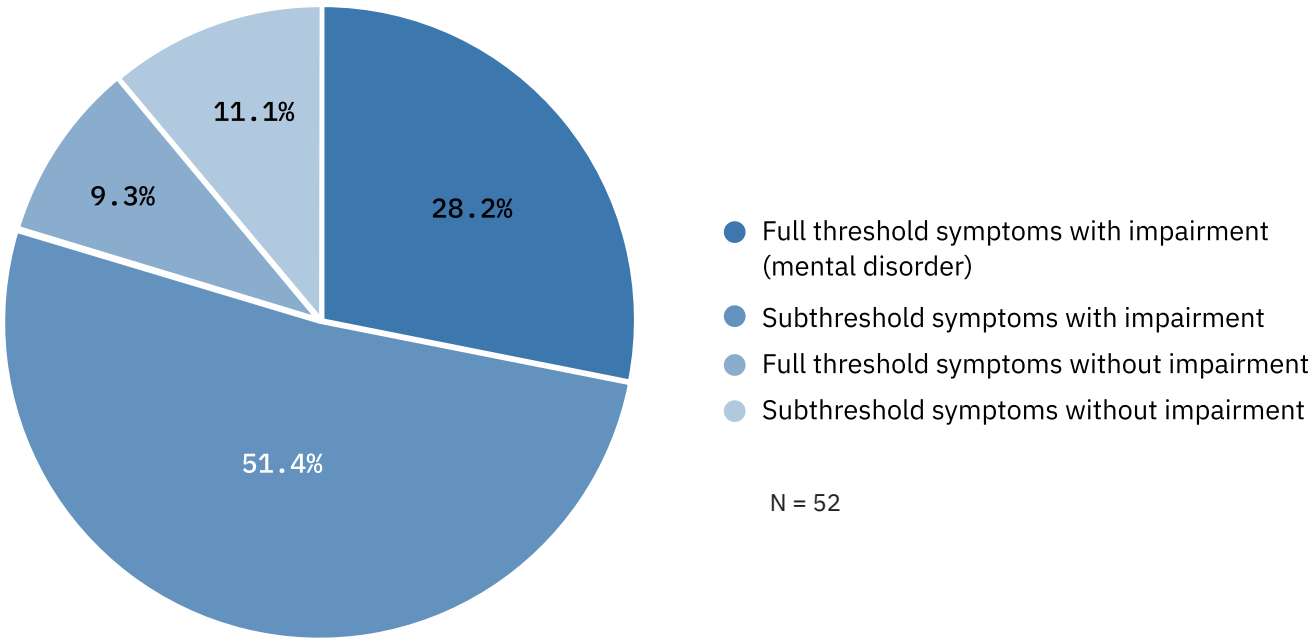


Figure 5. Symptom threshold and impairment endorsement among 10-17-year-olds with a mental health problem who used services in the past 12 months.

Perceived need and barriers to care

Among the whole sample, 4.3% (n = 243) of primary caregivers identified that their adolescent needed help for emotional and behavioral problems. Among those identifying that their adolescent needed help, one in six (16.7%, n = 41) reported that their adolescent had received all the help they needed. As shown in Table 14, 43.8% of primary caregivers reported preferring to manage the adolescent's problem alone or with the support of family or friends. Note that the primary caregiver was able to endorse multiple options with the exception of those who indicated that none of the listed reasons applied.

Table 14. Barriers to seeking help or receiving help for emotional and behavioral problems in the past 12 months among primary caregivers of 10-17-year-olds

Reason	%	(n)
Preferred to handle adolescent's problems alone or with the support of family or friends	43.8	(106)
Wasn't sure where to get help	19.2	(47)
Thought the problem would get better by itself	15.4	(38)
It cost too much or our family couldn't afford it	13.6	(33)
Wasn't sure if adolescent needed help	11.1	(27)
Worried about what other people may think	7.5	(18)
Wasn't anywhere to get help	6.1	(15)
There was a problem getting to a service that could help	4.4	(11)
Couldn't get an appointment when it was needed	4.2	(10)
Didn't want to discuss it with a stranger	3.7	(9)
Adolescent refused help/did not show up at appointment/did not think they had a problem	3.7	(9)
Asked for help but didn't get it	3.4	(8)
None of these reasons (other)^	1.7	(4)

Weighted N = 243

^ Only available as a single choice option

Informal support

All adolescents were asked who they usually speak to when they have worries or concerns. One in six adolescents (16.0%) reported not speaking to anyone (Table 15). Those who indicated that they chose to speak with someone were able to select more than one option. Three-fifths (62.0%) endorsed speaking to a family member while two-fifths (42.5%) endorsed speaking to a friend.

Table 15. Person spoken to when having worries or concerns among 10-17-year-olds

Who the adolescent usually talks to when they have worries or concerns	%	(n)
Family member	62.0	(3,507)
Friend	42.4	(2,400)
Partner (boyfriend/girlfriend)	1.8	(102)
Other	0.8	(42)
Teacher	0.7	(38)
Religious/faith leader	0.5	(27)
Community member	0.3	(19)
Doctor	<0.1	(4)

Self-help strategies

All adolescents were asked about their strategies for managing and preventing emotional and behavioral problems over the past 12 months. Adolescent were able to endorse multiple options with the exception of those who indicated no self-help strategy was used (4.2%). Table 16 shows over half of adolescents (55.4%) endorsed engaging in more of the activities they enjoy, followed by meditation or relaxation therapy (48.8%), and praying (45.4%).

