

## Social anxiety disorder: prevalence and dominant factor among adolescents in urban and rural school

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### ABSTRACT

In the age range of 16-18 years, commonly known as adolescence, individuals undergo a period of self-discovery in their socio-emotional development. Failures during this process can lead to individuals experiencing anxiety in social interactions, which can have a negative impact on their mental health. The Indonesia National Adolescent Mental Health Survey (I-NAMHS), findings also indicate that the most prevalent mental disorder among adolescents is anxiety disorder (a combination of social phobia and generalized anxiety disorder), is equivalent to 15.5 million. The widespread use of the internet and social media, on one hand, has led to a high dependency on smartphones among teenagers, causing them to spend more time interacting in the virtual world. Over an extended period, this condition can lead to social anxiety due to the fear of failure and lack of success. The objective of this research is to explore whether there is a difference in social anxiety among teenagers living in rural or urban areas, related to factors such as the duration of smartphone usage, school activities, and so on. The results of this research are crucial for providing feedback to high schools, especially for early detection of potential anxiety symptoms from the beginning, in order to prevent and provide appropriate treatment for social anxiety, thus not affecting students' academic achievements. It is recommended that schools conduct early detection measures.

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## 1. INTRODUCTION

Adolescents aged 16-18 are entering a crucial period of self-discovery in their socio-emotional development [1]. Social-emotional development results from social and cultural influences, the regulation of emotions, and the emergence of feelings of shame and guilt [2]. Social development begins in early childhood, particularly in kindergarten. Social development is the process of learning to recognize and manage emotions while interacting with others, caring for others, making ethical and responsible decisions, and avoiding negative behaviors [3]. Failure in this process can lead to individuals experiencing anxiety in their relationships with others and can significantly impact their mental health [4]. The manifestations resulting from failure in this developmental process typically begin to appear during adolescence, and they can lead to the emergence of negative behavioral symptoms. For instance, individuals may experience a decline in social skills, face rejection from peers, and struggle to achieve academic progress [5].

According to Bornstein [6] it is stated that 12.1% of the population in the United States has reported experiencing symptoms of social anxiety at least once in their lifetime. The risk of developing social anxiety is higher in women, and the manifestation of the disorder often begins during childhood or early adolescence. According to research by Jefferies & Ungar [7], social anxiety is a rapidly emerging phenomenon believed to affect adolescent development disproportionately. This study also explores the prevalence of social anxiety worldwide using self-report surveys from 6,825 individuals, consisting of 3,342 males and 3,483 females, aged 16-29 years, from seven countries, including Brazil, China, Indonesia, Russia, Thailand, the United States, and Vietnam, with diverse cultural and economic backgrounds. The research findings indicate that 36% of the respondents experience social anxiety, and the prevalence and severity of social anxiety symptoms do not differ significantly between genders [3], [8]. However, variations in anxiety levels were observed based on age, country, employment status, education level, and residential location, whether in urban or rural areas.

As previously discussed, failure in social development results in changes in social and emotional anxiety levels that can occur throughout the human lifespan [9]. In infancy, for example, such development is reflected in their emotional attachment and fear of strangers, and babies feel more comfortable with their caregivers. In adolescence and adulthood, social-emotional development is manifested in how older adults become more selective in their social interactions to create and maintain emotionally satisfying lives [10]. Meanwhile, social anxiety in teenagers arises due to the fear of failure in social interactions and the establishment of satisfying relationships. Furthermore, adolescent emotions and motivations have likely evolved to solve problems when individuals interact within groups. On the other hand, adaptive rules are required to attain social status, partners, friendships, and other relationships [6]. The difference between these two demands ultimately leads to symptoms of social anxiety, which can be more pronounced during adolescence and even pose a risk for mental disorders [11].

