**(i) Title:**

Prevalence of Mental Health Problems among Adolescents in DKI Jakarta

**Abstract**

Prior studies reported that adolescents who live in urban area are prone to have mental health problems. Jakarta is the capital city of Indonesia which often regarded as distressing city due to several problems including pollution and traffic jam. Further, adolescents who live in Jakarta are often exposed to numerous stressors. However, if mental health problem is persisted, it can develop into disorder. Therefore, early detection is needed to recognize current mental health problems among adolescents. This study aims to investigate the prevalence of mental health problems which occurred in adolescence. A school based study were conducted in five high schools in Jakarta. The participants were randomly selected using multistage random sampling. A total of adolescents (aged 15-18 years old) participated in this study. The data collection process was conducted during school hours using paper and pencil questionnaires. Present study found that adolescents in Jakarta have numerous mental health problems. This study indicated that the prevalence of mental health problem among adolescents in urban Jakarta is high. Our study suggested that comprehensive mental health intervention in urgently needed to help these youths in optimizing their development.

Key words: mental health, adolescents, Jakarta, urban

**1. Introduction**

Adolescence is a phase of transition in human’s life where individuals experiencing various physical, psychological and behavioral changes. It is considered to be an important phase when individuals start to develop their thoughts, skills, and identity as a teenager and also later adult (Papalia & Feldman, 2012). Unfortunately, many changes during this transition phase of life are associated with unique challenges that may contribute to various problems including mental health problems.

Some recent studies reported an increasing number of the prevalence of mental health problems among the adolescent population in the past 10 to 20 years (Ravens-Sieberer, Wille, Erhart, Bettge, Wittchen, Rothenberger, et al., 2008; Michaud & Fombone, 2005). In 2017, The World Health Organization Mental Health Status Report stated that around 10% to 20% of children and adolescents are experiencing at least one episode of mental health problems in their life. The Australian National Survey of Mental Health and Well Being (McGorry, Purcell, Hickie & Jorm, 2007) reported at least 14% children and adolescents (age 4 to 12 years) are experiencing mental health problems and the number rises up to 27% in older adolescents (age 18 to 24 years). A systematic study by Patel, Fisher, Herick, and McGorry (2007) reported the prevalence of mental health problems in Netherland around 8% to 57%, 29% prevalence in the USA, and at least 13% prevalence in Brazil and India. In Indonesia, National Basic Health Care Research conducted by The Ministry of Health in 2013 reported the prevalence of at least 6% population is affected by mental health problems where adolescent participants are found to have higher prevalence compared to the older participants.

Many factors can contribute to the high prevalence of mental health problems among adolescents. Urbanization and urban-related factors such as social changes, disruption of family structure and culture, education and employment pressure are some factors that are found to contribute to the occurrence of mental health problems (Frojd, Nissinen, Pelkonen, Marttunen, Koivisto & Kaltiala-Heino, 2008; Patel, et al., 2007; Michaud & Fombone, 2005). High exposure to violence and criminality within urban environment also found to increase the number of mental health problems (Cerda, Tracy, Sanchez & Galea, 2011; Patel, et al., 2007). Peer and relationship related problems such as bullying, loneliness, and social participation also associated to mental health problems (Undheim & Sund, 2010; Patel, et al., 2007; de Matos, Barrett, Dadds & Shortt, 2003).

Most common mental health problems experienced by adolescents are conduct-related problems or disorders (Ravens-Sieberer, et al., 2008; Michaud & Fombone, 2005); anxiety (WHO, 2017; Ravens-Sieberer, et al., 2008; Michaud & Fombone, 2005); mood, depression and suicide-related problems (WHO, 2017; Ravens-Sieberer, et al., 2008; Michaud & Fombone, 2005).

These mental health problems faced by adolescents affect not only their current life but also their future life and even future generations (Mokdad, Farouzanfar, Daoud, Mokdad, Bcheraoui & Murray, 2013). These mental health problems interfere individual’s development and affect their social, educational, and vocational life that may lead to dysfunctional life (McGorry, et al., 2007; Michaud & Fombone, 2005). Few studies also found the association between experiencing any mental health problems with the increasing risk of participation in any risk-taking behavior such as substance (such as tobacco, alcohol, and drugs) misuse which also found to increase the risk of any dependency problems (WHO, 2017; Cerda, et al., 2011; Ravens-Sieberer, et al., 2008; McGorry, et al., 2007; Michaud & Fombone, 2005).

