RESEARCH PAPER

Institutional Factors and Barriers Associated with Mental Health Service Availability in Selected Orphanages in Tamil Nadu: A Cross-Sectional Study

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ABSTRACT

Background: Children residing in orphanages are particularly vulnerable to mental health problems because of exposure to parental loss, emotional deprivation, disrupted attachment, neglect, and adverse childhood experiences. Despite their increased psychosocial vulnerability, evidence regarding the availability of mental health services within institutional care settings in India remains limited. This study assessed the availability of mental health services, institutional determinants, and barriers affecting access to mental healthcare among orphanages in Tamil Nadu. **Methods**: A cross-sectional study was conducted among 118 orphanages across selected rural and urban districts of Tamil Nadu between October 2024 and September 2025. Institutions were selected using purposive sampling. Data were collected using a structured and pre-validated questionnaire administered to institutional representatives. Information regarding institutional characteristics, mental health service availability, institutional capacity, and barriers to mental healthcare access was obtained. Descriptive statistics, chi-square tests, and binary logistic regression analyses were performed to identify factors associated with mental health service availability. **Results**: Among participating orphanages, 77.1% were located in urban areas and 78.0% were NGO-operated institutions. Mental health professionals were available in 50.8% of institutions. Counselling and psychotherapy services were each available in 43.2% of institutions, while psychiatric consultation and group therapy were available in 31.4% and 17.8% of institutions, respectively. Urban institutions demonstrated significantly greater mental health service availability than rural institutions ($p<0.001$). Institutions with trained staff, educational facilities, vocational training, and mental health professionals reported significantly greater service availability. In adjusted regression analysis, staff training remained independently associated with mental health service availability (AOR: 19.29; 95% CI: 3.80–97.89; $p<0.001$). Cost-related barriers, lack of resources, and distance-related barriers were commonly reported.

Conclusion: Mental health service availability within orphanages in Tamil Nadu remains limited and uneven. Strengthening institutional workforce capacity, integrating routine psychosocial support within child care systems, and improving linkage with public mental health services may help improve access to mental healthcare among orphaned children.

Keywords: orphanages; child mental health; institutional care; psychosocial services; mental healthcare access; Tamil Nadu.

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INTRODUCTION

Mental health is an essential component of child and adolescent health and substantially influences emotional regulation, cognitive development, educational attainment, interpersonal functioning, and long-term well-being. The World Health Organization estimates that nearly one in seven adolescents globally experiences a mental disorder, with depression, anxiety, and behavioural disorders representing major contributors to disease burden among young people [1]. Mental health conditions originating during childhood frequently persist into adulthood and are associated with impaired psychosocial functioning, substance use, reduced productivity, and increased risk of self-harm and suicide [1,2]. Despite increasing global recognition of child and adolescent mental health as a public health priority, access to appropriate mental health services remains inadequate in many low- and middle-income countries (LMICs), where structural limitations, insufficient workforce capacity, stigma, and limited policy implementation continue to restrict service delivery [3].

Among vulnerable pediatric populations, orphaned and institutionalized children represent a particularly high-risk group due to exposure to adverse childhood experiences, parental loss, emotional deprivation, disrupted attachment, neglect, and socioeconomic insecurity [4,5]. Globally, an estimated 24 million children live without parental care, including approximately 8–10 million residing in institutional care settings such as orphanages and child care institutions [6]. Although institutional care systems are designed to provide shelter, protection, and educational support, evidence suggests that children raised in

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institutional environments frequently demonstrate poorer emotional and psychosocial outcomes than those raised in family-based settings [5,7]. The absence of stable caregiving relationships and individualized psychosocial support may adversely affect emotional development, behavioural regulation, and social adaptation [7,8].

Previous studies have consistently reported elevated prevalence of depression, anxiety, behavioural disorders, emotional dysregulation, and trauma-related symptoms among institutionalized children [9–11]. A systematic review by van IJzendoorn et al. demonstrated significant developmental and psychosocial disadvantages among children living in institutional care compared with community-based populations [7]. Similarly, studies conducted in LMICs have documented substantial levels of psychological morbidity among orphaned children, often associated with social exclusion, inadequate psychosocial support, and restricted access to specialized mental healthcare [9,10]. Indian studies have also reported considerable psychological distress among orphaned children, including symptoms of anxiety, depression, low self-esteem, and behavioural difficulties [11,12]. These psychological vulnerabilities may persist throughout adolescence and adulthood in the absence of timely intervention and appropriate psychosocial support systems.