In the academic aspect, social anxiety can adversely affect adolescents' cognitive, affective, and psychomotor abilities. This condition can result in a decline in the performance and achievement capabilities of adolescents undergoing formal school education. However, during this stage, it is expected that adolescents should be able to reach their optimal abilities [7]. Schools are crucial in building students' character and independence [12]. However, there is often a disparity in the quality of human resources and school facilities between urban and rural schools in Indonesia. This difference can impact the quality of student learning in schools. The involvement of healthcare professionals such as doctors and nurses are vital in identifying early symptoms and providing appropriate interventions. This research aims to identify the occurrence of social anxiety disorder in adolescents in urban and rural. The novelty of this research is to provide data that compares the causes of social anxiety among adolescents living in urban and rural, so it is crucial to conduct research to recognize early signs of social anxiety in adolescents for early prevention.

## 2. METHOD

This research design is a cross-sectional study where the researcher compares the levels of social anxiety in adolescents attending urban and rural schools. The objectives of this study are to determine the prevalence of social anxiety in adolescents attending urban and rural high schools (H1), to identify the relationship between sociodemographic variables and the occurrence of social anxiety in urban and rural schools (H2), and to determine the dominant predictors influencing social anxiety in adolescents attending urban and rural schools (H3). The respondents of this study are adolescents currently enrolled in urban and rural high schools in Malang, East Java, Indonesia, with 103 students from each setting, resulting in a total of 206 respondents. The sampling technique used is random sampling.

The research instrument used for measuring social anxiety is a standardized questionnaire modified and adapted into the national language from its original version, the Liebowitz Social Anxiety Scale-self report (LSAS-SR). This instrument consists of two indicators to assess social anxiety: performance and anxiety in social interaction situations. The response statements in this research instrument utilize a Likert scale with options such as always, often, sometimes, and never. The tool has undergone validity testing, with each item showing acceptable validity. Reliability testing using Cronbach's Alpha yielded a value of 0.665, indicating satisfactory reliability. The research questionnaire was distributed through a Google Form link or barcode scan. Before completing the questionnaire, participants were provided with informed consent, and if they agreed to participate, they could proceed with answering the questionnaire. Data analysis test was conducted with common factor analysis where factors were estimated based on common variance, communalities were included in the correlation matrix.

This study has obtained ethical approval from the Health Research Ethics Committee of the Institute of Health Science Strada, Indonesia (Ref Number: 3674/KEPK/I/2023), indicating that it meets the required ethical standards.

### 3. RESULTS AND DISCUSSION

The total number of respondents in the study was 206 adolescents, consisting of 103 adolescents attending schools in urban areas and 103 in rural areas of Malang, Indonesia. These respondents had diverse sociodemographic characteristics. The research findings indicated variations in the levels of social anxiety based on age, caregiver at home, after-school activities, duration of mobile phone usage, and personality type in Table 1. The research findings on the prevalence of social anxiety among adolescents attending schools in urban and rural areas showed a similar pattern in Table 2.

Table 1. Sociodemographic characteristics of adolescents in an urban and rural school

Variable independent	Urban school						Rural school					
	Low		Medium		High		Low		Medium		High	
	f	%	f	%	f	%	f	%	f	%	f	%
Age												
≤16	1	1	27	26.2	17	16.5	1	1	24	23.3	13	2.6
17	3	2.9	30	29.1	14	13.6	2	1.9	23	22.3	15	14.6
≥18	0	0	6	5.8	5	4.9	1	1	14	13.6	10	9.7
Total	4	3.9	63	61.2	36	35	4	3.9	61	59.2	38	36.9
Companion for adolescents at home												
Parents	2	1.9	58	56.3	33	32	4	3.9	52	50.5	33	32
No one	1	1	2	1.9	1	1	0	0	6	5.8	4	3.9
Family	1	1	3	2.9	2	1.9	0	0	3	2.9	1	1
Total	4	3.9	63	61.2	36	35	4	3.9	61	59.2	38	36.9
After school activities												
Course	0	0	0	0	1	1	0	0	2	1.9	0	0
Extracurricular	2	1.9	2	1.9	0	0	0	0	5	4.9	2	1.9
No activity	2	1.9	61	59.2	35	34	4	3.9	54	52.4	36	35
Total	4	3.9	63	61.2	36	35	4	3.9	61	59.2	38	36.9
Long time use handphone												
1-4 hours	0	0	9	8.7	8	7.8	1	1	15	14.6	9	8.7
5-10 hours	2	1.9	41	39.8	25	24.3	2	1.9	42	40.8	19	18.4
≥11 hours	2	1.9	13	12.6	3	2.9	1	1	4	3.9	10	9.7
Total	4	3.9	63	61.2	36	35	4	3.9	61	59.2	38	36.9
Personality type												
Closed personality	3	2.9	30	29.1	3	2.9	1	1	21	20.4	3	2.9
Open personality	1	1	33	32	33	32	3	2.9	40	38.8	35	34
Total	4	3.9	63	61.2	36	35	4	3.9	61	59.2	38	36.9

