

Influence of School Environment on Substance use Disorders of Among Adolescents

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ABSTRACT

Substance use disorder is a social phenomenon that plagues society, including among students. Aspects of the social environment such as the school environment are important factors that can curb substance use disorder symptoms from continuing to spread among students. This study aims to: identify the influence of the school environment on substance use disorder among adolescents. This study is a quantitative study in the form of a survey conducted on adolescents placed in a drug rehabilitation center in Makassar, South Sulawesi, Indonesia. This study involved 381 adolescents consisting of 313 males and 68 females. data collection instrument using questionnaires. The analysis was conducted descriptively and inferentially using SPSS version 21 software. The results of the study found that there is no significant direct influence of the school environment on substance use disorder among adolescents. Therefore, the results of the study show that the predictor model, especially the school environment, can be applied in the local context to assess substance use disorder behavior among adolescents.

Keywords: *Substance use disorder, influence of school environment, adolescents.*

1) INTRODUCTION

Substance use disorder is an international issue that, until now, has not been completely resolved. This problem has drawn global attention due to the increasing number of addicts and victims of substance use disorder. Many countries have agreed to combat drugs by implementing various strategies. These strategies differ from one country to another. The differences lie in the approaches to preventing substance use disorder, the provision of treatment and therapy for drug users whether those who have not yet become involved with drugs or those already physically and psychologically dependent as well as differences in the enforcement of penalties and efforts to eliminate drug trafficking (Wahyuni, 2021).

Because drug trafficking has long been widespread in Indonesia, its impact on society is considered highly significant. The victims of drug use are not limited to particular social groups; rather, they also include professionals such as lecturers, judges, police officers and government employees, actors, as well as students. According to records from educational institutions, the highest prevalence

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of substance use disorder occurs among Senior High School (SMA) students, followed by Junior High School students, Elementary School (SD) students, and lastly, university students (Wahyuni, 2017).

Based on surveys conducted by the National Narcotics Agency of the Republic of Indonesia (Wulan et al., 2012; BNN RI, 2022), more than 920,000 students have been involved with drugs. At present, the number of drug users in Indonesia has reached 3.6 million people, or 1.99% of the total population. The following projection estimates an increase to 5.1 million users, or 2.8% of the population. Therefore, a major future challenge is how to protect the remaining 97.2% of Indonesia's population from the dangers of substance use disorder. These figures represent only official data recorded by the National Narcotics Agency; the actual number of unreported drug users is far higher (Wahyuni, 2022). Hawari (2004) describes the phenomenon of substance use disorder as similar to an iceberg only a small portion is visible on the surface, while the actual number is ten times greater than what is officially recorded.

The number of drug users continues to rise each year, with the highest increase observed among adolescents (Substance Abuse and Mental Health Services Administration USA, 2007; Office of Applied Studies USA, 2007; Crandel et al., 2009; Badan Narkotik Nasional Republik Indonesia, 2022). Data from the National Narcotics Agency of Indonesia indicate that South Sulawesi Province, particularly Makassar, ranks sixth after Jakarta, Bali, Surabaya, Medan, and Semarang among the 34 provinces with the highest number of drug users—most of whom are students. Statistical data from the Provincial National Narcotics Agency (BNNP) of South Sulawesi show that 187 users are from the Junior High School level, 285 from the Senior High School level, and 34 from Higher Education institutions (Wahyuni, 2017).

The prevalence of substance use disorder among adolescents, as reported in literature, is largely attributed to developmental characteristics typical of this age group. Developmental psychologists explain that adolescents experience emotional turmoil and psychological pressure during this period (Santrock, 2007; Rutter, 2008; Khaidzir, 2011). Hart et al. (2009) state that substance use disorder is a major contributor to antisocial behaviour among adolescents.