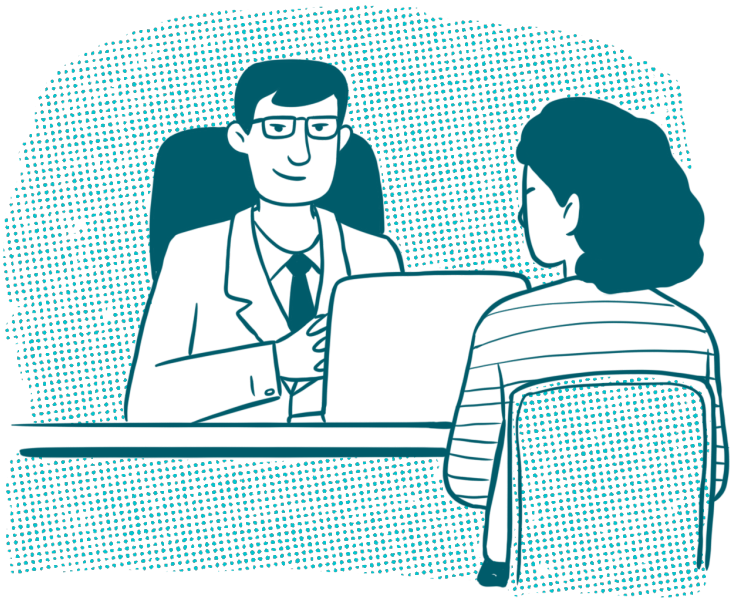
Table 16. Self-help strategies used to manage or prevent emotional and behavioral problems among 10-17-year-olds

Self-help strategy	%	N=5,664 (n)
Did more of the things you enjoy	55.4	(3,139)
Meditated or did relaxation therapy	48.8	(2,763)
Prayed	45.4	(2,569)
Sought support from friends	26.6	(1,508)
Sought support from family	24.3	(1,379)
Did more exercise or took up a sport	20.7	(1,171)
Improved your diet	15.2	(860)
Sought information in books, magazines or on TV	6.8	(384)
Sought support through social networking such as online chat rooms, social media or other internet groups	5.1	(287)
Joined a social group of some kind	4.2	(240)
Stopped smoking, drinking alcohol or using drugs	0.6	(36)

Considerations

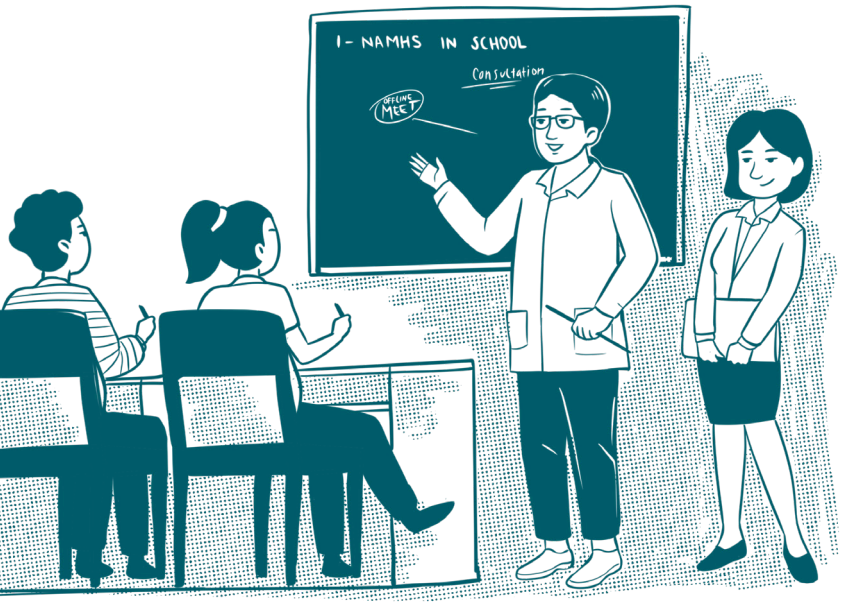
Interpretation

These findings indicate a potentially large unmet need for mental health services for adolescents in Indonesia. Less than 3% of adolescents with a mental health problem accessed services for emotional and behavioral problems in the past 12 months. In parallel, less than 5% of primary caregivers reported that their adolescent needed help for emotional and behavioral problems despite over a third of adolescents having a mental health problem in the past 12 months. While it is possible that some adolescents with a mental health problem were not in need of services, only one in six primary caregivers who reported needing help also reported that their adolescent received all the help they needed. Among primary caregivers who identified that their adolescent needed help, reported barriers to care appeared to have some relation to both mental health literacy (e.g., unsure where to get help) and stigma (e.g., preferred to handle the adolescent's problems alone or with the support of family or friends). Similar barriers to accessing mental health services have been identified in other studies in Indonesia (Hartini et al., 2018; Sarfika, Effendi, Malini, & Edwin Nurdin, 2021; Subu et al., 2021). In parallel, two-fifths of adolescents (62.0%) reported speaking to a family member when having worries or concerns. This indicates that the family (particularly caregivers) are the likely 'gatekeepers' for adolescents who may need additional support or more formal mental health services.



