Exploring the Impact of Socioeconomic Status and Environmental Characteristics on Child and Adolescent Mental Health in Disadvantaged Urban Communities in West Java

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ABSTRACT

This quantitative study investigates the complex interactions that exist between neighborhood features, children's and adolescents' mental health, and socioeconomic status (SES) in underprivileged urban neighborhoods in West Java. 340 individuals in a broad sample offered insights into neighborhood characteristics, SES indicators, demographic variances, and mental health outcomes. The results highlight the critical role that economic differences play by revealing a strong negative connection between SES and mental health. Furthermore, neighborhood features—in particular, social cohesiveness and safety perceptions—have been shown to have a significant impact on mental health outcomes. These neighborhood characteristics, according to mediation analyses, moderate the association between SES and mental health, providing detailed insights into the underlying mechanisms. The results help provide a more comprehensive picture of young people's mental health in urban environments, which helps shape targeted treatments and policies for vulnerable groups.

Keywords: SES, Environmental, Child, Adolescent, Mental Health

1. INTRODUCTION

The mental health of children and adolescents in urban, disadvantaged communities is indeed a complex issue, influenced by a multitude of factors [1]–[4]. These include socioeconomic and environmental adversities, such as poverty, child labor, gender inequity, maltreatment, and domestic violence, which are more pronounced in contexts of extreme disadvantage like urban informal settlement communities [5]. Community providers in South Africa have identified three interlinked themes to address these challenges: community mobilization, service provision that takes into account contextual factors, and capacity building that taps into existing resources and integrates with support systems [5]. They emphasized the need for mental health awareness and strategies to engage children, youth, and parents. They also highlighted the importance of addressing inequalities, lack of basic needs, and gender-based issues like domestic violence, teenage pregnancy, and single motherhood [5].

Access to public open spaces has been identified as a factor that can improve mental health, especially in disadvantaged urban neighborhoods [6]. These spaces can enhance social interactions and reduce feelings of worthlessness among residents [6]. Digital interventions have also shown promise in improving mental health access and engagement among marginalized youth, including those from LGBTQA+ communities [7]. These interventions can provide cognitive coping skills and offer emotional and social support, which are critical for adolescents' mental health [7].

The COVID-19 pandemic has further highlighted the importance of urban design interventions and green infrastructure in supporting mental health. Changes in exposure to nature during the pandemic lockdown were strongly linked to mental health outcomes, especially among

young people [8]. For urban refugee youth, such as Somali refugees in Kenya, prolonged displacement, disrupted development of cultural identity, and discrimination experienced in the host country can significantly impact mental health [9]. Interventions for these communities need to address and prevent intergenerational trauma through family-based interventions and community-level programs [9].

The complex relationship in West Java, Indonesia, can be understood through various aspects, including environmental, socioeconomic, and religious factors. From an environmental perspective, West Java faces challenges such as termite attacks on teakwood plantations, which are a valuable resource for the wood industry. The termite communities become more complex over time, leading to increased damage to the trees. This issue is particularly prevalent in landscapes with overgrown weeds and shrubs [10]. Additionally, the region is grappling with environmental crimes, such as the disposal of hazardous and toxic waste in the Citarum watershed, leading to significant environmental damage [11].

Socioeconomically, West Java is home to tea smallholders who face challenges related to droughts due to climate change and the 2015–2016 El Nino. These smallholders are not poor, but they are in a vulnerable position and remain far below the level of a stable lower-middle class. They lack human and financial capital, and growing tea is not supported by horizontal coordination/social capital [12]. Furthermore, the region is experiencing increasing rural inequality, with a few wealthy tea agripreneurs accumulating and concentrating tea assets [12].

Religiously, West Java has been a hotspot for religious conflict, with the province having the highest ranking of violations of religious freedom in Indonesia for the last two decades. The sociological characteristics of urban and rural areas influence the tendency of different forms of conflict in both areas. Heterogeneous urban social conditions tend to have an impact on the forms of conflict between religious communities, while homogeneous rural social conditions affect the forms of conflict that are internal to religious communities [13].

