

Original Article

The Psychosocial Status of Children Aged 10-15 and Exposed to Substance Abuse

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Abstract - The study explores the psychosocial status of children aged 10-15 years exposed to substance abuse within an NGO setting in a developing country. Despite the growing body of research on this subject, a critical research gap exists concerning children exposed to substance abuse in low-resource NGO settings, particularly in developing countries. Exposure to substance abuse in children disrupts brain development, leading to cognitive impairments, emotional dysregulation, mental health disorders, social isolation, and decreased academic performance. The study involved 256 children aged 10-15 years, divided into two groups: those exposed to substance abuse (Group 1) and those not exposed (Group 2). A self-imputed questionnaire was administered to assess various aspects of psychosocial well-being. The results indicated insignificant differences between the two groups, with children exposed to substance abuse not exhibiting lower scores in overall well-being. However, this finding underscores the need to further explore why traditional assumptions about lower well-being in such populations do not hold in this context. The chi-square test confirmed a significant association between substance abuse exposure and coping mechanisms. This research provides a novel contribution by filling the gap in the existing literature and examining psychosocial outcomes in NGO-supported children, unlike prior studies focusing on clinical settings. The findings emphasise the need for tailored intervention programs by NGOs to support children exposed to substance abuse. These insights provide a foundation for cultural development.

Keywords - Intervention Programs, NGO, Psychosocial Development, Social Relationships, Substance Abuse

1. Introduction

The psychosocial status of children exposed to substance abuse is a pressing concern globally, particularly in developing countries where the prevalence of substance use disorders is increasing among children, with one significant gap in the literature being the absence of sufficient research in such contexts. With 1-in-8 teenagers abusing an illicit substance in the last year and 50% of teenagers having misused a drug at least once (Teenage Drug Use Statistics [2023]: Data & Trends on Abuse, 2024), this age group is particularly vulnerable. Exposure to substance abuse can disrupt the normal trajectory of brain development, leading to cognitive impairments, emotional dysregulation, increased risk of mental health disorders, social isolation, and decreased academic performance.

Moreover, the absence of adequate support systems and the lack of awareness about substance abuse among children can exacerbate these issues. While the negative impact of substance abuse on children's psychosocial development has been well-documented in high-income countries, a significant research gap exists in low- and middle-income countries,

especially in non-clinical environments such as NGOs where exposure occurs in a non-institutional setting. (Suasnabar & Walters, 2020). Additionally, the existing literature has primarily focused on the psychosocial status of children in clinical settings or those with diagnosed substance use disorders, neglecting the broader context of children exposed to substance abuse indirectly through family or community involvement.

In developing countries, where access to mental health services is limited, NGOs play a crucial role in providing support and interventions for children exposed to substance abuse. However, the effectiveness of these interventions is often hindered by a lack of understanding of the specific psychosocial needs and challenges faced by this population. This study is novel in that it specifically addresses the psychosocial outcomes of children exposed to substance abuse in NGO settings in a developing country, which has not been comprehensively studied. By identifying the specific challenges associated with this population, the study will inform the design of targeted interventions that promote healthy psychosocial development and prevent the long-term negative consequences of substance abuse.



2. Methodology

2.1. Data Collection

The data collection for this study involved administering a self-imputed questionnaire to a sample of 128 children aged 10-15 years, currently living in an NGO and having been personally exposed to substance abuse (Group 1). The same questionnaire was also administered to 128 children not exposed to substance abuse (Group 2), with all other situational variables, such as time spent in the NGO, test administration time, and time of day, carefully controlled to isolate the impact of substance abuse exposure. The questionnaire consisted of 20 questions designed to assess various aspects of psychosocial well-being. The questionnaire was scored using a guide that assigned numerical values ranging from 1-5 to each response based on the level of agreement or disagreement with each statement. The validation of the questionnaire was performed through expert consultation to ensure clarity and relevance.