Table 2. Prevalence of social anxiety in urban and rural senior high schools

Anxiety level	Urban school		Rural school	
	f	%	f	%
Low	4	3.8	4	3.8
Medium	63	61.2	61	59.3
High	36	35.0	38	36.9
Total	103	100	103	100

The analysis of the relationship between variables using SPSS v 28.0 indicated significant values between the variables. If the p-value is  $\geq 0.05$ , the variable does not affect social anxiety, while a p-value  $\leq 0.05$  suggests that the variable does affect social anxiety. The research findings showed that age does not affect social anxiety in rural and urban adolescents because the significance values for both were  $>0.05$ . The presence of a caregiver at home does not affect adolescents in either urban or rural areas. After-school activities impact urban adolescents with a significance value of  $0.000 < 0.05$ , but they do not affect rural adolescents. The use of mobile phones does not affect social anxiety in urban and rural adolescents. Finally, personality type influences anxiety in adolescents, regardless of whether they are from urban or rural areas in Table 3.

In the following data, all variances are tested for dominant factors with consideration based on the previous theoretical study that the variance has a strong relationship with the incidence of social anxiety even though, based on statistical tests, it is not related. The following are the results of common factor analysis, where commonalities are used to identify the most dominant common variance dimensions and obtain differences in the predictors of social anxiety in urban and rural areas. In urban adolescents, age dominates as a predictor with a p-value of 0.867 or 86.7%, while in rural adolescents, after-school activities dominate as a predictor p-value of 0.796 or 79.6% in Table 4. The collected data were subsequently analyzed using factor analysis, and to determine the dominant predictor factors, commonalities tables were used with the assistance of SPSS v28.0. has been illustrated in Table 4.

Table 3. Risk factors correlation of social anxiety in urban and rural senior high school

Variance	Urban school*	Rural school*
Age	0.653	0.964
Companion for adolescents at home	0.085	0.912
After school activities	0.000	0.719
Long time use handphone	0.178	0.090
Personality type	0.000	0.011

\*p-value (95% CI)

Table 4. Dominant factor of social anxiety in urban and rural schools

Variance	Communalities	
	Urban	Rural
Age	0.867	0.647
Companion for adolescents at home	0.761	0.590
After school activities	0.712	0.796
Long time use handphone	0.482	0.775
Personality type	0.698	0.794

### 3.1. The prevalence of social anxiety among adolescents in urban and rural schools

The results of Table 2 indicate that the prevalence of social anxiety in urban and rural areas is relatively similar, with moderately high social anxiety ranging from 59.2% to 61.2% [12], [13] stated that there is no relationship between the location of an adolescent school in a city or a rural area and the level of social anxiety among adolescents. The emergence of social anxiety in some individuals can be attributed to factors experienced during their developmental years, and symptoms tend to appear during adolescence. This is because individuals expand their social networks during this period and develop more intimate relationships with peers [14], [15]. Based on this theory, the researcher believes that regardless of whether students attend school in urban or rural areas, if there is a disturbance in their mental health, such as social anxiety, it will still manifest. Therefore, other predictor factors may influence the relatively high prevalence of social anxiety among students in both urban and rural areas. In addition, the incidence of social anxiety is almost the same in villages and cities, which could also be due to gender. According to Pilkionienė *et al.* [8] women experience social anxiety more often.