In this particular urban context, the study aimed to explore the relationships among children's and teenagers' mental health, neighborhood features, and socioeconomic level (SES). There are still differences in children's and teenagers' mental health outcomes, and there are still significant gaps in our knowledge of how neighborhood features and socioeconomic position interact to cause these problems, especially in the context of West Java's urban neighborhoods. These neighborhoods' poor living circumstances, lack of access to assistance, and economic difficulties all contribute to the complexity of mental health issues. Consequently, there is a pressing need to close this gap by carrying out an exhaustive investigation that delves into the intricate relationships between neighborhood and socioeconomic issues and the mental health of young people in West Java.

2. LITERATURE REVIEW

2.1 Socioeconomic Status and Mental Health

There is a complicated and multidimensional relationship between children's and teenagers' mental health and their socioeconomic level (SES). Studies have indicated that youth with low socioeconomic status (SES) are more prone than their counterparts with high SES to experience mental health issues [14]. Numerous variables, such as elevated stress levels, restricted access to high-quality education, and greater exposure to unfavorable environmental circumstances, are to

blame for this [14]. According to a German study, mental health issues in children and adolescents were independently predicted by all SES factors, including household income, parental education, and parental unemployment [14]. Stressful life circumstances, such as serious financial difficulties, mental illness, or parental accidents, were also highly significant predictors of mental health issues in children [14].

It has been discovered that exposure to violence has a substantial negative influence on children's and teenagers' mental health in addition to socioeconomic considerations. According to a Guatemalan study, the impact of sociodemographic and socioeconomic factors on measures of anxiety, depression, and health-related quality of life was significantly mitigated by exposure to violence [15]. Adolescents who experienced greater levels of violence also reported worse levels of health-related quality of life and higher levels of anxiety and depression [15]. Moreover, children and adolescents' mental health problems have been made worse by the COVID-19 epidemic, especially in low-income urban environments. According to a research done in Peru, the pandemic's forced social isolation was a major cause of anxiety and depressive symptoms [16].

In conclusion, a variety of factors, such as difficult living circumstances, exposure to violence, and the impact of global events like the COVID-19 epidemic, influence the connection between SES and mental health in children and adolescents. These results highlight the necessity of comprehensive public health policies and treatments that tackle these intricate relationships in order to support children's and adolescents' mental health and well-being, especially in metropolitan environments with socioeconomic inequality.

2.2 Neighborhood Characteristics and Mental Health

Children's and teenagers' mental health is shaped in large part by their neighborhood environment. Numerous research has shown how different neighborhood characteristics affect mental health. First off, it has been discovered that neighborhood social capital—which comprises components like social cohesion, trust, and reciprocal relationships within the community—has a major influence on mental health. For example, a study conducted in Japan discovered that pregnant women's mental health was impacted by both area and individual social capital [17]. Similarly, a different study discovered that fewer depression and anxiety symptoms in adolescence were linked to neighborhood collective efficacy, which is a mix of social cohesiveness and control [18].

Second, one other important consideration is having access to green spaces for enjoyment. Children and teens spend less time playing outside as a result of COVID-19 regulations, according to a Canadian study. This is concerning because outdoor play is crucial for kids' physical and emotional health [19]. According to a different study, neighborhood social cohesiveness and urban green-blue space (UGBS) spatial patterns moderated the impact on residents' well-being [20]. Thirdly, safety is a major worry, especially in metropolitan areas where socioeconomic issues are prevalent. Early exposure to adverse neighborhood events, such as violence, poor teacher-student relationships, and poverty, raises the likelihood of mental illness, according to a Chinese study [21]. Another study discovered that certain underprivileged population segments, such as the uninsured, may have less access to mental health and drug misuse treatment if safety net hospitals (SNH) close or are converted to for-profit businesses.

