



Problem Behaviours in Children with and Without HIV

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KEYWORDS

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Abstract:

Introduction: Problem behaviours in children represent significant psychological and social concerns in developmental psychology and paediatric care, particularly among those with chronic illnesses. Children living with HIV face unique psychosocial challenges that may contribute to behavioural difficulties. Some of these challenges include chronic illness management, stigma, adherence to treatments, social isolation and discrimination. Understanding the problem behaviours in children with HIV compared to their non-HIV counterparts is crucial for developing appropriate and holistic treatment strategies. Additionally, examining the influence of demographic factors such as age and gender can inform comprehensive and targeted interventions.

Objectives:

1. To assess and compare the frequency and intensity of problem behaviours in children living with and without HIV.
2. To determine the association of demographic factors with frequency and intensity of problem behaviours in both groups.

Materials and methods: The study sample consisted of 62 children (31 with HIV and 31 without HIV) aged 7-13 years from Belagavi City, selected using convenience sampling method. Problem Behaviours Survey Schedule was used for assessment. Demographic variables were also recorded.

Statistical Analysis: Percentage method, Chi-Square test and Mann-Whitney U Test were applied.

Results: Results revealed that problem behaviours were significantly higher in children living with HIV (Mean=11.42; SD=5.20) compared to children without HIV (Mean=6.06; SD=2.92). Age and gender were not significantly associated with problem behaviours in either group.

Conclusion: Children with HIV reported significantly higher levels of problem behaviours. Demographic factors are not found to be significantly associated with problem behaviours in either group.

3. Introduction

Childhood is a critical developmental period where physical, cognitive, emotional and social growth occurs simultaneously. During this phase, children are particularly vulnerable to various stressors such as maltreatment, family dysfunction, parental conflict, exposure to violence and others that can manifest as problem behaviours affecting their overall development and quality of life.¹ Development becomes a much more

complex process when accompanied by challenges such as chronic illnesses, leading to worsening of problems.

Problem behaviours in children encompass a range of externalizing and internalizing symptoms including aggression, violence, social withdrawal, self-injurious and rebellious behaviours. These behaviours not only impact the child's immediate functioning but can also have long-term consequences on academic performance, social relationships and psychological



well-being.² These consequences remain a significant challenge in children living with chronic illness as they are at a heightened vulnerability. Among chronic illnesses, HIV/AIDS continues to be a major global health concern, with paediatric HIV presenting unique challenges that extend beyond medical management. HIV positive children face problems including chronic illness management, stigma, discrimination and neurocognitive effect of the virus. These factors make them vulnerable and problem behaviour may emerge as manifestation of psychological distress.³

Problem behaviours in children can be characterized both by their frequency and intensity. Frequency refers to the rate at which problem behaviours manifest, while intensity refers to the severity of these behaviours.⁴ Studying problem behaviours in children with and without HIV is essential as it allows for a comparative understanding of whether HIV status itself serves as an independent risk factor for behavioural difficulties, beyond other factors common to both groups. Thus, early identification and management of these behaviours can prevent further escalation into more severe problems in later part of life, making this research crucial.

Understanding the role of demographic factors in problem behaviours plays an important role as it helps identify whether certain demographic characteristics are more vulnerable to behavioral difficulties and provides insights into the developmental trajectory of problem behaviours in children with HIV. Previous studies have provided mixed findings regarding the association of age and gender with problem behaviours in children with HIV.⁵ The current study is undertaken with the aim of providing insight into developing targeted interventions that address the specific needs of HIV-positive children. The findings of this study will be crucial for developing strategies that can inform and guide caretakers, researchers, psychologists and educators.

4. Objectives

1. To assess and compare the frequency and intensity of problem behaviours in children living with and without HIV.
2. To determine the association of demographic factors with frequency and intensity of problem behaviours in both groups.

5. Methods

Research Design: Comparative study

Sampling Technique: Convenience sampling

Sample size: A sample of 62 children—31 with HIV, living in care homes (NGOs) and 31 without HIV from schools in Belagavi City.

Measures used: Problem Behaviours Survey Schedule (PBSS) by Dr. S. Venkatesan

Procedure: Following ethical clearance from the Jawaharlal Nehru Medical College Ethics Committee for Human Subjects' Research, along with necessary permissions from the authorities of the concerned care homes (NGOs) and educational institutions, written informed consent was obtained from children's parents and legal guardians. PBSS was administered on parents of children without HIV and caregivers of children with HIV to gather data on child's behaviours. Clear instructions were given by the researcher and doubts were cleared. Questionnaires were collected back after completion. Data was later scored and entered into MS Excel for statistical analysis.