Limitations

The findings regarding service use for emotional and behavioral problems should be interpreted with some caution. First, the small number of adolescents accessing services for emotional and behavioral problems (2.0%, n = 111) makes it difficult to identify clear patterns in service use (e.g., provider type). These findings should therefore be viewed as a starting point while avoiding over-interpretation. Second, most questions were asked of the primary caregiver rather than the adolescent due to considerations relating to the potential length of the interview. This means that the adolescent's perspective, particularly regarding barriers to care, is not measured. However, given that three-fifths of adolescents reported speaking to a family member when they have worries or concerns, the primary caregiver's role as 'gatekeeper' to accessing mental health services indicates that they are well-placed to provide information on barriers to care that are most pertinent to policymakers. Further, the service use questions asked of the primary caregiver could be easily adapted to adolescent respondents in future studies.



Implications

I-NAMHS indicates a potentially large unmet need for mental health services among Indonesian adolescents but also provides some initial indication as to where efforts may best be placed. For example, in addition to potential school-based strategies and programs mentioned earlier in this report (see Mental Health: Considerations), there may be an opportunity to establish mechanisms for referral to clinical services through schools as well as training for appropriate school staff. This is particularly important as, in addition to school staff being endorsed as the service use provider used the most of those who used services, two-thirds of those who accessed services did so only once. While these findings are based on only a small proportion who did access services (n = 111), the fact that most adolescents were currently attending school indicates that there are opportunities to leverage the existing structures within the education system to positively impact adolescent mental health.

One in five (19.2%) primary caregivers whose adolescent needed help for emotional and behavioral problems reported being unsure of where to get help. Well promoted and resourced pathways to mental health care through multiple sectors (e.g., the education system, health services, and religious structures),

as well as mental health outreach services and basic support, could be central in overcoming this barrier. In parallel, embedding programs aimed at improving mental health literacy (Brooks et al., 2021) within the education, health, and faith sectors also provides a potential means to reduce stigma surrounding mental health among adolescents, their families, and their communities (Hartini et al., 2018; Kaligis et al., 2021; Sarfika et al., 2021; Willenberg et al., 2020). The findings also indicate that mental health literacy programs for families, particularly caregivers, may be a prudent step. Such programs should focus on ensuring caregivers feel better equipped to handle worries or concerns presented by an adolescent while, at the same time, educating them on indicators of mental health problems, where to seek help for such problems, and the benefits of doing so for both their adolescent and their family more broadly.

While putting mental health literacy strategies in place to promote help-seeking behaviors is necessary, it is equally important to improve the availability of mental health services for adolescents. This requires a recognition of the prevalence and impact of mental disorders in appropriate policies as well as strategies to guide improved resource allocation for adolescent mental health. Given the shortage of specialist mental health professionals, promoting task shifting by training more widely available health worker network, such as community health workers or school counsellors, is essential to provide more community-based services. This is particularly true for areas beyond the main urban centers. Although evidence is limited, there are some qualitative studies which point towards such approaches being successful (Citraningtyas, Wiwie, Amir, Diatri, & Wiguna, 2017). Further, there is also evidence that systematic training on mental health for general practitioners and nurses can significantly improve identification of mental health issues (Prasetiyawan, Viora, Maramis, & Keliat, 2006). Data from I-NAMHS can be used as a starting point to determine the level and distribution of service need based on the proportion of adolescents with mental health problems who endorsed impairment, as well as those meeting criteria for a mental disorder. Future analysis of different levels of impairment among those with mental health problems, as well as other factors measured by NAMHS but not reported here, can further establish an evidence base for effective service planning.

COVID-19

Overview

The COVID-19 pandemic impacted the lives of adolescents across the globe through the enforcement of containment measures (including school closures) leading to lack of daily routine, social isolation, and household stress. Emerging evidence has shown an association between the COVID-19 pandemic and higher rates of anxiety, depression, and stress (Jones, Mitra, & Bhuiyan, 2021), while other studies have found that the COVID-19 pandemic further impacted adolescents with existing mental disorders due to reduced access to health care (Bhatia, 2020).

Like many other countries, Indonesia started implementing a regional lockdown in April 2020 to curb the spread of COVID-19. Java, the most populated island, was the hardest-hit and experienced more than half of the total cases and deaths in the country (Satuan Tugas Penanganan COVID-19, 2022). Consequently, Java also experienced the strictest and most prolonged movement restrictions. From April 2020, education from kindergarten to higher education moved online until early 2022 when most local governments started allowing students to physically return to school on a limited basis.