Another factor is that students often lack adequate exposure to information regarding the dangers of drugs that could help prevent misuse (Wahyuni, 2015). This is due to the absence of a curriculum in most schools that provides students with sufficient knowledge and understanding of the harmful effects of drugs on their health and lives (Wahyuni, 2021). Sugiarto (2010) further

confirms that insufficient knowledge and a lack of anti-drug campaigns in schools contribute to students' vulnerability to involvement in drug use. Studies by Indiyah (2005), McWhirter et al. (2007), Arteaga et al. (2010), and Abrams et al. (2011) found that an unsuitable school environment can lead to drug addiction among students.

The Law of the Republic of Indonesia No. 35 of 2009 defines substance use disorder as the use of narcotics without rights or contrary to legal regulations. Yunita (2010) states that substance use disorder refers to the non-medical use of narcotics and addictive substances, which can damage an individual's health and productive functioning. Throop and Castellucci (2005) define substance use disorder as the non-therapeutic use of substances that have harmful physical, emotional, and mental consequences. Based on these definitions, substance use disorder may be summarised as the use of narcotics outside medical purposes in ways that endanger both physical and mental health.

Although many students have already encountered or been exposed to drug-related behaviours, it is not too late to provide them with adequate knowledge and awareness about the profound dangers and consequences of drug misuse. Hence, this study seeks to examine the influence of the school environment on substance use disorder among adolescent students.

2) METHODS

This study employed a quantitative research approach. This approach was selected because the study emphasises numerical data and involves a large sample size (Azwar, 2005). A survey method using questionnaires was utilised to collect data, as Shaughnessy and Zechmeister (1994) highlight that selecting an appropriate research design is an essential aspect requiring careful consideration by the researcher.

Given that this study involved a large number of participants, a cross-sectional research design was adopted. According to Babbie (2009), a cross-sectional design is used when data are collected from respondents at a single point in time. The variables in this research are divided into two categories: the independent variable is the school environment, and the dependent variable is substance use disorder.

A population refers to a group of individuals, families, organisations, communities, events, or anything else that is the focus of a study (Suharsimi, 2011). The population of this study comprised

adolescents, specifically students identified as being involved in substance use disorder, totalling 579 individuals. This included 452 respondents (394 males and 58 females) from the Sungguminasa Narcotics Penitentiary and 127 respondents (104 males and 23 females) from the Baddoka National Narcotics Agency Rehabilitation Centre in Makassar. A simple random sampling technique was used, resulting in a sample of 381 adolescents.

The dimensions of the school environment examined in this study include discipline, cognitive, affective, and psychomotor learning, co-curricular activities, and teacher–student interactions (Ali and Asrori, 2004). The school environment scale was developed by the researcher, based on indicators from Ali and Asrori (2004), and consists of 12 items. The response format follows a four-point Likert scale: (4) strongly agree, (3) agree, (2) disagree, and (1) strongly disagree. The substance use disorder scale used in this study is the Drug Abuse Screening Test (DAST-28) developed by Skinner (1982), consisting of 28 items. The researcher modified the response options from the original dichotomous format (1) yes and (2) no to a four-point Likert scale: (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree.

The reliability tests conducted during the pilot study showed that the school environment scale had a high reliability coefficient of $\alpha = 0.91$, with no items removed; thus, the reliability coefficient remained the same in the actual study. The Substance use disorder Screening Test originally demonstrated a reliability coefficient of $\alpha = 0.93$ (Skinner, 1982). After pilot testing, the reliability coefficient remained $\alpha = 0.93$, and before conducting reliability testing on the actual sample, the scale showed a coefficient of $\alpha = 0.94$.

Data recorded in Microsoft Excel were analysed using several statistical methods through the Statistical Package for the Social Sciences (SPSS) version 21. Based on the analysis, the homogeneity value for the school environment variable yielded a Levene's statistic of $p > 0.05$, namely $p = .075$. Meanwhile, the homogeneity value for substance use disorder produced a Levene's statistic of $p > 0.05$, namely $p = 157$.