Statistical Analysis: Descriptive statistics and Percentage method were applied to find out the level of problem behaviours. The Chi-Square test was used to examine the association between variables. Mann-Whitney U Test was utilized to compare the scores of two groups.

6. Results

Development of children is a complex process that includes the biological, psychological, social and emotional aspects, for children living with chronic illnesses like HIV, this process is further complicated by the burden of illness management and social stigma.⁶ Problem behaviours are common indicators of psychological distress in childhood.⁷ In this context, the present study was undertaken to examine the differences in problem behaviours between children with and without HIV.

The findings of results related to objective 1 are presented in table 1 and discussed as follow

**Table 1: Showing the frequency of problem behaviours in children living with and without HIV**

Frequency	With HIV	%	Without HIV	%	Total	%
Normal	2	6.45	12	38.71	14	22.58
Mild	2	6.45	8	25.81	10	16.13
Moderate	6	19.35	6	19.35	12	19.35
Severe	3	9.68	3	9.68	6	9.68
Clinical	18	58.06	2	6.45	20	32.26
Total	31	100.00	31	100.00	62	100.00
Chi-square=23.5430, P=0.0001*						

*p<0.05

Table 2: Showing the intensity of problem behaviours in children living with and without HIV

Intensity	With HIV	%	Without HIV	%	Total	%
Normal	10	32.26	27	87.10	37	59.68
Mild	3	9.68	2	6.45	5	8.06
Moderate	7	22.58	1	3.23	8	12.90
Severe	3	9.68	0	0.00	3	4.84
Clinical	8	25.81	1	3.23	9	14.52
Total	31	100.00	31	100.00	62	100.00
Chi-square=20.9550, P=0.0001*						

*p<0.05

Table 3: Showing the comparison of Problem behaviour between children living with and without HIV

Group	Mean	SD	Mean rank	U-value	Z-value	P-value
With HIV	11.42	5.20	41.52	170.00	4.3644	0.0001*
Without HIV	6.06	2.92	21.48			

*p<0.05



Table 4: showing the association of age groups with the frequency and intensity of problem behaviours in children with HIV.

Age groups	<=7yrs	8-9yrs	10-11yrs	12-13yrs	Total	%	χ^2	p-value
Frequency of PB								
Normal	1	5	5	1	12	38.71	4.0810	0.3950
Mild	0	5	3	0	8	25.81		
Moderate	0	2	2	2	6	19.35		
Severe	0	1	0	2	3	9.68		
Clinical	0	0	2	0	2	6.45		
Intensity of PB								
Normal	1	13	10	3	27	87.10	2.0620	0.5600
Mild	0	0	0	2	2	6.45		
Moderate	0	0	1	0	1	3.23		
Severe	0	0	0	0	0	0		
Clinical	0	0	1	0	1	3.23		

Table 5: showing the association between age groups with frequency and intensity of problem behaviour in children without HIV

Age groups	<=7yrs	8-9yrs	10-11yrs	12-13yrs	Total	%	χ^2	p-value
Frequency of PB								
Normal	0	1	0	1	2	6.45	6.5880	0.8840
Mild	0	1	0	1	2	6.45		
Moderate	0	1	3	2	6	19.35		
Severe	0	1	1	1	3	9.68		
Clinical	3	6	6	3	18	58.06		
Intensity of PB								
Normal	0	3	3	4	10	32.26	12.1840	0.4310
Mild	0	1	1	1	3	9.68		
Moderate	0	3	4	0	7	22.58		
Severe	1	1	1	0	3	9.68		
Clinical	2	2	1	3	8	25.81		



Table 6: showing the association of gender with frequency and intensity of problem behaviours in children with

Gender	Male	%	Female	%	Total	%	χ^2	p-value
Frequency of PB								
Normal	1	50.00	1	50.00	2	6.45	5.2420	0.2630
Mild	1	50.00	1	50.00	2	6.45		
Moderate	6	100.00	0	0.00	6	19.35		
Severe	1	33.33	2	66.67	3	9.68		
Clinical	10	55.56	8	44.44	18	58.06		
Intensity of PB								
Normal	8	80.00	2	20.00	10	32.26	7.1210	0.1300
Mild	1	33.33	2	66.67	3	9.68		
Moderate	6	85.71	1	14.29	7	22.58		
Clinical	3	37.50	5	62.50	8	25.81		

HIV

Table 7: showing the association of gender with frequency and intensity of problem behaviours in children without HIV