Cronbach's alpha was used to determine the reliability of the questionnaire, yielding a value of 0.85, indicating high internal consistency. The scores were then summed across all the individual factors to obtain a total score for each participant. This quantitative data was used to analyse the participants' psychosocial status and identify any correlations between the different factors. The choice of a self-imputed questionnaire was based on several key factors: primarily, it allowed for direct input from the children themselves, providing a personalised and subjective insight into their psychosocial well-being. This method also enabled a more confidential participant environment, encouraging honest responses to sensitive topics.

Moreover, this approach aligned with the developmental stage of the children, allowing them to share their personal experiences firsthand. Ultimately, using a self-imputed questionnaire provided a holistic and individualised understanding of each child's psychosocial status, making it the most appropriate tool for this study. To ensure ethical integrity, informed consent was obtained from both the NGO and the participants' guardians, and the proposal received approval from the ethics committee. Each participant was given the choice to voluntarily participate by signing a consent form before completing the questionnaire.

2.2. Variables Measured

The variables measured through this survey included happiness and contentment to assess the participant's overall sense of well-being, satisfaction, and fulfilment; levels of anxiety and stress, which could be related to their experiences with substance abuse; social and interpersonal relationships to examine the quantity and quality of their relationships; coping with resilience, to assess the participant's ability to cope with challenging situations and their level of resilience in the face of adversity; Self-Perception and Future Goals, to assess the participant's self-esteem, self-worth, future goals, and

aspirations. The group exposed to substance abuse is called Group 1, and the group not exposed to substance abuse is called Group 2. The sample size of 256 children was determined based on a power analysis, ensuring sufficient statistical power to detect meaningful differences between the groups at a 90% confidence level. To limit the effect of extraneous variables, this sample was selected from the newest batch, registered on 25th February, to ensure that the time spent at the NGO did not influence results. All questionnaires were administered under identical conditions, including the same time of day, to reduce variability and increase the validity of the findings.

2.3. Data Analysis

The data analysis was performed using the following Python libraries: *factor_analyzer*: Used for factor analysis, and *sklearn.preprocessing.LabelEncoder*: Used for label encoding categorical variables; *pandas*: Used for data manipulation and analysis; *numpy*: Used for numerical computations, *scipy.stats.ttest_ind*: Used for independent t-test, *sklearn.linear_model.LinearRegression*: Used for linear regression modelling, *sklearn.metrics.mean_squared_error*: Used for calculating mean squared error, *sklearn.metrics.r2_score*: Used for calculating the R-squared score, *matplotlib.pyplot*: Used for data visualisation, *seaborn*: Used for statistical data visualisation, *sklearn.cluster.KMeans*: Used for K-means clustering. Prior to analysis, data quality checks were performed to identify and address missing values and outliers. Missing data was handled through imputation using the median values of respective variables, and outliers were assessed using the IQR method.

An overview of the dataset's characteristics was generated using descriptive statistics, revealing a mean score of 71.97 and a standard deviation of 5.54, with minimum and maximum scores of 51 and 81, respectively. Histograms, Box Plots, and Density Plots were used to visualise the distribution of each variable, with the total score of 75 having the highest frequency among all participants. Special attention was given to key variables related to safety, support within the NGO, family environment, and exposure to substance abuse. Factor analysis was conducted to identify the latent factors contributing to the psychosocial status of the children. A Chi-Square Test was applied to examine the relationship between coping mechanisms and substance abuse exposure.

Additionally, regression analysis was used to explore the relationship between psychosocial status and substance abuse exposure. Multiple regression models were tested to account for potential confounders, adjusting for age, gender, and family background. Correlation analysis was performed to assess the relationships between the key psychosocial variables. The five key psychosocial variables analysed included Happiness and Contentment, Anxiety and Stress, Self-Perception and Future Goals, Social and Interpersonal Relationships, and Coping and Resilience.

3. Results

The initial assessment provided an overview of the sample characteristics. The mean psychosocial status score was 71.96 out of a total of 80, with a standard deviation of 5.53. The 25th percentile score was 69, and the 75th percentile score was 76. The mean age for Group 1 was 12.5 years, and the mean age for Group 2 was 11.9 years. Descriptive statistics helped confirm the homogeneity of the groups in terms of age and initial psychosocial characteristics. For the subsets of psychosocial well-being: Happiness and contentment had a mean score of 50 out of a total of 57, with a standard deviation of 4.28. Anxiety and stress had a mean score of 44 out of 52, with a standard deviation of 4. Self-perception and Future goals had a mean score of 13 out of 17, with a standard deviation of 2.3. Social and interpersonal relationships had a mean score of 38 out of 43, with a standard deviation of 3.3. Coping and resilience had a mean score of 23 out of 27, with a standard deviation of 2.7.