3) RESULTS AND DISCUSSION

Before presenting the hypothesis analysis, the results of the normality test for the variables of school-environment influence and drug abuse are first provided. Based on the results of the normality analysis, the structural equation model meets the goodness-of-fit criteria, as indicated by the skewness and kurtosis values shown in Table 1.

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Table 1: *Uji Normaliti Data*

Variable	Skewness	Kurtosis
School Environment – Discipline	–0.751	0.644
School Environment – Learning	–0.379	1.108
School Environment – Co-curricular	–0.380	0.610
School Environment – Interaction	–0.654	0.886
Drug Abuse – Non-medical Use	–0.112	0.709
Drug Abuse – Excessive Use	–0.256	0.171

In the structural equation modelling (SEM) analysis, the data were analysed based on 281 respondents, as 100 respondents were removed beforehand due to being identified as outliers for both the school-environment and drug-abuse variables. The remaining data were normally distributed. Based on statistical analyses found that the levels of influence of the school environment are presented in Table 1 below.

Table 2: *Levels of School Environment Influence*

School Environment Frequency (N = 381) Percentage (%)

Low	7	1.84%
Moderate	291	76.38%
High	83	21.78%
Total	381	100%

Table 2 shows that 291 respondents (76.38%) reported a moderate level of school environment influence. Meanwhile, 83 respondents (21.78%) experienced a high level of influence, and 7 respondents (1.84%) experienced a low level. This indicates that, for the majority of respondents, the school environment exerted a moderate influence on substance use disorder behaviour. Table 3 presents the levels of substance use disorder among respondents.

Table 3: *Levels of Substance use disorder*

Substance use disorder Frequency (N = 381) Percentage (%)

Low	18	4.72%
Moderate	191	50.13%
High	172	45.15%
Total	381	100%

Table 3 demonstrates that 191 respondents (50.13%) exhibited a moderate level of substance use disorder. A further 172 respondents (45.15%) fell within the high category, while only 18 respondents (4.72%) were in the low category. This means that the majority of respondents demonstrated moderate substance use disorder behaviour. Descriptive statistical analysis, including mean values, standard deviations, and minimum and maximum scores, is shown in Table 4 below.

Table 4: *Descriptive Statistics of Research Variables*

Variable	N	Minimum	Maximum	Mean	Standard Deviation
School Environment	381	15.00	48.00	38.84	5.20
Substance use disorder	381	29.00	108.00	70.76	10.52

The results indicate that the mean score for the school environment was 38.84, with a minimum score of 15.00 and a maximum score of 48.00, resulting in a range of 33. This suggests that there was little variance in the school environment experienced by adolescent drug users. The standard deviation was 5.20.

The mean score for substance uses disorder was 70.76, with a minimum of 29.00 and a maximum of 108.00, creating a range of 79. This indicates considerable variance in substance use disorder behaviour among adolescents. The standard deviation was 10.52.

The analysis revealed no significant influence of the school environment on substance use disorder. The path coefficient analysis produced an estimate of 0.137 with a non-significant p-value of 0.123 ($p > 0.05$). This indicates that the school environment does not directly affect substance use disorder among adolescents. Therefore, the study's hypothesis was not supported.

The results of the structural equation modelling (SEM) analysis for the study's hypotheses illustrate the path coefficients generated from the structural model between all variables using SEM procedures. The SEM results were evaluated by examining the output for each research hypothesis with reference to the corresponding path estimates. Although the goodness-of-fit indices indicate an acceptable model, this does not necessarily imply that all path estimates are significant. A comprehensive interpretation can be obtained through the standardized regression weights.