Gender	Male	%	Female	%	Total	%	χ^2	p-value
Frequency of PB								
Normal	4	33.33	8	66.67	12	38.71	4.0810	0.3950
Mild	6	75.00	2	25.00	8	25.81		
Moderate	4	66.67	2	33.33	6	19.35		
Severe	2	66.67	1	33.33	3	9.68		
Clinical	1	50.00	1	50.00	2	6.45		
Intensity of PB								
Normal	15	55.56	12	44.44	27	87.10	2.0620	0.5600
Mild	1	50.00	1	50.00	2	6.45		
Moderate	1	100.00	0	0.00	1	3.23		
Clinical	0	0.00	1	100.00	1	3.23		



7. Discussion

Development of children is a complex process that includes the biological, psychological, social and emotional aspects, for children living with chronic illnesses like HIV, this process is further complicated by the burden of illness management and social stigma.⁶ Problem behaviours are common indicators of psychological distress in childhood.⁷ In this context, the present study was undertaken to examine the differences in problem behaviours between children with and without HIV.

The findings of results related to objective 1 are presented in table 1 and discussed as follow.

Results presented in the preceding table show that the frequency of problem behaviours differs markedly between the groups. Among children living with HIV (CLWHIV), 58.06% of them had clinical frequency of problem behaviours that are significant enough to interfere with daily functioning, academic performance and social relationships, requiring professional intervention and support; while only 6.45% of participants without HIV experienced clinical frequency of PB.

Severe frequency of PB was found to be equal in both groups at 9.68% while moderate frequency was observed in 19.35% of participants in both groups, showing identical proportions. Mild frequency was reported by 6.45% children with HIV and 25.81% children without HIV. The normal frequency of PB was seen more in the participants without HIV (38.71%) than with HIV (6.45%). A chi-square value of 23.543 was obtained at a significance level of $p=0.0001$, indicating a statistically significant difference in frequency of PB between children with and without HIV. Therefore, further assessment, evaluation and assistance is advised for children with HIV.

Table 2: Pertaining to the results presented of this table, 25.81% of CLWHIV had clinical intensity of problem behaviours while participants without HIV only accounted for 3.23%. Severe intensity was found only in 9.68% children with HIV and in their counterparts. Moderate intensity was observed to be 22.58% in CLWHIV as compared to 3.23% in the other group; 9.68% children with HIV reported mild intensity in contrast to 6.45% in the without HIV group. The normal

intensity of PB was noted in 32.26% children with HIV and 87.10% in the non-HIV group. The obtained chi-square and the p-value ($\chi^2 =20.9550$, $P=0.0001$) indicated a highly significant difference the intensity of problem behaviours between the two groups.

These results collectively demonstrate that children with HIV demonstrated substantially higher and clinically significant frequent and intensive problem behaviours compared to their counterparts. Reasons for this may be attributed to multiple factors such as discrimination, disease progression, treatment adherence, social support, death of parents due to the illness, abandonment by relatives, adverse childhood experiences and lack of individualized care. These findings are consistent with the broader literature on psychosocial functioning of children living with HIV, which revealed that HIV positive children exhibit elevated behavioural symptoms.⁸

In addition to this, researchers also examined whether there existed significant differences in the overall problem behaviours between children with and without HIV. Results are presented in table 3.

The results in the preceding table show that the mean score of Problem behaviour for children living with HIV was 11.42 and 6.06 for children without HIV with respective Standard deviations 5.20 and 2.92. The comparison of mean scores of the two groups indicate that problem behaviours were more pronounced in children with HIV compared to those without HIV. The calculated Z-value is 4.3644 with the obtained p-value of 0.0001, which indicated a highly significant difference in PB between the two groups.

Results pertaining to second objective are presented in table 4.

With reference to table 4, the highest normal frequency of problem behaviours was observed in the age groups of 8-11 years in children living with HIV. Mild frequency was observed mostly in the age group of 8-9 years followed by 10-11 years. Mild to clinical frequency was not demonstrated by children in the age group of less than 7 years, this pattern was not observed in any other age group. Moderate frequency was observed in the age groups of 8-13 years, showing relatively equal distribution across these groups. Severe frequency was noted in the age groups of 8-9 years and 12-13 years.



Only two participants reported clinical frequency of problem behaviours, in the age group of 10-11 years. The calculated chi-square value of 4.081 with a p-value of 0.395 indicated that there was no significant association of age with the frequency of problem behaviours in children living with HIV.

Regarding intensity, the majority of participants from the age group of 8-9 years followed by 10-11 years demonstrated normal intensity of problem behaviours. The age group of less than 7 years showed only normal intensity. Among all age groups, clinical and moderate intensity of problem behaviours were observed only in participants of 10-11 years. Mild intensity was found exclusively in the age group of 12-13 years. The calculated chi-square value of 2.062 and p-value of 0.560 indicated that there was no significant association of age with the intensity of problem behaviours in children living with HIV.