The correlation matrix presented in Figure 3 illustrates the relationships between various dimensions of psychosocial status in children aged 10-15 within the NGO context affected by substance abuse. The dimensions analysed include Happiness and Contentment, Anxiety and Stress, Social and Interpersonal Relationships, Coping and Resilience, and Self Perception and Goals. Strong positive correlations between psychosocial aspects, such as happiness, coping, and interpersonal relationships, suggest a robust interdependence between well-being and social factors in this cohort.

Happiness and contentment exhibited a strong positive correlation with Anxiety and Stress ($r = 0.85$), indicating that children who reported higher levels of happiness also reported lower anxiety levels. Strong positive correlations were found between Happiness and Contentment and Social and Interpersonal Relationships ($r = 0.79$) and between Happiness and Contentment and Coping and Resilience ($r = 0.66$). Anxiety and stress also showed a strong positive correlation with Coping and Resilience ($r = 0.75$) and a moderate correlation with Social and Interpersonal Relationships ($r = 0.58$) and Self-Perception and Goals ($r = 0.45$). Social and Interpersonal Relationships exhibited moderate positive correlations with Coping and Resilience ($r = 0.62$), while Coping and Resilience showed a smaller positive correlation with Self-Perception and Goals ($r = 0.12$). These findings highlight the complex interrelationships between emotional well-being, social support, and coping strategies. The interplay between these factors suggests that interventions focusing on improving social and coping skills may positively influence multiple psychosocial outcomes. Factor analysis revealed three main factors influencing the children’s psychosocial status. Safety, support within the NGO, and personal goals for the future showed high loadings on Factor 1, highlighting their close association with happiness and contentment. Effective stress coping strategies and sadness loaded significantly onto Factor 2, indicating their relevance

in managing anxiety and stress. Family environments and relationships had varied loadings across Factors 1, 2, and 3, suggesting their multifaceted impact on both happiness and social integration.