Understanding how public health decisions, such as restrictions on social contact during COVID-19, may have affected adolescent mental health is necessary for ongoing management of this and future pandemics. It also provides information regarding the support young people need in order to address what some are referring to as “a lost generation” (Hafstad & Augusti, 2021). Currently, there is a lack of nationally representative data from either adolescents or their primary caregivers on how the COVID-19 pandemic has impacted their mental health and wellbeing. The delay to the commencement of data collection for I-NAMHS provided a unique opportunity to develop a series of questions especially designed for this purpose. This chapter outlines how elements of the COVID-19 pandemic most pertinent for I-NAMHS were measured. Considerations related to the interpretation of these findings and their implications for policymakers in the context of mental health are then briefly discussed.

Measurement

The COVID-19 questions focused on factors most likely to be associated with mental health as per the core aims of I-NAMHS. It was not intended nor designed to be a comprehensive measure of all experiences during the COVID-19 pandemic. The questions were specifically designed for the survey, initially based on a review of relevant literature and then in consultation with all five international NAMHS teams. Questions related specifically to experiences during the pandemic and were asked both of the primary caregiver and the adolescent.

Both the primary caregiver and adolescent were first asked if they had heard of COVID-19. Those who had were then asked a series of questions related to their experiences. The primary caregiver was asked questions about their direct contact with COVID-19, quarantine, stigma, economic impacts on the household (including any change in household income and insufficient funds for necessities), and changes to their own alcohol and illicit drug use. The primary caregiver was also asked about their adolescent needed for help with emotional and behavioral problems during the pandemic, whether they used services for these problems during the pandemic, and if barriers related to COVID-19 stopped them from getting help for their adolescent.

The adolescent was asked about their education status (including their school situation during the pandemic and whether they permanently stopped going to school during the pandemic). They were also asked about different experiences during the COVID-19 pandemic (including witnessing violence between adults in the household, alcohol and illicit drug use by adults in the household, and their own alcohol and illicit drug use), increases in specific emotional and behavioral problems during the COVID-19 pandemic, and if they had someone to talk to while experiencing these problems.

Findings

As shown in Table 17, 4.6% of adolescents reported often experiencing at least one emotional and behavioral problem more than usual during the COVID-19 pandemic, with no differences between males and females.

Table 17. Proportion often experiencing emotional and behavioral problems more than usual during the COVID-19 pandemic among 10-17-year-olds by sex

Sex	More anxious or stressed		Sadder or more depressed		More problems concentrating		More lonely or isolated		Total (increase in any problem)	
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)
Males	2.2	(64)	1.5	(43)	1.6	(47)	2.0	(58)	4.2	(121)
Females	2.7	(74)	1.7	(47)	1.5	(43)	2.1	(58)	5.1	(141)
Total	2.4	(138)	1.6	(90)	1.6	(90)	2.1	(116)	4.6	(263)

Weighted N: males = 2,883; females = 2,781

A small proportion of primary caregivers (3.0%; n = 168) reported that their adolescent needed help for emotional and behavioral problems during the COVID-19 pandemic. Of those, 87.6% (n = 147) did not access services, although none reported that this was due to a reason related to COVID-19.

Figure 6 shows the proportion of adolescents who witnessed violence between two adults in the household, who witnessed alcohol and illicit drug use by adults in the household, and who endorsed drinking alcohol or using illicit drugs during the COVID-19 pandemic. The proportion who reported that this was an increase compared to before the COVID-19 pandemic is also shown. Few adolescents reported witnessing or engaging in each behavior, with fewer adolescents still indicating this increased during the pandemic.