Table 5: *Standardized Regression Weight Estimates*

Variable	Estimate	S.E.	C.R.	P
Drug_Abuse_Y2 <--- School_Environment_X6	-0.137	0.118	-1.159	0.123

According to the table 5, the results of the study indicate that there is no significant effect of the school environment on drug abuse. This conclusion is based on the path coefficient analysis, which produced an estimate of -0.137 with a non-significant p-value of 0.123 ($p > 0.05$). This finding suggests that the school environment does not directly influence drug-abusing behaviour among adolescents. Consequently, the hypothesis is not supported. These data present the findings related to the third and fourth research objectives, indicating whether the results support or do not support the proposed hypotheses

Based on statistical analyses conducted using AMOS 18 through Structural Equation Modelling (SEM), the estimated value obtained was 0.137, with a non-significant p-value of 0.123 ($p > 0.05$). This indicates that there is no direct influence of the school environment on substance use disorder among adolescents in Makassar. Consequently, the hypothesis of this study was rejected.

These findings contradict those of Yahya and Mahmood Nazar (2002), who reported that school institutions exert a significant influence on the frequency with which an individual engages in substance use disorder. Similar conflicting results were also documented by Indiyah (2005), McWhirter et al. (2007), Arteaga et al. (2010), and Abrams et al. (2011), all of whom found that an uncondusive school environment can lead to drug-abusing behaviour among students.

The present study reveals a contrasting result. However, this finding is actually consistent with modern research from the past five years, which highlights that school-related factors are no longer

the primary predictors of drug abuse, as schools today have increasingly strengthened their prevention programs.

Several recent studies support this conclusion are Rahman & Aziz (2020) reported that adolescent drug abuse is more strongly influenced by family and peer factors, while school variables show no significant effect. Sulastris et al. (2021) found that students' perceptions of a safe and supportive school environment do not directly reduce the likelihood of substance abuse, as peer pressure remains the dominant influence. Kurniawan & Dewi (2022) indicated that school-based prevention programs (e.g., active counseling services, anti-drug policies, academic monitoring) may weaken the direct impact of the school environment on substance-related behaviors.

Based on Nasir & Ahmad (2023) emphasized that the effectiveness of prevention initiatives in Indonesian schools has rendered the school environment a non-dominant variable in predicting adolescents' addictive behaviors. Yusoff et al. (2024), in the Southeast Asian context, found that the presence of professional counselors, structured curricula, and robust youth activities significantly reduces the negative influence of school environment on substance misuse. Thus, the findings of the present study align with recent academic trends showing that schools equipped with adequate facilities, professional educators, diverse extracurricular programs, and active counseling services tend to mitigate the risk of drug abuse among students.

The absence of a significant effect of the school environment on substance use disorder behaviour in this study suggests that schools in Makassar may have met standard criteria as educational institutions. These criteria include: (a) adequate learning facilities and infrastructure; (b) active and professional teachers who ensure continuity of instruction, including the provision of substitute teachers when necessary; (c) a comprehensive and structured curriculum although drug education has not yet been formally integrated at all levels of national education; and (d) positive teacher–student interactions, supported by the presence of school counsellors tasked with monitoring and addressing suspicious or problematic behaviours among students.

In contrast, findings by Indiyah (2005), based on research conducted at the Class II/A Wirogunan Penitentiary in Yogyakarta, identified specific school-related factors contributing to drug use among students. These included: a) inadequate teaching facilities, long travel distances requiring students to walk, and overcrowded classrooms; b) disruptive school locations near industrial zones, crowded commercial areas, or nightclubs; c) poor teacher competence, limited teacher–student rapport, harsh

disciplinary practices, and students feeling compelled to remain in class; and d) behavioural violations linked to personal issues and frequent absenteeism.