India has one of the largest child and adolescent populations globally, comprising nearly 436 million individuals below 18 years of age [13]. However, mental healthcare infrastructure for children and adolescents remains substantially underdeveloped. The National Mental Health Survey of India reported a treatment gap ranging from 70% to 92% for mental disorders, indicating that a large proportion of individuals requiring mental healthcare do not receive appropriate treatment [14]. The shortage of mental health professionals remains a major challenge, with India having significantly fewer psychiatrists, psychologists, and psychiatric social workers than recommended by international standards [15]. Mental health services are predominantly concentrated in urban tertiary-care centres, whereas rural and resource-limited settings continue to experience inadequate service availability, weak referral mechanisms, and poor integration of mental health into routine healthcare systems [16].

Children residing in orphanages may be disproportionately affected by these systemic gaps because of their increased need for psychological support and early mental health intervention. Although the Juvenile Justice (Care and Protection of Children) Act and Mission Vatsalya emphasize child welfare and institutional support mechanisms, mental healthcare integration within orphanages and child care institutions remains inconsistent across India [17]. Existing institutional services primarily focus on shelter, nutrition, education, and physical protection, while structured mental health services frequently receive limited attention [18]. Many institutions lack trained counsellors, mental health professionals, referral systems, and staff capacity to identify and manage psychological distress among children [19,20]. Consequently, mental health conditions among institutionalized children may remain under-recognized and untreated.

Urban–rural disparities further influence access to mental healthcare services in India. Urban regions generally demonstrate better availability of healthcare infrastructure, specialist consultation services, counselling facilities, and referral networks compared with rural areas [16]. In contrast, rural institutions often face shortages of trained personnel, transportation barriers, financial constraints, and reduced mental health awareness [21]. Sociocultural stigma associated with mental illness may additionally influence help-seeking behaviour and service utilization, particularly within underserved communities [21].

Most existing Indian literature has focused on the prevalence of psychiatric disorders among children and adolescents in schools or community settings, with comparatively limited attention to institutional determinants affecting mental healthcare availability in orphanages [13,22]. Furthermore, previous studies have primarily emphasized psychological outcomes among institutionalized children rather than evaluating the availability and accessibility of mental health services within child care institutions themselves. Understanding institutional capacity, including trained staff availability, counselling services, psychiatric consultation mechanisms, educational support systems, and referral pathways, is essential for strengthening child mental healthcare delivery within institutional settings.

The present study was therefore conducted to assess the availability of mental health services among orphanages in Tamil Nadu, identify institutional determinants associated with service availability, evaluate barriers affecting access to mental healthcare, and compare urban–rural differences in mental health service provision across child care institutions.

METHODOLOGY

Study Design

This study used a cross-sectional descriptive approach to analyze and compare the availability of mental health services for orphaned children in Tamil Nadu's rural and urban areas. A total of 118 institutions were included in the study for public health research focusing on service delivery and access because it allows for the investigation of correlations between institutional characteristics, service capability, and barriers within the study population. In this study, significant variables included institutional features (such as the kind of institution and the number of children), service capacity indicators (such as the availability of trained staff and counselling services), and barriers to mental health care access.

Study Setting

The study was conducted in selected orphanages across urban and rural districts of Tamil Nadu, India. Urban settings included major cities such as Chennai, Coimbatore, and Tiruchirappalli, which are characterized by better infrastructure and access to healthcare facilities. Rural

settings included districts such as Nagapattinam, Ramanathapuram, and Kanyakumari, where access to specialized mental health services is relatively limited.

These institutions varied in type, including non-governmental organizations (NGOs), private institutions, and government-run homes. The study was carried out from October 2024 to September 2025.

Study Population

The study population comprised registered orphanages operating within selected urban and rural districts of Tamil Nadu, with the institution considered as the unit of analysis. Eligible institutions included those that were officially registered, operational during the study period, and provided consent to participate. Institutions that were temporarily closed at the time of data collection or those that declined participation were excluded from the study.