Considering the negative effects of mental health problem experienced by adolescents, early prevention is needed to minimize future lost. One of the first action can be done is by recognizing any mental health problems experienced by adolescent so that further action or intervention can be taken. The objective of this study is to describe the prevalence of common mental health problems and their demographic correlates among adolescents in DKI Jakarta based on data collected in early 2017.

**2. Methods**

**Sample**

The study was conducted in five senior high schools in urban areas in Jakarta. The participants were randomly selected using multistage random sampling. First, we selected each senior high school to represent each area in Jakarta (Central Jakarta, East Jakarta, West Jakarta, South Jakarta, and North Jakarta). The inclusion criteria for the schools were: (a) located in urban areas (b) coordinated by the DKI Jakarta Educational Services and (c) officially registered in DKI Jakarta Educational Services database. We excluded single-gender schools and schools with special curriculum to make sure all of the students have similar conditions. Upon obtained permission from school authorities, the researcher then gave the informed consent to the participants and the guardians. In this regard, the guardians were the teachers and headmaster. A total of 786 high school students aged between 15-18 years old participated in this study. The number of female participants were 51%, and the male participants were 49%.

**Measures**

**Demographic measure**

All participants completed the demographic questions including age, gender, and parents’ occupation. All of the demographic information is presented in table 1.

**Psychotic-like Experiences (PLEs)**

The present study used PLEs instrument which was adapted from the Diagnostic Interview Schedule for Children (Costello et al., 1982), and additional items by Laurens (Laurens et al., 2007, 2008, 2011). The instrument consists of 9 items to measure psychotic symptoms. Each item was rated on a three-choice response scale: ‘1=never’, ‘2=sometimes’ or ‘3=always’. The items with a value of 3 were recoded into 1, and each item with values 1-2 were recoded into 0. The total score indicates the number of psychotic symptoms experienced by the participants. In this study, we used PLEs instrument that has been translated and adapted into Indonesian language by the Community Mental Health Research Group, Faculty of Psychology Universitas Indonesia in 2015.

**Strength and Difficulties Questionnaire (SDQ)**

The Strength and Difficulties Questionnaire (SDQ) by Goodman (1997) was developed to measure behavioral difficulties. The researcher collected the data using the Indonesian version of SDQ which has been translated and adapted by Tjhin Wiguna and Yohana Hestyanti in 2005 (www.sdqinfo.com). The SDQ consists of 25 items which represent three components: internalizing problems, externalizing problems, and prosocial behavior. The reliability of the SDQ ranges from 0.73-0.82 (Goodman 1998, 2001). 10 items measure internalizing problems, of which 5 measure emotional symptoms and the other 5 measure peer and relationship problems. In addition, 10 items measure externalizing problems, of which 5 measure hyperactivity and the other 5 measure conduct problems. Each item was scored from 0 to 2 with the maximum score of internalizing problems and externalizing problems being 20. The score in the SDQ is then interpreted into categorization: normal, borderline, and abnormal (Goodman, 1998). In emotional symptoms, the categorization of abnormal ranges from 7-10. In peer and relationship problems the categorization of abnormal ranges from 6-10 (Goodman, 1998). In hyperactivity, the categorization of abnormal is 7-10. In conduct problems, the categorization of abnormal ranges from 5-10.

**HSCL-25**

Hopkins Symptoms Checklist-25 (HSCL-25) measured psychological distress including anxiety and depression. It consists of 25 items in which item 1-10 measure anxiety symptoms whereas item 11-25 measure depressive symptoms in the past week. To obtain anxiety score, 10 items were calculated and divided by the number of item. Similarly, to obtain depression score 15 items were calculated and then divided by 15. Each item was rated from 1–4 ranging from “Not bothering at all” to “Extremely bothering”. The cutoff score 1.75 was used to divide category of participants into high and low depression/anxiety.

**Youth Risk Behavior Survey**

Youth Risk Behavior Survey measures six types of health-risk behaviors that often emerged during adolescents. The Youth Risk Behavior Survey was used to determine the prevalence of health and health-risk behavior that contribute to the leading causes of death and disability among youth and adult. The questionnaire has not been adapted to Indonesian language, therefore the researcher conducted cultural adaption by doing translate and back translate with the supervision of a mental health specialist. In this study we used the section of tobacco use and alcohol and other drug use to determine the prevalence of substance use among participants. The response was measured by multiple choices.