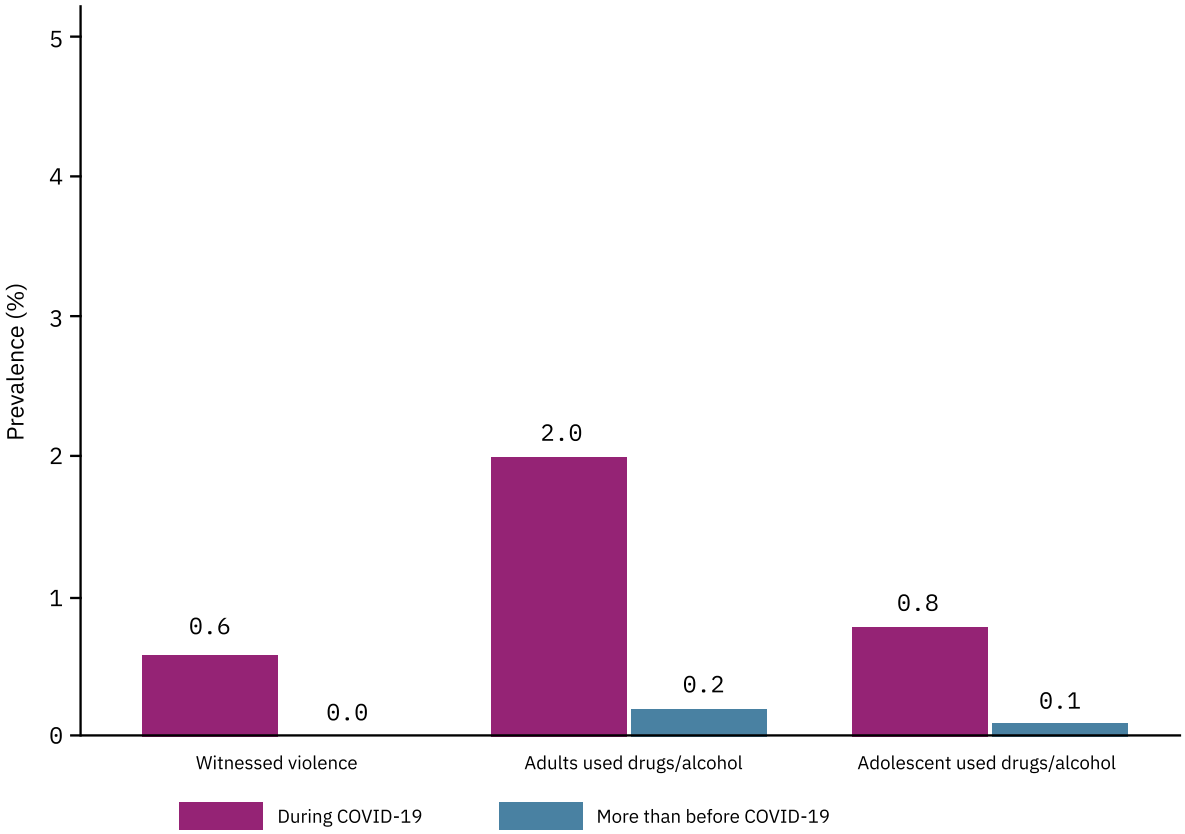


Figure 6. Experiences during the COVID-19 pandemic among 10-17-year-olds

Regarding household economic impact, two-thirds of primary caregivers (66.0%) reported a decrease in household income during the COVID-19 pandemic, while 11.4% stated that they often did not have enough money for necessities during the pandemic

Considerations

Interpretation

Just under 5% (4.6%) of adolescents reported often feeling more depressed, more anxious, more isolated, or having more problems concentrating more than usual during the COVID-19 pandemic This is lower than what has been reported in other similar studies. For example, a study administering the SDQ to adolescents aged 11-17 years found that 15% of adolescents scored in the 'at-risk' level (Wiguna et al., 2020). However, this was a very small (n = 113) online survey that was conducted during April to May 2020, the initial onset of the COVID-19 pandemic. In addition, the questions in I-NAMHS were asked specifically in relation to often feeling this way more than usual during the pandemic. This differentiates the I-NAMHS findings from other studies that measured baseline prevalence during the pandemic.

The relatively low levels of increases in emotional and behavioral problems resulting from the pandemic could be driven by several factors. For example, it is possible that the national level findings mask differences between locations where the severity and timing of the COVID-19 pandemic differed. At the same time, it is possible that many areas sampled by I-NAMHS were less impacted by lockdowns and social distancing measures, especially rural and regional settings. Furthermore, even in areas with lockdowns in place, there is anecdotal evidence that community 'bubbles' emerged whereby several neighboring homes would band together. This is further supported by the Indonesian Government and other international organizations within Indonesia looking to leverage Indonesia's existing community structures to combat COVID-19 (Jaffrey, 2020; The World Bank, 2020; UNICEF, 2020). This sense of community may have afforded adolescents some protection against the increases in emotional and behavioral problems seen in other countries, particularly feelings of isolation (Loades et al., 2020). Further, it may be possible that Indonesian adolescents demonstrated some level of general resilience towards the COVID-19 pandemic. Future planned analysis of the I-NAMHS data will delve into these questions.

Limitations

While I-NAMHS provided a unique opportunity to assess the impacts of the COVID-19 pandemic on adolescent mental health and wellbeing, the study was not designed nor intended to comprehensively measure all aspects of the COVID-19 pandemic. Rather, the questions were designed to provide a brief 'snapshot' of the COVID-19 pandemic in the context of I-NAMHS and provide the opportunity for future analysis accounting for any impact of the pandemic. It remains possible that some relevant aspects of the pandemic period were not captured. Further, the COVID-19 pandemic had begun over a year prior to data collection. It is therefore possible that there may be some recall bias among both adolescents and primary caregivers about the impacts of the COVID-19 pandemic on mental health as well as experiences during that time.

Implications

Understanding how the COVID-19 pandemic impacted the mental health and wellbeing of adolescents is important in order to best support this generation of adolescents as the pandemic continues, as well as to effectively prepare for future adverse population-level events. Coupled with the findings related to minimal service use for emotional and behavioral problems more broadly (see Service Use: Considerations), services that are easy to access (e.g., such as phone lines or online chat services) may be a prudent approach to initially address both the large unmet need for services while also ensuring that crisis care and continuity of existing mental health care can be ensured during unforeseen circumstances. In these situations, tailored health promotion may also be useful to target adolescents who have developed mental health problems in relation to specific stressors, e.g., loneliness and depression related to school closures. Adolescents who need to access services for the first time may be particularly vulnerable and public health messaging that provides knowledge, reduces stigma, and normalizes mental health may be of particular importance.

Appendices

Team lists

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Measures

The measures administered to the primary caregiver and adolescent are shown below. This information was adapted from Erskine et al (2021).