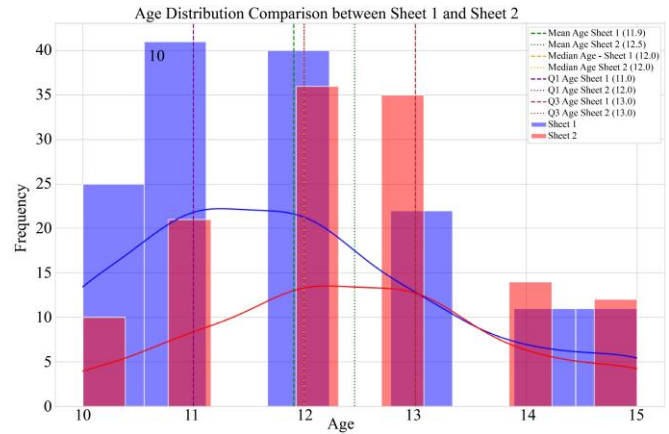


Fig. 1 Age Distribution comparison between group 1 and group 2

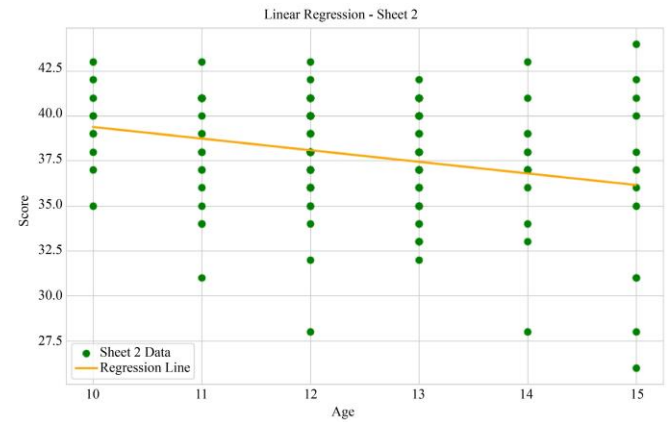


Fig. 2 Correlation matrix of psychosocial aspects

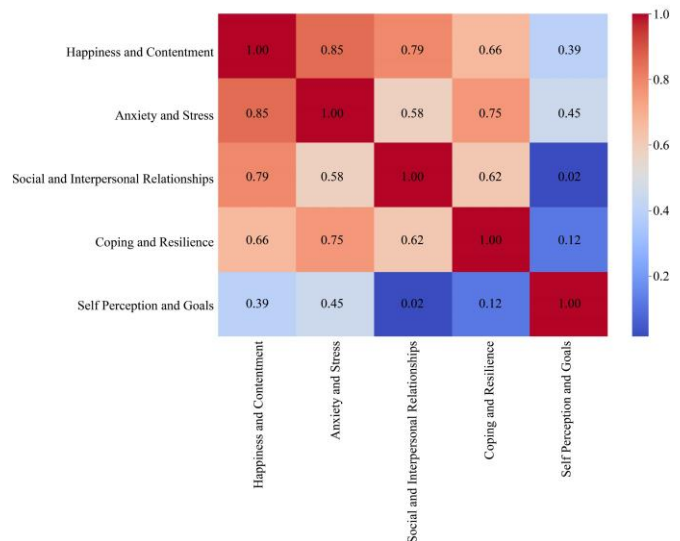


Fig. 3 Factor loadings of survey questions

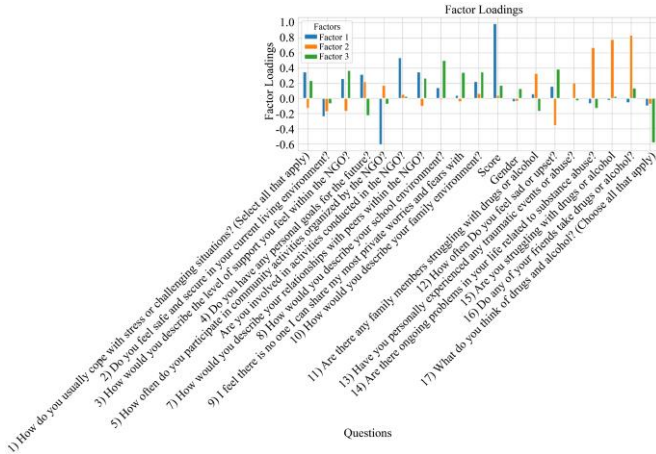


Fig. 4 Linear regression of scores with age

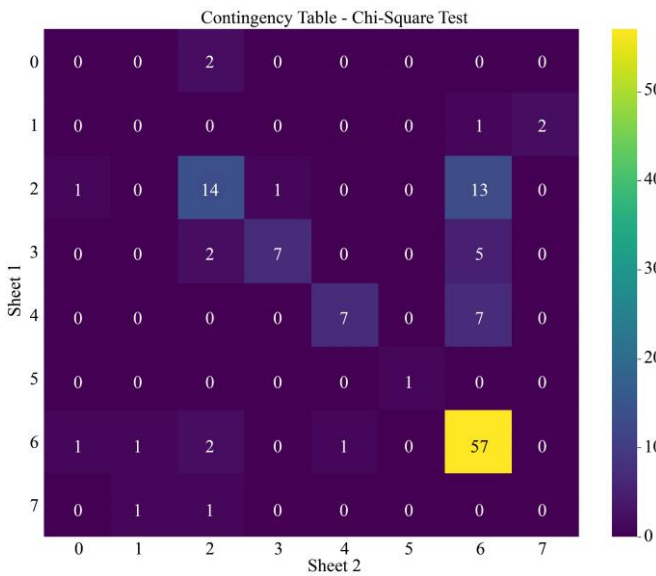


Fig. 5 Chi-Square Test to examine the relationship between Substance Abuse and Coping Mechanisms of Children