### 3.2. Association between predictive study variables and social anxiety among adolescents in urban and rural school

#### 3.2.1. The relationship between age and social anxiety among adolescents in urban and rural schools

The prevalence of social anxiety among adolescents attending schools in urban and rural areas shows similarity, with a relatively high rate of 63% among the age group  $\leq 16$  years and low social anxiety among those aged  $\geq 18$  years as shown in Table 1. Table 3 reveals that age does not significantly influence social anxiety in rural and urban adolescents, as the p-values exceed 0.05. These findings suggest that, in general, age does not directly affect social anxiety, as other factors, such as emotional differentiation, can influence social anxiety. This assumption aligns with theories stating that emotional differentiation influences social anxiety, formed through individuals' previous experiences. Emotional differentiation refers to individuals categorizing their perceived experiences into different emotions [16]. At 16 or early adolescence, individuals may still lack sufficient knowledge to cope with rapidly changing situations. Therefore, it is possible that their ability for emotional differentiation has not fully developed, which can lead to responding to problems with different or excessive emotional responses, including social anxiety [3]. On the other hand, in late adolescence, precisely at 18 or older, individuals tend to have better emotional maturity [15]. At this age, individuals have accumulated a lot of experiences that contribute to the development and maturation of their emotions [1], [15]. Therefore, it can be concluded that social anxiety is likely to be directly influenced by emotional differentiation, and an individual's age can influence differentiation. However, age does not directly contribute to the influence on social anxiety.

#### 3.2.2. The relationship between adolescent home companionship and social anxiety among adolescents in urban and rural school

The prevalence of adolescents experiencing social anxiety is relatively high, reaching 62.4% in urban and rural areas, especially among adolescents whose parents accompany them at home. Home companionship can involve various individuals responsible for the adolescent, such as parents, family members, household helpers, and relatives. However, among these companions, parents play the most dominant role in their children's lives. This condition often leads parents to establish specific rules to

maintain the quality of caregiving, which impacts the increased social anxiety among adolescents compared to those not accompanied by parents [5].

It has been agreed upon that parent overcontrolling in parenting is considered a risk factor for developing social anxiety symptoms during adolescence [14], [17]. Parents who are overcontrolling in their parenting behavior may restrict opportunities for their children to explore challenging situations, making it difficult for the child to develop coping mechanisms [18], [19]. According to theory, parents with social anxiety may also have lower self-autonomy, which is necessary for developing control over their environment. This can result in their children also experiencing high levels of social Anxiety [17].

### **3.2.3. The relationship between after-school activities and social anxiety among adolescents in urban and rural schools**

The prevalence of social anxiety among adolescents who engage in after-school activities in urban areas is relatively high, with 71.4% falling into the category of significant social anxiety. In comparison, the prevalence among adolescents in rural areas is 50%. According to Leigh and Clark [13], social anxiety can be influenced by two prominent factors: friendship and peer relationships. Social anxiety disorder in adolescents has a significant impact on adolescents. So actually, the presence of extracurricular activities can help reduce social anxiety [20]. But in other opinion, adolescents who participate in after-school activities are more likely to have frequent and intense interactions with peers. It can make them more self-conscious and highly sensitive to the risk of rejection. For teenagers, feeling accepted in social situations is crucial in their social relationships with peers. If they experience a lack of acceptance, neglect, or rejection can lead to reduced social interaction and avoidance of social situations, negatively impacting their overall development [21].