Primary caregiver interview

Measure	Description
Demographics	Collects demographic information pertaining to the household, adolescent, and primary caregiver. Eligibility is also assessed in this module according to the exclusion criteria detailed in the Introduction under 'Who participated in I-NAMHS'?
Chronic illness	Measures serious or chronic illness experienced by the adolescent or caregiver/s.
Pediatric Symptom Checklist – 17 (PSC-17)	Brief screening questionnaire that assesses internalizing and externalizing symptoms in adolescents, used to measure the primary caregiver's perspective of the adolescent's mental health.
Patient Health Questionnaire – 9 (PHQ-9)	Brief screening measure used to screen the primary caregiver's depressive symptomology.
Generalized Anxiety Disorder – 7 (GAD-7)	Brief screening measure used to screen the primary caregiver's anxious symptomology.
DISC-5: Introductory module	Establishes a timeline of significant events in the past 12 months to assist the participant with recall and instructs participants on how to answer questions in the DISC-5 modules.
DISC-5: ADHD	Measures the prevalence of ADHD in the past 12 months.
Service use	Collects information from the primary caregiver about service use, barriers to care, and perceived need for care in relation to the adolescent.
Health insurance	Asks if the family or adolescent have health insurance, the type of insurance, and how this was used for mental health services in the past 12 months.
COVID-19	Measures direct contact with COVID-19, stigma, economic impact on the household, substance use by the primary caregiver, and the adolescent's service use during the COVID-19 pandemic.

Adolescent interview

Measure	Description
DISC-5: Introductory module	Establishes a timeline of significant events in the past 12 months to assist the participant with recall and instructs participants on how to answer questions in the DISC-5 modules.
DISC-5: Social phobia	Measures the prevalence of social phobia in the past 12 months.
DISC-5: Generalized anxiety disorder	Measures the prevalence of generalized anxiety disorder in the past 12 months.
DISC-5: Major depressive disorder	Measures the prevalence of major depressive disorder in the past 12 months. Includes suicidal behavior questions which are asked of all adolescents.
Self-harm	Measures the prevalence, age of onset, and recency of self-harm.
DISC-5: Conduct disorder	Measures the prevalence of conduct disorder in the past 12 months.
DISC-5: PTSD	Measures the prevalence of PTSD in the past 12 months.
Informal help and self-help strategies	Collects information about informal help and self-help strategies.
Self-rated health and body image	Measures the adolescent's self-rated health and body image.
Physical activity	Measures the adolescent's physical activity.
Rosenberg Self-Esteem Scale	Brief standardized measure of self-esteem.
Bullying	Measures bullying victimization and perpetration frequency, including the mode of bullying.
School and education	Measures academic aspirations (both current and past aspirations depending on current school status), expectations, and pressure.
Peer relationships and loneliness	Collects information about the adolescent's friendships (including peer deviance) and loneliness.
GEAS Family Connectedness	Collects information about the adolescent's relationship with their primary caregiver.
Religiosity	Measure of perceived support from faith community and connection to God.
Safety and security	Measures perceived personal safety in different contexts e.g., home, school, and the neighborhood.
Sexual behavior*	Collects information on the adolescent's sexual behavior, sexuality, and gender identity. Only asked to adolescents aged 12-17 years.
Adverse Childhood Experiences (ACEs) questionnaire*	Measures lifetime exposure to multiple types of abuse, neglect, violence between parents or caregivers, other kinds of serious household dysfunction, and violence.
Substance use*	Measures of use of cigarettes, alcohol, cannabis, and other illicit drugs.
COVID-19	Measures direct contact with COVID-19, education impacts, household/individual adversities, and emotional and behavioral problems during the COVID-19 pandemic.

* These modules were self-administered by the adolescent

Methodology

Sampling frame

Design

I-NAMHS employed a multistage-stratified-clustered sampling design, where households were surveyed in clusters or EAs. All adolescents aged 10-17 years were targeted for an interview. SI drew the index EAs using probability proportional to size (PPS) within the designated strata.

Sample size

The formula used to determine the minimum sample size was as follows:

$$n = \frac{z^2_{1-\frac{\alpha}{2}}\, p(1-p)}{\delta^2 * R_i * R_j} X\ DEFF$$

The calculation for each component in the formula is detailed below:

Parameter	Symbol	National	Note
Error Type I/alpha	α	0.05	
Abscissa of normal curve at alpha	Z(1-α/2)	1.96	
Estimated (expected) mental disorder prevalence	P	0.011	Prevalence for major depressive disorder for ages 10-19 years as reported by the Global Burden of Disease Study 2017 (Institute for Health Metrics and Evaluation, 2019)
Desired margin of error	δ	0.03	
Individual response rate	Ri	0.6	The same assumption as the most recent IDHS
Household response rate	Rj	0.8	The same assumption as the most recent IDHS
Design effect	DEFF	3	The same DEFF as the most recent IDHS
Minimum sample size for adolescent	ni	2280	
Estimated member of adolescent per HH	ave_hh	0.7	
Minimum sample size for HH	nh	3257	

The level of disaggregation was required by age group (10-14 years, 15-19 years), sex (male, female), and residency (rural, urban). I-NAMHS used the 15-19 years age bracket as a proxy for 15-17 years age bracket. All calculations for minimum sample size were multiplied by eight strata (disaggregation by sex, age group, residency, and region). I-NAMHS used the standard number of 35 households per EA. The sample size requirement was then corrected by number of provinces at the national level, number of districts at the province level, and number of subdistricts at the district level. The table below describes the number of clusters needed per level.