In conclusion, creating focused interventions does need an awareness of the dynamics of local influences on mental health. Enhancing neighborhood social capital, expanding access to

leisure areas, and guaranteeing safety—especially in impoverished metropolitan areas—may be the main goals of these interventions.

2.3 Gaps in Existing Literature

Although research on the effects of neighborhood features and socioeconomic status separately on mental health has been done, there is a clear gap in the literature when it comes to the combined effects of these factors, especially when it comes to the unique circumstances of underprivileged urban areas. In places like West Java, where particular difficulties may make mental health disparities worse, there is an even greater need to comprehend the complex interactions between these variables. By combining current research and performing a thorough quantitative analysis that views neighborhood attributes and SES as essential elements of the mental health landscape, this study seeks to close this gap in knowledge.

3. METHODS

3.1 Research Design and Sample

This study used a quantitative research design to systematically investigate the impact of socioeconomic status (SES) and neighborhood characteristics on the mental health of children and adolescents in disadvantaged urban communities in West Java. The quantitative approach allows for structured and standardized data collection, thus facilitating rigorous statistical analysis to uncover patterns and relationships between variables (Creswell & Creswell, 2017).

The target population for this study consisted of children and adolescents aged 6 to 18 years living in disadvantaged urban communities in West Java. Using a stratified random sampling method, this study ensured representation from various socioeconomic and environmental strata, thereby increasing the generalizability of the findings, 350 questionnaires were distributed and 340 were returned.

3.2 Data Collection

Data is collected through a structured survey administered to participants and, where possible, their primary caregivers. The survey instrument will incorporate validated measures of socioeconomic status, neighborhood characteristics, and mental health outcomes. Demographic information, family structure, academic achievement, and other relevant variables will also be collected to provide a comprehensive understanding of the participants' context. The use of standardized instruments will increase the reliability and validity of the data collected.

Variables

Mental health outcomes, measured through standardized instruments such as the Strengths and Difficulties Questionnaire (SDQ) and the Child Behavior Checklist (CBCL).

1. Socioeconomic Status (SES): Indicators include parental income, education, and occupation.
2. Neighborhood Characteristics: These include perceived safety, social cohesion, and access to recreation.

3. Covariates: Demographic information, family structure, academic achievement, and other relevant factors that may influence the relationship between SES, neighborhood characteristics, and mental health outcomes.

3.3 Data Analysis

Quantitative data analysis will involve a combination of descriptive and inferential statistical methods with the help of SPSS. Descriptive statistics are used to summarize the demographic characteristics of the sample. Inferential statistics, including correlation analysis and multiple regression models, were used to examine the relationships between socioeconomic status, neighborhood characteristics, and mental health outcomes.

Mediation and moderation analyses were conducted to explore potential mechanisms and conditions that may influence the observed relationships. Subgroup analyses based on age, gender, and other relevant factors will be conducted to identify variations in the impact of socioeconomic status and neighborhood characteristics on mental health.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

This study involved a sample of 340 children and adolescents (aged 6 to 18 years) living in disadvantaged urban communities in West Java. Descriptive statistics provided insights into demographic characteristics, socioeconomic status (SES), neighborhood characteristics, and mental health outcomes.

1. Demographics: The sample showed diversity in terms of age (Mean = 13.5 years, SD = 2.4), gender (53% female, 47% male), and family structure, reflecting the heterogeneous nature of the population studied.
2. Socioeconomic Status (SES): SES indicators showed variations within the sample. Parental income ranged from Rp 1,000,000 to Rp 10,000,000 per month (Mean = Rp 3,500,000, SD = Rp 1,200,000), parental education varied from elementary school to college level, and parental occupation covered a wide range of industries and employment status.
3. Neighborhood Characteristics: Perceived safety (Mean = 3.8, SD = 0.9), social cohesion (Mean = 4.2, SD = 1.0), and access to recreation (Mean = 3.9, SD = 1.1) varied among participants, indicating a diverse living environment in the study area.
4. Mental Health Outcomes: Preliminary analysis of mental health outcomes, as measured by the Strengths and Difficulties Questionnaire (SDQ) and Child Behavior Checklist (CBCL), showed scores ranging from 0 to 40 (SDQ) and 20 to 80 (CBCL), indicating a spectrum of mental health challenges and strengths within the sample.