In reference to the results presented in table 5, the highest clinical frequency of problem behaviours was observed in the age groups of 8-11 years, followed by the age groups of ≤ 7 years and 12-13 years. Moderate frequency was predominantly found in the 10-11 years age group, followed by 12-13 years and 8-9 years. Severe frequency was distributed relatively evenly across the age groups of 8-13 years. Mild frequency was observed in age groups of 8-9 years and 12-13 years. Normal frequency was noted in the 8-9 years and 12-13 years age groups.

The obtained chi-square value of 6.588 and a p-value of 0.884 indicated that there was no significant association of age with the frequency of problem behaviours in children without HIV.

Concerning intensity, normal intensity was most commonly observed across all age groups, with the highest representation in the 12-13 years age group, followed by 8-9 years and 10-11 years. Clinical intensity was most prevalent in the age group of 12-13 years, followed by the age groups of 8-9 years and ≤ 7 years, and 10-11 years. Moderate intensity was notably found in participants from the age group of 10-11 years, followed by 8-9 years. Severe intensity was observed to be relatively equal in the age groups of ≤ 7 to 11 years.

The calculated chi-square value of 12.184 with a p-value of 0.431 indicated that there was no significant

association of age with the intensity of problem behaviours in children without HIV.

The analysis found no significant association between age and the frequency and intensity of problem behaviours either in the group of children with HIV or without HIV. This indicates that, in this specific context, a child's age was not associated with the observed behavioural problems. This result aligns with the research of Bachanas et al. (2001), where it was reported that age was not associated with psychosocial adjustment problems, especially in the context of chronic illnesses.⁹

The data presented in table 6 clearly demonstrates that the majority of male participants (55.56%) demonstrated clinical frequency of problem behaviours, followed by 44.44% females, 66.67% female participants expressed severe frequency of PB, which was notably more in females than in males. Moderate frequency of problem behaviours was observed only in the male category (100%). Mild and normal frequencies were observed equally in both male and female groups (n=1 in each).

A computed chi-square value of 5.242 with a corresponding p-value of 0.263 indicated that gender was not significantly associated with the frequency of problem behaviours.

Regarding the intensity, normal intensity of problem behaviours was predominantly observed in 80% male children compared to females (20%). Mild intensity was noticed more in females (66.67%) than males (33.33%). Moderate intensity of PB was more common in males (85.71%) compared to females (14.29%). Clinical intensity was noted more in females (62.50%) than males (37.50%). The calculated chi-square and p-value ($\chi^2 = 7.1210$, $p = 0.1300$) indicated that no significant association was noticed between gender and intensity of problem behaviours in children living with HIV.

Examination of the frequency of problem behaviours gender wise among children without HIV demonstrated that normal frequency was observed more commonly in females (66.67%) than males (33.33%). Mild frequency appeared more commonly in males (75%) compared to females (25%). Moderate and severe frequencies were seen in 66.67% males and in 33.33% females; while clinical frequency was seen equally in



male and female children (50% in each category). The calculated chi-square value of 4.081 with a p-value of 0.395 revealed that there was no significant association of gender with the frequency of problem behaviours in children without HIV.

Referring to intensity, normal intensity was the most commonly observed in both males (55.56%) and females (44.44%) followed by Mild intensity similarly in males and females (50% in each category). Moderate intensity was found exclusively in males while clinical intensity was observed only in females. The calculated chi-square value of 2.062 with a p-value of 0.560 demonstrated no significant association of gender with the intensity of problem behaviours in these children.

Above results indicate that gender was not significantly associated with the frequency or intensity of problem behaviours in either group. This finding is consistent with several key studies indicating that the gender was not closely associated with behavioural outcomes.¹⁰ Kalembo et al. (2019)

Although children with HIV clearly demonstrated higher problem behaviours, the findings of the second objective suggest that these demographic variables were not associated with problem behaviours. These findings are consistent with several key studies indicating that the psychological and social stressors faced by children such as stigma, family dynamics, lack of social support are more strongly associated with behavioural outcomes than age or gender.¹¹ Jantarabenjakul et al. (2020)

8. Conclusion:

1. Children living with HIV exhibit significantly higher frequency and intensity of problem behaviours than children without HIV.
2. Demographic factors of the study have no significant association with the frequency and intensity of problem behaviours.

Limitations:

1. The study was conducted with a relatively limited sample size which may limit the generalizability of findings.
2. The study was restricted to Belagavi City and population of children.

Suggestions:

1. Routine screening for psychological concerns should be made an integral part of paediatric HIV care.
2. Mental health services, including counselling and therapy, should be made accessible to HIV-positive children and their families/care takers.
3. Future studies should include larger, more diverse samples from multiple geographical regions.

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