	Minimum Sample Size	Cluster	Sample Size Requirement
NATIONAL	3,257	108	3,780
PROVINCE			
Central Java	521	35	1225
Central Sulawesi	521	21	735
DISTRICT			
Purworejo	521	22	770
Kota Palu	521	18	665
TOTAL		188	6,580

Mapping and listing

Boundaries of selected EAs were mapped and all occupied households within the selected EA were listed by the interviewer with the help of local government officials. Once all households with adolescents aged 10-17 years within the EA boundary were listed, 35 households with eligible adolescents were then randomly selected and approached to be interviewed. Therefore, no adjustment was made for the probability of selecting an individual from within the household.

Pilot study

Prior to the commencement of the national survey, a pilot study was conducted by CPMH of UGM's Faculty of Psychology under the supervision of CRH. The pilot study took place in January 2020. For the pilot study, 50 adolescents and their primary caregivers were randomly selected from rural Kulon Progo (n = 25) and urban Yogyakarta (n = 25). Neither location was sampled for the national survey to ensure that no participant was asked to participate in both the pilot study and the national survey. The pilot study followed the same procedure as the national survey, including mapping and listing of the EAs to select the households. Once the interview was concluded, both participants and the interviewer were asked to separately give feedback about the interview. This included feedback on the complexity of survey questions, suitability of response options, length of interview, and other survey administration-related factors. This feedback was then utilized, in addition to the data quality checks, to amend any issues with the interview's content or administration for the national survey. This step was important as it elucidated any complications, challenges, or errors and allowed these to be addressed (e.g., tablet malfunctions, translation issues, programming errors, etc.). CRH worked closely with the UQ on developing and finalizing the procedure for obtaining and analyzing feedback.

Fieldwork

One interviewer was assigned to each EA. Depending on the distance, one supervisor was responsible for around four to eight interviewers. For staff managed by USU and Unhas, all supervisors reported to the field coordinator in each region who, in turn, reported to CRH.

All interviewers were equipped with a smartphone, supporting devices, protective equipment, supporting documents to help with record-keeping, and an ID card. Fieldwork in a given EA only commenced after approval was granted by the local government. This approval also considered the COVID-19 status of the EA. In some instances, the interviewer and supervisor also held a town hall meeting prior to fieldwork commencement to provide information about I-NAMHS to the community members

On average, fieldwork lasted for eight weeks in each EA. Supervisors conducted daily check-ins (via phone or message apps) with the interviewer which involved tracking fieldwork progress as well as their physical and mental health. If the interviewer exhibited any physical symptoms or emotional distress, the field-work was suspended until the interviewer was ready and cleared by a doctor. All field staff (interviewers and supervisors) were provided with health insurance and had access to a psychologist. I-NAMHS also implemented the Child Safety Protocol and the NAMHS Distress Protocol to protect both interviewers and survey participants.

In compliance with the laws and regulations in Indonesia, all data was collected via OpenDataKit (ODK) apps and were stored in a cloud managed by CRH. CRH sent the cumulative data to JHSPH every other day as per an agreed upon process. Data cleaning was conducted simultaneously during data collection in collaboration between CRH, UQ, and JHSPH.

Glossary

Term	Definition
12-month prevalence	Meeting established criteria for a mental health problem or mental disorder as measured by the DISC-5 in the 12 months prior to the interview. This includes those whose symptoms first developed during the 12 months prior to the interview, and those whose symptoms developed earlier but who continued to meet criteria during the past 12 months.
Adolescent	A young person aged 10-17 years. While WHO defines adolescents as those aged 10-19 years, adolescents aged 18-19 years were excluded from the study as they are more likely to be living independently and/or working away from home. Further, diagnostic measures (such as the DISC-5) are not designed to be administered to people aged 18 years and older who are normally assessed using instruments designed for adults in surveys focused on adults.
Anxiety disorders	A class of mental disorders defined by excessive fear and anxiety. Social phobia and generalized anxiety disorder were the two anxiety disorders included in this survey.
Attention-deficit/ hyperactivity disorder (ADHD)	Characterized by persistent patterns of inattention and/or hyperactivity-impulsivity. Adolescents may have troubles with attention and concentration, have excessive movement and/or trouble controlling impulsive behaviors. These behaviors are inconsistent with the adolescent's age or developmental level and occur across numerous settings. The DISC-5 ADHD module was administered to the primary caregiver.
Conduct disorder	Characterized by a repetitive pattern of behaviors violate the rights of others and/or major societal rules or norms. The behaviors can include aggression to people or animals, destruction of property, deceitfulness or theft, or a serious violation of rules. The DISC-5 conduct disorder module was administered to the adolescent.