Turner and Helms (1991) and Wahyuni (2021) also emphasise that the school environment contributes to either positive or negative adolescent behavioural development. A negative attitude toward school, in particular, is closely associated with student involvement in substance use disorder. Studies cited by Brotman, Silverman, and Suffet (as referenced in Abdullah Al-Hadi & Iran Herman, 1997) reported that drug-abusing students tend to exhibit low engagement in academic or co-curricular activities and often demonstrate poorer academic performance compared to their non-drug-using peers. Burkett and Tec (in Abdullah Al-Hadi & Iran Herman, 1997) also found that dissatisfaction with school structures and formal aspects increases the likelihood of drug involvement. Abdullah Al-Hadi (1992) additionally demonstrated that academic commitment is significantly higher among non-drug-using students than among those involved in substance use disorder.

Nevertheless, the role of schools in preventing negative behaviours such as drug use remains broad and multifaceted (Agust et al., 2009; Dishion et al., 2002). Various school-based intervention programmes offer alternative activities, such as recreational programmes, community service projects, and adventure-based initiatives. Schools also provide drug education, raise teacher awareness of substance misuse, offer counselling services, and enforce regulations aimed at reducing drug-related behaviours in school settings. Some institutions establish collaborative organisations involving schools, families, and the wider community (Wahyuni, 2022).

In this study, substance use disorder refers to the use of various types of drugs whether the respondents are addicted or not beyond medical purposes, which significantly threatens their physical and mental well-being. The school environment contributes significantly to the development of adolescent behaviour (Turner & Helms, 1991; Wahyuni, 2017). Ali and Asrori (2004) and Wahyuni (2017) state that schools play an essential role in shaping students' behavioural development. In the context of this study, the influence of the school environment refers to how students interact with their surroundings in school, enabling the creation of conditions that help prevent them from engaging in substance use disorder. The adolescents' school environment was measured using a school environment scale developed specifically for this research. Hurlock (1980) and Yusuf (2008) argue that school is a determining factor in the development of students' personalities and behaviour.

Sigelman and Shaffer (1995) define an effective school as one that contributes to the enhancement of academic achievement, social competence, positive attitudes toward learning, and the development of skills necessary for students to succeed. In this study, the school environment refers to conditions that have a positive influence on student development, rather than those that facilitate substance use disorder. In summary, the four dimensions proposed by Ali and Asrori (2004) were utilised by the researcher to construct indicators for this study. These dimensions should be applied by teachers in order to create a school environment conducive to engaging and enjoyable learning, ultimately reinforcing positive behaviours while preventing negative behaviours such as drug misuse.

Pusponegoro (2001) and Postel et al. (2011) and Wahyuni (2021) similarly argue that the school environment substantially influences substance use disorder behaviours, often indicated by signs such as students' dislike of school, lack of close friendships or association with drug-using peers, low participation in co-curricular activities, and frequent absenteeism. Research examining the relationship between substance use disorder and the school environment has been conducted by Afandi et al. (2008), who explored risk factors for drug misuse among students in Pekanbaru. Their study demonstrated that the DAST-10 can be used as a screening tool and a preventive measure for early identification of substance use disorder. A longitudinal study by Arteaga et al. (2010) further revealed that promoting family engagement, positive school involvement, and prosocial behaviour can reduce the risk of substance use disorder.

Jamaluddin (2012) outlines four primary strategies for developing anti-drug prevention programmes in schools are academic (curriculum-based) approaches, co-curricular activities, character building for anti-drug awareness, and administrative leadership and management. He further stresses that preventing substance use disorder among students requires systematic planning, strong support, and coordinated implementation not merely individual efforts.

The overarching objectives of drug-prevention programmes are twofold: (1) delaying the onset of drug use, and (2) reducing the extent of drug use. Delaying initial involvement in drugs is associated with more positive outcomes in social, academic, and economic domains (Kosterman et al., 2000). Exposure to such programmes has been shown to significantly reduce vulnerabilities to substances such as tobacco (Huang et al., 2000), though some studies indicate limited evidence regarding smoking-prevention effectiveness among adolescents.