The linear regression analysis provided insights into how psychosocial scores varied with age among the children. The regression line had a slight negative slope, indicating that psychosocial scores tended to decrease with age. This suggests that older children in the age range of 10-15 tend to have slightly lower psychosocial scores compared to younger children. The moderate MSE of 10.61 and low R-squared value (0.067) indicate that age alone is not a strong predictor of psychosocial status, accounting for only 6.68% of the variance. This suggests that other factors, such as coping strategies and family environment, may have a larger impact on the psychosocial status of children exposed to substance abuse. Subsequently, null hypothesis testing was performed between Group 1 and Group 2 to determine if substance abuse was a major factor in lowering psychosocial scores. With a p-value of 0.57 and a t-statistic of 0.57, we failed to reject the null hypothesis, indicating no significant difference between the scores of children exposed to substance abuse and those

not exposed. This finding may reflect the effectiveness of NGO interventions in mitigating the negative effects of substance abuse exposure, suggesting that robust support systems can help maintain psychosocial well-being in such environments. The chi-square analysis examined the relationship between children’s exposure to substance abuse and their coping mechanisms. The data was categorised into the following coping strategies: Talking to someone, Engaging in activities (e.g., sports, hobbies), Keeping it to myself, Seeking guidance from mentors, Using creative outlets (e.g., drawing, writing), and Others (please specify). A Chi-Square value of 388.39 indicated a significant difference between the observed and expected frequencies, suggesting an association between exposure to substance abuse and coping mechanisms. The p-value of 0.0000 confirmed this result, leading us to reject the null hypothesis. Children exposed to substance abuse were more likely to “keep it to themselves,” whereas non-exposed children more frequently engaged in activities or sought guidance from mentors. This underscores the need for targeted interventions that encourage healthier coping mechanisms in children exposed to substance abuse.

4. Discussion

The assessment of the sample characteristics revealed a comprehensive overview of the psychosocial status of children aged 10-15 years exposed to substance abuse. The overall mean psychosocial status score of 71.96 indicates a relatively high level of psychosocial well-being within this sample. The distribution of scores, with the 25th percentile at 69 and the 75th percentile at 76, further highlights the general consistency in psychosocial health across the group. The high mean score for Happiness and Contentment suggests that, despite the challenging circumstances, the children exhibit a considerable degree of happiness and contentment. The subset measuring Anxiety and Stress yielded a mean score of 44 out of 52, indicating that while anxiety and stress are present, they are managed relatively well within this group. The mean score of 13 for Self-Perception and Future Goals suggests that children maintain a fairly positive self-image and a clear sense of future aspirations. Social and Interpersonal Relationships scored an average of 38, reflecting strong social connections and interpersonal skills. Coping and resilience, with a mean score of 23, reflect the children’s ability to effectively cope with and bounce back from adversity. These findings emphasise their strengths and areas where support might be beneficial (Kilpatrick et al., 2000). The correlation matrix revealed several noteworthy insights: Happiness and Contentment are significantly correlated with Anxiety and Stress ($r = 0.85$), suggesting that children who report higher levels of happiness and contentment also tend to experience higher anxiety and stress levels. This counterintuitive finding could imply that these children might be experiencing a complex interplay of emotions or that their happiness is not entirely devoid of underlying stress. Anxiety and stress are also strongly correlated with Coping and Resilience ($r = 0.75$), indicating that children who experience higher anxiety and

stress might be developing stronger coping mechanisms and resilience, possibly as a response to their challenging circumstances (Masten, 2001). Social and Interpersonal Relationships strongly correlate with Happiness and Contentment ($r = 0.79$), highlighting the importance of positive social interactions and relationships in contributing to overall happiness in children. Self-Perception and Goals exhibit the weakest correlations across all other dimensions, with the highest being with Anxiety and Stress ($r = 0.45$). This suggests that the children's perception of themselves and their goals might be relatively independent of their happiness, stress levels, social relationships, and coping mechanisms. The factor analysis revealed that multiple psychosocial dimensions are interrelated and contribute to the overall well-being of children exposed to substance abuse.