**De Jong Loneliness Scale**

De Jong loneliness scale consist of six items to measure loneliness. Three items measured social loneliness and three items measured emotional loneliness. Each item was rated from 1-4, ranging from “Strongly disagree” to “Strongly agree”. In emotional loneliness component, the response with value 1-2 was recoded into 0, and the response with value 3-4 was recoded into 1. In social loneliness component, the response with value 1-2 was recoded into 1, and the response with the value 3-4 was recoded into 0. The Indonesian version of this instrument was used during the data collection.

**Procedure**

The researcher first accessed the database of DKI Jakarta Educational Services then selected the schools by random sampling. After five schools in urban areas in Jakarta were selected, the researcher communicated with the school authorities to ask for permission. The schedule was made according to a suggestion from the school authorities. Simultaneously, the researcher conducted cultural adaptation of the research instruments.

In March, the cultural adaption process was carried out by the researcher and was then given to 63 high school students for testing. During the process, the researcher gave instructions regarding how to fill in the questionnaire. Upon completing the questionnaire, the researcher asked several questions in regards of the clarity of every item in the questionnaire. The comments from the participants were used for evaluation process. The researcher then revised some words and made adjustments afterward. We also examined the psychometric properties of the questionnaire.

The data collection process was conducted during school hours. The researcher first explained the guidelines for filling in the questionnaires to the class: (1) participation was anonymous and voluntary, and (2) there is no right or wrong answers and they must respond to the questions according to their situations. The researcher then gave session for the students to ask if there was something they did not understand in the questionnaire. The students were instructed to check their responses before returning the questionnaire to the researcher. After completing the questionnaires, the students were given a small token of appreciation for their participation. The small token of appreciation were snacks, drinks, and a small notebook.

**Data analysis**

We used descriptive statistics to analyze the demographic data and the prevalence of mental health problems. All statistical analysis was executed using SPSS (Statistical Package for Social Sciences) version 21.0 for Windows.

**3. Results**

**Descriptive statistics**

A total of 786 high school students from five senior high schools participated in the study. The demographic information of participants is presented in table 1. The participants’ age range from 15-18 years old (*M*= 16.4 years old, *SD* = 0.632). The proportion of the participants was: 28.2% from West Jakarta (SMA 16 Jakarta), 14.5% from South Jakarta (SMA Muhammadiyah 5), 14% from North Jakarta (SMA Permai), 15.3% from Central Jakarta (SMA YP IPPI Petojo), and 28% from East Jakarta (SMA Budhi Warman II).

**Prevalence of Anxiety and Depression**

According to the category from the cutoff score, 83.2% of participants have high anxiety. Further, 81.2% of participants reported having high depression. The average score of depression among participants was considered high (*M*= 2.531, *SD* = 0.725). Likewise, the average score of anxiety was prominent (*M*= 2.441, *SD* = 0.668).

**Prevalence of Loneliness**

The present study suggested that 57.4% of participants experienced loneliness. The average score of PLEs among participants was considered high (*M*= 2.08, *SD* = 1.366).

**Prevalence of Externalizing and Internalizing Problems**

Internalizing problems consist of emotional symptoms and peer-relationship problems. The prevalence of internalizing problems was analyzed using categories by Goodman (1998). The prevalence of abnormal emotional symptoms was 20.6% whereas the prevalence of abnormal peer-relationship problems was 6.6%. Meanwhile, externalizing problems consist of hyperactivity and conduct problems. Similarly, the prevalence of externalizing problems was analyzed using categories by Goodman (1998). The present study found that prevalence of hyperactivity symptoms was 9.7% whereas the prevalence of abnormal conduct problems was 20.0%.

**Prevalence of Psychotic-like Experiences**

In this study, a person is identified as having one PLE score if they answer ‘always’ in 1 item PLEs. The prevalence of participants reported having at least one symptom of PLEs was 22% (Table 2). The average score of PLEs among participants was considered high (*M*= 0.42, *SD* = 0.994).

**Substance Use**

The number of participants reported have tried at least one substance was 57% in which 50.4 % of them have tried smoking, 1.6% of them have tried drinking alcohol, and 8.1% ever used marijuana.