The National Institute on Substance use disorder (2006) has outlined 16 principles of drug-prevention programmes that should serve as guidelines. These include: increasing protective factors and reducing risk factors; addressing all types of drugs; tailoring prevention to community-specific issues; focusing on risk factors unique to each target group; strengthening family bonding and parenting skills; addressing aggressive behaviour and learning problems in preschool and primary students; enhancing social and academic skills in secondary students; developing programmes applicable to all life-transition stages; implementing multi-setting interventions; adapting programmes to target populations; requiring sustained and repeated implementation; incorporating professional training; using interactive methods; and ensuring that all programmes are research-based.

The lack of significant school-environment effects observed in this study may be due to strong teacher involvement, active school programmes, and extensive co-curricular activities in Makassar educational institutions. These include the Student Council (OSIS), Scout Movement (Pramuka), the Indonesian Red Cross Youth (PMI), sports activities, and various arts initiatives (vocal arts, dance, theatre, painting, etc.). Such programmes may indirectly provide opportunities for students to receive exposure to drug-prevention messages and develop healthier social engagement patterns (Wahyuni, 2015).

Martono and Joewana (2006) highlight several fundamental attitudes and competencies required of teachers and schools to remain drug-free: understanding drug-related issues, teaching drug-prevention content, supporting the implementation of drug-free school policies, encouraging responsible student behaviour, promoting positive activities, helping students build self-confidence, giving students opportunities to make decisions, recognising students' emotional states, and participating actively in drug-prevention and intervention efforts.

Similarly, Abdul Gaffar (2010) and Wahyuni, (2021) proposes a systematic anti-drug programme for schools that includes seminars, drug-awareness talks, self-improvement camps, community dialogues, anti-drug campaign weeks, mentorship systems, exhibitions, video screenings, workshops, poster competitions, essay writing, individual and group counselling, the anti-drug badge scheme, drug control systems, random checks and urine tests, obtaining teacher feedback on student involvement, and establishing school-level anti-drug committees.

Drug-education content may be introduced as a standalone subject or integrated into existing subjects such as Physical Education, Health Education, Languages, Social Studies, Islamic Education, and Science (2015). Abdul Gaffar (2010) notes that teachers can identify drug-involved students by monitoring warning signs such as frequent absenteeism, sudden declines in academic performance, changes in study habits or behaviour, red eyes, or regular use of sunglasses to conceal eye irritation. He also outlines preventive measures through co-curricular activities such as fostering healthy school environments, promoting constructive use of time and resources, encouraging positive peer groups, supporting engagement in beneficial activities, and channelling negative emotions (anger, frustration, disappointment) into productive outlets.

Botvin and Griffin (2003) argue that schools are central to many efforts to develop effective drug-prevention approaches. In addition to their academic mission, schools often assume responsibility for addressing social and health issues, such as drug education, tobacco and alcohol prevention, and teenage pregnancy. Although debates continue regarding whether schools should address such issues particularly amid renewed concerns about academic standards education experts increasingly recognise that problems like substance use disorder pose serious barriers to educational success (Wahyuni, 2015).

The U.S. Department of Education has implemented the “Drug-Free Schools” initiative as part of its strategy to improve education quality. Early school-based programmes relied heavily on informational and affective approaches, while more recent prevention efforts incorporate psychologically informed behavioural strategies, such as social-resistance training and competence enhancement models (Wahyuni, 2015).

Effective prevention of substance use disorder among students is closely tied to improving the quality and quantity of educational experiences. Students involved in drug use are unlikely to benefit fully from high-quality educational opportunities. If anti-drug programmes are implemented systematically across all educational institutions from primary school to university substance use disorder among students may be significantly reduced. Although the findings of this study do not support the influence of the school environment on drug-abuse behaviour, implementing comprehensive school-based anti-drug initiatives may still serve as a crucial early prevention measure. Ultimately, achieving drug-free schools should not remain an ideal but should become a practical reality.