Specifically, safety, support, and future goals are primary drivers of happiness. Ensuring a secure environment and fostering a sense of purpose is essential. Effective coping mechanisms and emotional support are vital in mitigating anxiety and stress. Regular counselling and stress management programs can be beneficial. Positive self-perception and clear future goals are dual contributors to both reducing stress and enhancing happiness. Interventions such as peer support groups, mindfulness programs, and career-oriented counselling sessions can help children foster these attributes. Good relationships within the NGO and active participation in community activities are crucial for a well-rounded psychosocial status. The presence of robust support systems and effective coping strategies are crucial for building resilience among these children. Interventions should focus on enhancing safety, support, and coping mechanisms while fostering positive self-perception and future orientation. Strengthening social and community bonds also plays a pivotal role in improving the psychosocial status of these children. Cultural factors play a significant role in shaping the psychosocial experiences of children exposed to substance abuse. In collectivist cultures, such as India, family and community bonds are often emphasised, and children may rely more heavily on familial support systems. This could explain why social and interpersonal relationships were strongly correlated with happiness in this study.

Additionally, cultural stigma surrounding mental health and substance abuse may prevent some children from seeking help, further complicating their psychosocial development. Interventions should be culturally sensitive and tailored to the specific norms and values of the population. For example, group-based interventions that emphasise collective support might be more effective in such settings, whereas individual counselling may be less culturally acceptable. A variety of intervention programs already exist that aim to address the psychosocial needs of children exposed to substance abuse. NGO-led initiatives often include counselling services, peer support groups, and community engagement programs to enhance resilience and psychosocial well-being. Programs

such as the "Childline India Foundation" focus on providing immediate support through crisis intervention, while other NGOs run long-term programs focused on building resilience, fostering self-esteem, and encouraging educational aspirations. Some programs also use creative outlets like art therapy and storytelling to help children process their emotions and experiences in a safe environment. Expanding upon these initiatives by incorporating tailored coping strategies can improve the psychosocial outcomes for children in NGO settings. The study controlled for several potential confounders, including age, gender, and time spent at the NGO. However, other unmeasured confounders, such as socioeconomic status, family structure, and the severity of substance abuse exposure, may have influenced the outcomes. Future research should consider these variables in more depth to better isolate the effects of substance abuse exposure on psychosocial well-being. Stratified sampling based on these factors or including them as covariates in regression analyses could improve the accuracy of future studies. While the study provides valuable insights, it is important to acknowledge several limitations. One limitation is the relatively small sample size of 256 children, which may limit the generalizability of the findings. Future studies with larger sample sizes could provide more robust conclusions. Additionally, this study focused exclusively on children in NGO settings, potentially limiting the applicability of findings to children in family or school environments who may face different psychosocial challenges. Another potential limitation is the reliance on self-reported data, which can be subject to social desirability bias, particularly when children are asked sensitive questions about their emotions and family environments.

Future research could incorporate more objective measures, such as observations or reports from caregivers and teachers, to validate the self-reported findings. Future studies should also explore the role of gender and cultural factors in shaping the psychosocial outcomes of children exposed to substance abuse. For example, cultural norms around expressing emotions and seeking help could influence how children cope with stress, which may vary across different cultural contexts. Longitudinal studies that track the psychosocial development of children over time would be beneficial in assessing the long-term impact of exposure to substance abuse and the effectiveness of intervention programs.

5. Conclusion

This research paper highlights critical insights that can guide NGO policies and intervention programs for supporting children aged 10-15 exposed to substance abuse. Policies should prioritise reinforcing and nurturing existing strengths through initiatives that promote safety, support, and future aspirations—key drivers of happiness identified in the findings. To effectively address substance abuse, NGOs must integrate prevention efforts and targeted support services for

children facing these challenges. Educational programs focusing on substance abuse prevention and specialised support for affected children are essential components of these strategies.

Future research should delve into the specific mechanisms through which substance abuse affects psychosocial outcomes in children, identify protective factors

that mitigate these effects, and evaluate the long-term impacts of intervention programs on their well-being.

Additionally, employing qualitative research methods will provide valuable insights into the experiences and perspectives of children and families impacted by substance abuse, enabling the development of more targeted and culturally sensitive intervention strategies.

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