Sampling Technique

A purposive sampling technique was employed to select institutions for the study. This approach was chosen due to the limited availability of a comprehensive sampling frame of orphanages and the need to include institutions that met specific eligibility criteria. Additionally, logistical constraints and accessibility considerations necessitated the use of a non-probability sampling method. Efforts were made to ensure representation from both urban and rural settings by selecting institutions across multiple districts. Although purposive sampling limits generalizability, it is appropriate for exploratory studies focusing on specific populations such as orphanages. A comprehensive record of the number of institutions approached was not maintained; however, all eligible and accessible institutions during the study period were included. (Figure 1)

Sample Size Calculation

The sample size was calculated using Cochran's formula for estimating proportions:

$$n = \frac{Z^2 \times p \times (1-p)}{d^2}$$

Here, n represents the required sample size. Z denotes the standard normal deviate corresponding to a 95% confidence level, which was taken as 1.96. p represents the estimated proportion of institutions with available mental health services; since no prior estimate was available, it was assumed to be 0.5. d represents the margin of error, which was set at 0.05.

Substituting the values:

$$n = \frac{(1.96)^2 \times 0.5 \times (1-0.5)}{(0.05)^2} = 384$$

The sample size was initially estimated using Cochran's formula (n=384). However, due to the absence of a comprehensive sampling frame and feasibility constraints, purposive sampling was employed, and 118 eligible orphanages were included in this study.

Data collection

Data were collected using a structured, pre-validated questionnaire developed specifically for this study to assess institutional characteristics, availability of mental health services, service capacity, and barriers to access. The tool was designed following an extensive review of relevant literature on child mental health, institutional care systems, and public health service delivery.

The questionnaire comprised four major sections: (1) institutional characteristics (such as location, type of institution, and number of children), (2) availability of mental health services, (3) institutional capacity indicators (including staff training, educational and vocational support), and (4) perceived barriers to accessing mental health services. Prior to the study, a pilot test was conducted with a sample (n=11) institution that were not included in the final analysis to evaluate the clarity, relevance, and feasibility of the instrument. Based on feedback obtained during the pilot phase, necessary modifications were made to improve the language, structure, and sequence of questions. Content validity of the questionnaire was established through expert review by professionals in public health and mental health, ensuring that all relevant domains were adequately covered.

A list of eligible orphanages was compiled using available administrative records and local sources. Institutional authorities were approached formally, and the objectives and procedures of the study were explained. Written informed consent was obtained from authorized representatives prior to participation.

Data collection was carried out through direct interviews with designated institutional representatives, such as administrators or senior staff members who were knowledgeable about institutional operations and service provision. The questionnaire was administered in a standardized manner across all study sites to ensure consistency. Clarifications were provided when necessary to facilitate accurate responses.

To ensure data quality, all completed questionnaires were reviewed on the same day for completeness and internal consistency. Any missing or unclear responses were verified through follow-up visits or telephonic communication with the respective institutions. Data were subsequently coded using predefined coding schemes and entered into Microsoft Excel to minimize entry errors. Standardized operational definitions were applied across all variables to ensure uniform interpretation and reduce information bias. Efforts were also made to obtain information from reliable institutional records wherever available, thereby enhancing the accuracy of the data collected. Confidentiality was strictly maintained throughout the study. No identifying information of institutions or individuals was recorded. All data were securely stored and accessed only by members of the research team.

Outcome variable

The primary outcome variable of this study was the availability of mental health services within the institution. This was treated as a binary variable and categorized as "Yes" or "No." An institution was considered to have

availability of mental health services if it provided access to at least one form of mental health support, including services from a qualified psychologist or psychiatrist or structured counselling services either within the institution or through referral linkages. Institutions that did not report any such services were categorized as not having mental health services. This operational definition was used consistently across all study sites to ensure uniformity in classification.

Independent variables

The independent variables included selected institutional characteristics that were hypothesized to influence the availability of mental health services.

1. Residence location was categorized as urban or rural based on the geographical location of the institution as per administrative classification.
2. The type of institution was classified into three categories: non-governmental organizations (NGOs), private institutions, and government-run homes.
3. Staff training was defined as the presence of staff members who had received formal training in child mental health, counselling, or related psychosocial care. This variable was categorized as "Yes" or "No."
4. Vocational training referred to the availability of structured skill-based training programs aimed at improving the future employability of children residing in the institution. This was recorded as a binary variable.
5. Educational facilities were defined as the provision of formal education support, either within the institution or through enrolment in external schools, and were categorized as "Yes" or "No."

All independent variables were selected based on their conceptual relevance and evidence from prior literature suggesting their potential influence on institutional capacity to provide mental health services.

Statistical Analysis

Statistical analyses were conducted to examine institutional characteristics, barriers to access, and factors associated with mental health service availability among participating institutions. Descriptive statistics were used to summarize all categorical variables, including residence location, type of institution, availability of mental health professionals, staff training, educational and vocational facilities, and service components. Frequencies and percentages were reported, along with 95% confidence intervals to reflect the precision of estimates.