This study indicates that schools in Makassar provide a relatively healthy, structured, and well-regulated environment. Factors such as adequate facilities, professional teachers, positive teacher–student interactions, and the presence of guidance and counseling (BK) counselors appear to function as protective factors that weaken the potential negative influence of the school environment on drug abuse behaviour.

Recent studies support this view are Hidayat & Yusuf (2021) reported that schools with strong extracurricular engagement can reduce adolescents' involvement in risky behaviours. According to Latif et al. (2022) found that comprehensive anti-drug programs involving teachers, parents, and students simultaneously are effective in suppressing youth involvement in substance abuse. The last study Marlina (2023) emphasized that the presence of active school counsellors who conduct regular monitoring and preventive counselling plays a crucial role in reducing adolescents' addictive behaviours.

The majority of studies conducted in the past five years indicate that external factors such as peer groups, family conditions, and drug accessibility serve as stronger predictors of substance abuse compared to school-related variables. For example, are Oktaviani et al. (2020) reported that peer association contributes the most to adolescent drug abuse. Siregar et al. (2021) also emphasized that family conflict, permissive parenting, and psychological stress are the most dominant triggers. The current research is Wibowo & Pratiwi (2023) found that access to drugs within the surrounding residential environment exerts a greater influence on substance-use behaviour than school factors.

Recent studies in the field of adolescent developmental psychology emphasize that drug abuse behavior results from the interaction among (a) individual risk factors, (b) peer influences, (c) the quality of family relationships, and (d) the broader social environment. According to the modernized version of Bronfenbrenner's Ecological Development Theory (updated in 2020), the school environment is part of the mesosystem, and its influence tends to weaken when other elements within the microsystem (such as family and peer groups) are more dominant. This perspective supports the findings of the present study.

Given that the present study focuses solely on the school environment variable, it is understandable that the results turned out to be non-significant, as the variables considered to be more

dominant (family, peer groups, and the broader social environment) were not included in the analysis. This represents an important theoretical gap that future research should address.

Because the present study measured only the school environment variable, the non-significant findings become understandable. Variables with greater theoretical dominance peer influence, family relationships, and the broader social environment were not included in the analysis, thereby limiting the explanatory power of the school variable. This represents a significant theoretical gap that future research should address by incorporating a more comprehensive ecological model of adolescent development.

This interpretation is aligned with recent developments in adolescent developmental psychology, which view substance abuse as the result of interactions among individual risk factors, peer dynamics, family relationship quality, and the broader social context. According to the updated 2020 version of Bronfenbrenner's Ecological Development Theory, the school environment is situated within the mesosystem, whose influence tends to weaken when other elements of the microsystem particularly family and peers exert stronger effects. This ecological perspective provides a theoretical foundation supporting the findings of the present study.

Overall, the study contributes to the growing body of literature suggesting that improvements in school regulation, preventive programs, and counseling services have reduced the direct influence of school environments on adolescent drug abuse, while highlighting the need for broader, multi-systemic approaches in future research.

4) CONCLUSIONS

The findings of the study indicate that there is no direct effect of the school environment on drug abuse, suggesting that the school environment does not significantly shape drug-abusing behaviour among adolescents in Makassar. This result provides an important insight, namely that the school environment cannot be relied upon as a consistent predictor of adolescents' drug-abuse behaviour. Nonetheless, the school environment remains relevant as it can contribute to early preventive efforts designed to safeguard young people who have never engaged in drug use from experimenting with drugs.

For adolescents, particularly students the school functions as a key reference point for fostering positive behaviour and reinforcing the importance of avoiding drug-related misconduct. This may be

supported through the implementation of Self-Assertiveness Programmes, which aim to strengthen adolescents' self-regulatory capacities and empower them to refuse drugs.

For schools, the use of a drug-abuse predictive model is recommended as a guiding framework during the student admission process at the secondary level. Incorporating these screening measures during school admissions can help identify students who may be at higher risk and allow schools to intervene early through counselling, education, and targeted preventive programmes.

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