**4. Discussion**

This study indicated that the prevalence of mental health problem among adolescents in urban Jakarta is high, much higher than the number reported by the Indonessia Health Survey (Riskesdas, 2013). The most alarming situation was the prevalence of anxiety and depression which were both well above 80%. These are the highest number that has been observed so far, although the trend is increasing everywhere else in the world. Recent studies reported that prevalence of various kinds of mental health problems were 8% to 54% (Patel, Fisher, Herick, and McGorry, 2007).

The extremely high prevalence of anxiety and depression among adolescents in Jakarta may have been influenced by many factors such as biology, psychological and social factors. Adolescents were prone to be more easily distracted and stressed out due to hormonal changes that take place during this period (Romeo, 2013). The bodily changes also accompanied by the difficulties in the living condition at home and schools. All of these factors make adolescents vulnerable to experience distress.

Many of the participants also experienced loneliness, internalizing problems and externalizing problems. These results were also in line with previous studies that found emotional problems and conduct problems were among the most often experienced mental health problems by adolescents (Ravens-Sieberer, et al., 2008; Michaud & Fombone, WHO, 2017). Some of these emotional and conduct problems would also be evident from the substance use conditions in this study population, which were also high.

The argument of the vulnerabilities of the adolescence population in this study was related to their living condition in urban city. Urban-related factors such as rapid social changes, disruption of family structure and culture, education and employment pressure are part of their everyday life (Frojd, Nissinen, Pelkonen, Marttunen, Koivisto & Kaltiala-Heino, 2008; Patel, et al., 2007; Michaud & Fombone, 2005). Adolescents often exposed to violence as victims, witness or perpetrators, both at home and school environment. They are also exposed to criminality within urban environment that often also jeopardize them selves (Cerda, Tracy, Sanchez & Galea, 2011; Patel, et al., 2007).

This study has many limitations. This is only a cross sectional study which was conducted to obtain a snapshot of prevalence of common mental health problems among adolescents in urban city of Jakarta. The measurements of problems were based on self-report inventories without any other verification methods. Although the instruments were culturally validated prior to the data collection, errors might still be possible especially when the respondent wished to withdraw some sensitive information. The participants can perceive questions related to mental health issues and substance use among adolescents as shameful.

Nevertheless the results of this study offered a clear view of mental health problems of adolescents in Jakarta which was previously not available. The application of non-proportioned cluster sampling in selecting the samples was a strong point, as utilization of random sampling technique increase the generalizability of the results to the whole population of adolescents in Jakarta. Therefore the results were of good quality and can be used as a gauge to prepare further steps into this issue. This study also illustrated the need of comprehensive mental health intervention for adolescents in Jakarta, to help them overcome their problems and flourish as the next generation of our country.

**5. Conclusions**

The high prevalence of mental health problems among adolescents in Jakarta was evident. Adolescents who live and study in Jakarta were confronted with numerous urban related challenges that hampered their mental health. Comprehensive mental health intervention in urgently needed to help these youth in optimizing their development.

Table 1. Demographic characteristics of participants

|  |  |  |  |
| --- | --- | --- | --- |
| Demographic characteristics | | n=786 | |
| Total | Percentage |
| Gender | Males | 386 | 49.1 |
| Females | 399 | 50.8 |
| Age | 15-17 years old | 744 | 94.6 |
| 18-22 years old | 27 | 4.4 |
| Working parents | Father | 389 | 49.5 |
| Mother | 49 | 6.2 |
| Both parents | 323 | 41.1 |
| Both parents do not work | 21 | 2.7 |

Table 2. Prevalence of Mental Health Problems

|  |  |  |  |
| --- | --- | --- | --- |
| Prevalence of Mental Health Problems | | n=786 | |
| Total | Percentage |
| Anxiety | Low anxiety | 132 | 16.8 |
| High anxiety | 654 | 83.2 |
| Depression | Low depression | 148 | 18.8 |
| High depression | 638 | 81.2 |
| Loneliness | Not Lonely | 322 | 41.0 |
| Lonely | 451 | 57.4 |
| Emotional symptoms | Normal | 619 | 78.8 |
| Abnormal | 162 | 20.6 |
| Peer-relationship problems | Normal | 726 | 92.4 |
| Abnormal | 52 | 6.6 |
| Hyperactivity | Normal | 702 | 89.3 |
| Abnormal | 76 | 9.7 |
| Conduct problems | Normal | 625 | 79.6 |
| Abnormal | 157 | 20.0 |
| Psychotic-like experiences | No symptoms | 613 | 78.0 |
| ≥ 1 symptom | 173 | 22.0 |

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