Diagnostic criteria	A set of specific requirements an adolescent must meet in order to be considered to have a mental disorder. Criteria can include: • A set number or combination of symptoms • The age of onset for symptoms or behaviors • Frequency and duration of symptoms • Distress or impairment In I-NAMHS, diagnostic criteria were determined according to DSM-5.
Diagnostic Interview Schedule for Children, Version 5 (DISC-5)	A fully structured diagnostic instrument designed to identified children or adolescents meeting DSM-5 diagnostic criteria for a mental disorder. Six diagnostic modules from the DISC-5 were included in the survey and adapted to ensure cultural relevance while maintain conceptual consistency.
Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)	Definition of individual mental disorders published by the American Psychiatric Association and used to define and diagnose mental disorders.
Full threshold symptoms	Endorsement of all symptoms required to meet DSM-5 diagnostic criteria for a mental disorder (noting that impairment must also be endorsed to be given a DSM-5 mental disorder diagnosis).
Generalized anxiety disorder	Characterized by excessive anxiety and worry about a number of events or activities. The intensity, frequency, and duration of the anxiety and worry is out of proportion to the actual likelihood or impact of the anticipated event. The DISC-5 generalized anxiety disorder module was administered to the adolescent.
Impairment	Where symptoms of a mental disorder adversely impact or interfere with functioning and/or different aspects of an adolescent's life. Endorsement of impairment is required to meet DSM-5 diagnostic criteria for a mental disorder (along with endorsement of all required symptoms i.e., full threshold symptoms).
Impairment domains	In the DISC-5 impairment was measured by six questions which measured impairment caused by symptoms across four domains: family (problems with relationships with caregivers, difficulties spending time with family), peer (difficulties spending time with peers), school or work (difficulties with school or work), and personal distress.
Major depressive disorder	Characterized by a period of at least two weeks during which there is depressed mood, loss of interest or pleasure in nearly all activities, and/or irritability. These feelings are also associated with other physical symptoms such as fatigue, sleep disturbances or concentration issues. The DISC-5 major depressive disorder module was administered to the adolescent.

Mental disorder	A mental disorder is a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and is associated with present distress (e.g., a painful symptom), disability (i.e., impairment in one or more important areas of functioning), and/or a significantly increased risk of suffering death, pain, disability, or an important loss of freedom. For the purposes of this report, adolescents with a mental disorder were those meeting DSM-5 diagnostic criteria for a specific mental disorder (i.e., a mental disorder measured in I-NAMHS).
Mental health problem	A mental health problem is similar to a mental disorder in that it also interferes with how a person thinks, feels, and behaves, but to a lesser extent than a mental disorder. They can be experienced temporarily, or as an acute reaction to the stresses of life. For the purposes of this report, adolescents with a mental health problem includes those who met DSM-5 mental disorder diagnosis (i.e., full threshold symptoms and endorsement of impairment) as well as those who did not endorse impairment (i.e., full threshold symptoms but no impairment) and those who met at least half of the symptoms required by DSM-5 (i.e., subthreshold symptoms) with or without impairment.
Posttraumatic stress disorder (PTSD)	Characterized by intrusive or recurrent thoughts, disassociation, distorted or negative cognitions, increased arousal or reactivity or other intrusive symptoms or physical reactions, all in relation to a specific trauma. The DISC-5 PTSD module was administered to the adolescent.
Primary caregiver	The person who has responsibility for, cares for, and is best able to provide information about the adolescent. This primary caregiver self-identified at the beginning of the interview after being read the above definition. This was done prior to commencing the administration of survey measures.
Self-harm	Self-harm is the act of doing something to deliberately cause harm or injury to oneself, without the intent of ending one's life. This differentiates self-harm from a suicide attempt.
Service	In this survey, services were considered any provider who provided support or counselling for emotional and behavioral problems. Service providers included in this survey were: • Doctor or nurse • Specialist (such as a psychologist or psychiatrist) • Community health worker • School staff (such as a teacher, coach, or school counsellor) • Religious/faith leader • Other (as defined by the participant) The definition of service providers was expanded to include to those not generally considered as providers (e.g., religious/faith leader) given the anticipated likelihood that these sectors would be accessed for such services.

Service use	Defined as use of any service (by providers listed above) for support or counselling for emotional and behavioral problems. Service use questions were asked of the primary caregiver.
Social phobia	Characterized by the fear of one or more social situations, in which the adolescent is the focus of other people's attention, which might cause a feeling of embarrassment and humiliation. This can lead to the adolescent avoiding these situations or enduring them but dreading doing so. In adolescents, the situations that induce the anxiety must be in a peer-setting, not only around adults. The DISC-5 social phobia module was administered to the adolescent.
Subthreshold symptoms	In the DISC-5, an adolescent was considered to have subthreshold symptoms if they endorsed at least half of the symptoms required by the DSM-5 but not all.
Suicidal behaviors	Inclusive of suicidal ideation, suicide planning, and suicide attempt.
Suicidal ideation	Thinking about wanting to die or general thoughts about ending one's own life.
Suicide attempt	Harming oneself with the intention of ending one's own life.
Suicide planning	Making a plan to end one's own life.

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