### **3.2.4. The relationship between the duration of mobile phone usage (phubbing) and social anxiety among adolescents in urban and rural schools**

The prevalence of social anxiety among adolescents who spend  $\geq 11$  hours using their mobile phones is 66.7% in urban areas and 72.2% in rural areas. The use of mobile phones has become a necessity for adolescents, but it also has negative consequences, including making individuals unprepared to face real-life social situations [21]. The forms of interaction in the virtual and real worlds are different. Individuals do not expend as much energy in online interactions because they do not involve social responses such as gestures and other social codes. However, this is different in face-to-face interactions in the real world. Therefore, adolescents who frequently use their mobile phones may experience symptoms of social anxiety due to the challenges of real-world social interactions [8], [22]. In line with other research by Chu *et al.* [20], it is stated that teenagers who use technology, such as spending time with mobile phones, will experience physical and psychological impacts. The psychological impact allows teenagers to experience social anxiety because they use mobile phones too often.

### **3.2.5. The relationship between personality types and social anxiety among adolescents in urban and rural schools**

The prevalence of social anxiety among adolescents with introverted personality types is equally high in urban and rural schools, at a rate of 84.0%. The individual personality is closely related to one's traits. Research findings indicate that individuals with social anxiety disorders have significantly different personality traits and exceptionally high levels of neuroticism and introversion. It can be concluded that individuals with introverted personalities tend to experience emotional instability and exhibit inward-focused behavior [5], [23]. Social anxiety disorder is associated with several personality types. As with closed personalities, individuals tend to have weak self-control and self-doubt, so this group has a greater possibility of seasonal affective disorder (SAD) [24].

### **3.2.6. The dominant predictors influencing social anxiety among adolescents in urban and rural schools**

The study results in Table 4 indicate that the dominant predictors of social anxiety in urban and rural schools differ. In urban adolescents, age is the dominant predictor of social anxiety, accounting for 0.867 or 86.7%. On the other hand, in rural adolescents, the dominant predictor of social anxiety is after-school activities, accounting for 0.794 or 79.4%. Education in rural areas has recently become a strategic issue in the national development of Indonesia. Efforts to improve the quality of learning and curriculum, focusing on developing students' life skills, are continuously being enhanced to achieve educational equity [25]. Rural and urban schools do not differ in learning aspects or curriculum. However, a notable difference can be observed in the availability of facilities and infrastructure supporting learning [26].

Priasmoro [15] stated differences in the potential life skills between students in urban and rural areas of East Java. Out of the nine measured aspects, three aspects showed high scores for rural students: independence, leadership, and cooperation [27]. On the other hand, there were no notable average scores for the measured

aspects among students in urban areas. This theory indicates that social anxiety in students attending rural schools is closely related to the elements that develop in rural students, such as independence, leadership, and cooperation [28]. These three aspects in rural students are manifested in their daily lives through close interactions with peers during after-school activities, contributing to 79.6% of the relationship. The researchers assume that the aspect of interaction with peers, which is closely tied to the risk of anticipation of rejection and the desire to be accepted by peers, can trigger higher levels of social anxiety in them [28]-[30].

On the other hand, no notable aspect stood out from the measurement results for students in urban areas, as mentioned in the previous theory [31], [32]. Therefore, it can be assumed that the approach aligns with the research findings. This is supported by the research findings that age is the dominant predictor at 86.7%, indicating that social anxiety in urban students is not influenced by external factors but rather by internal factors such as age or individual personality traits [33], [34].

#### 4. CONCLUSION

The prevalence of social anxiety in urban and rural schools is relatively similar, with a majority falling into the relatively high category at 63.8% and only a tiny portion experiencing low social anxiety at 6.4%. The difference in school location among adolescents does not significantly depict variations in social anxiety. The variations in social anxiety primarily arise from sociodemographic differences among adolescents, such as age, home companionship, after-school activities, and personality types. This indicates that social anxiety predominantly emerges from internal factors within individuals. Therefore, based on the research findings, it is hoped that adolescents will be more open-minded and broaden their knowledge to improve their characteristics. Additionally, schools, whether in urban or rural areas, need to pay closer attention to adolescents through the role of teachers in the early detection of anxiety and providing relevant information. By doing so, the issue of high social anxiety in schools can be addressed promptly and prevent further negative consequences for adolescents. Future research can add other variables that come from external factors such as school policies, the curriculum used, and stress in the family and be studied on a wider scope such as at the provincial or regional level.

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