4.2 Inferential Statistics

Correlation Analysis: Preliminary correlation analysis showed a significant relationship between SES and mental health outcomes ($r = -0.282$, $p < 0.001$), with higher SES being associated with fewer reported difficulties. Additionally, neighborhood characteristics showed significant

correlations with mental health indicators, particularly perceived safety (r = -0.212, p < 0.01) and social cohesion (r = -0.194, p < 0.05).

Regression Analysis: Multiple regression analysis further explored the predictive power of SES and neighborhood characteristics on mental health outcomes. The results showed that SES significantly predicted mental health outcomes (β = -0.224, p < 0.001), even when controlling for relevant covariates. In addition, certain neighborhood characteristics, such as perceived safety (β = -0.155, p < 0.01), emerged as independent predictors of mental health, underscoring the importance of considering the broader environment in understanding adolescent mental health.

Mediation and Moderation Analysis: Further analyses explored potential mediation and moderation effects. Findings suggest that perceived safety and social cohesion may mediate the relationship between SES and mental health, emphasizing the need for a deeper understanding of the mechanisms at play.

Discussion

The study's findings support the body of research that indicates a significant correlation between children and adolescents' mental health outcomes and their socioeconomic position. Higher SES is linked to better mental health, as seen by the negative correlation (r = -0.282), which suggests that economic disparities have a significant influence on the mental health of underprivileged urban areas. These results highlight how crucial it is to implement focused interventions to address the financial factors that influence mental health in vulnerable people, related to research by [2], [22]–[25].

A thorough investigation of neighborhood features revealed a noteworthy influence on the mental well-being of the individuals under investigation. These characteristics are important, as evidenced by their negative connections with mental health outcomes, especially felt safety (r = -0.212) and social cohesion (r = -0.194). Better mental health outcomes were linked to safer and more cohesive areas, highlighting the need for community-level interventions that raise the standard of the built environment, the related to research by [26]–[29].

Above all, this study looked into how neighborhood features and socioeconomic status interact to affect mental health. The association between SES and mental health can be mediated by perceived safety and social cohesion, according to mediation analysis (p<0.01), which provides insight into the processes by which economic differences are reflected in mental health outcomes. Comprehending these intervening variables is essential to creating interventions that focus on certain community features to reduce mental health inequalities.

Implications for Intervention and Policy

The results of this study have important ramifications for programs and laws meant to enhance the mental health of kids and teenagers living in underprivileged metropolitan areas. Better neighborhood surroundings, especially in terms of safety and social cohesiveness, as well as interventions aimed at mitigating economic gaps can be valuable resources in fostering improved mental health outcomes.

Limitations and Future Research

This study has limitations even if it offers insightful information. The focus on a particular metropolitan population in West Java may have an impact on generalizability, and the cross-

sectional approach restricts the identification of causal links. To strengthen the results, future studies could extend the geographic scope and employ a longitudinal methodology.

5. CONCLUSION

To sum up, this research contributes to our comprehension of the intricate relationships affecting the mental well-being of kids and teenagers living in underprivileged metropolitan areas in West Java. The strong quantitative analysis highlights the important effects that local features and socioeconomic status play. While many aspects of the local environment, such social cohesiveness and safety perceptions, independently support mental well-being, higher SES is linked to improved mental health outcomes. The study is significant because it reveals the neighborhood characteristics' moderating role in the association between SES and mental health. The results of this study have significant implications for intervention techniques. Specifically, they point to the necessity of developing comprehensive approaches that not only address economic inequities but also improve neighborhood quality and mental health outcomes for marginalized populations. This study adds significant knowledge to the field of teenage mental health by providing evidence-based directions for further investigation and policy-making in comparable metropolitan settings.

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