Bivariate analysis was performed to assess associations between institutional characteristics and mental health service availability. Cross-tabulations were generated, and column percentages were used to compare distributions across categories such as rural–urban residence and institutional types. The Chi-square (χ^2) test of independence was applied to evaluate statistical significance. In instances where expected cell counts were small, appropriate corrections (e.g., Fisher's exact test) were considered. A p-value of <0.05 was regarded as statistically significant.

To identify factors independently associated with mental health service availability, binary logistic regression analysis was performed. The dependent variable was dichotomous (mental health service availability: yes/no). Separate models were constructed to examine (i) institutional capacity factors, (ii) barriers to access, and (iii) sociocultural factors such as stigma, as reflected in the analytical tables. Crude odds ratios (ORs) with 95% confidence intervals (CIs) were first estimated to assess unadjusted associations. Subsequently, multivariable logistic regression models were fitted to obtain adjusted odds ratios (AORs), controlling for relevant covariates. Reference categories were defined a priori for all independent variables.

Model adequacy was assessed using standard diagnostic procedures. Multicollinearity among independent variables was examined using the variance inflation factor (VIF). The Hosmer–Lemeshow goodness-of-fit test was used to evaluate model fit, and a non-significant p-value indicated adequate fit. All statistical tests were two-tailed, and results were reported as ORs with 95% CIs. Statistical significance was determined at $p<0.05$.

Ethical Considerations

Ethical approval for the study was obtained from the Institutional Ethics Committee of the author's institution prior to the commencement of data collection (NIMSUR/IEC/2024/1227). The study was conducted in accordance with the ethical principles of the Declaration of Helsinki and complied with applicable national guidelines for research involving human participants. Administrative permission was obtained from the relevant authorities of all selected institutions, and the objectives and procedures of the study were clearly explained prior to participation. Informed consent was obtained from authorized institutional representatives, and participation was entirely voluntary, with the option to withdraw at any stage without any consequences. No coercion or undue influence was exerted during recruitment or data collection. Strict measures were implemented to ensure confidentiality and anonymity, with no personally identifiable or institution-specific information collected or reported; all data were de-identified prior to analysis and securely stored with access restricted to the research team. As the study involved institution-level data without direct interaction with children or vulnerable individuals, it posed minimal to no risk to participants, and all data were used solely for research purposes.

RESULTS

Among the 118 participating orphanages, 77.1% were located in urban areas and 22.9% in rural settings. NGO-operated institutions constituted the largest proportion of participating orphanages (78.0%), followed by privately managed institutions (20.3%) and government-run institutions (1.7%). Mental health professionals were available in approximately half of the

institutions (50.8%). Regarding institutional service readiness, 36.4% reported staff training related to mental healthcare, 49.2% had educational facilities, 37.3% provided vocational training, and 47.5% supported continued education (Table 1). The overall pattern of institutional readiness and service gaps is presented in Figure 2A.

Table 1. Institutional Characteristics and Mental Health Service Capacity of Participating Orphanages in Tamil Nadu

Institutional Characteristics of Participating Institutions				
Variable	Category	N=118	%	95% CI
Residence location	Rural	27	22.9%	15.7-31.5
	Urban	91	77.1%	68.5-84.4
Type of institution	NGO	92	78%	69.4-85.1
	Private	24	20.3%	13.5-28.7
	Government	2	1.7%	0.2-6.0
Mental health professionals Available	Yes	60	50.8%	41.5-60.2
	No	58	49.2%	39.8-58.5
Mental Health Service Capacity in Institutions				
Staff training	Yes	43	36.4%	27.7-45.1
	No	75	63.6%	54.9-72.3
Educational facilities	Yes	58	49.2%	40.2-58.2
	No	60	50.8%	41.8-59.8
Vocational training	Yes	44	37.3%	28.6-46.0
	No	74	62.7%	54.0-71.4
Support Continued education	Yes	56	47.5%	38.2–56.9
	No	62	52.5%	43.1-61.8
Type of Mental Health Services				
Counselling services	Yes	51	43.2	34.1-52.7
	No	67	56.8	47.3-65.9
Psychotherapy services	Yes	51	43.2	34.1-52.7
	No	67	56.8	47.3-65.9
Psychiatric consultation	Yes	37	31.4	23.1-40.5
	No	81	68.6	59.5-76.9
Group therapy	Yes	21	17.8	11.4-25.9
	No	97	82.2	74.1-88.6

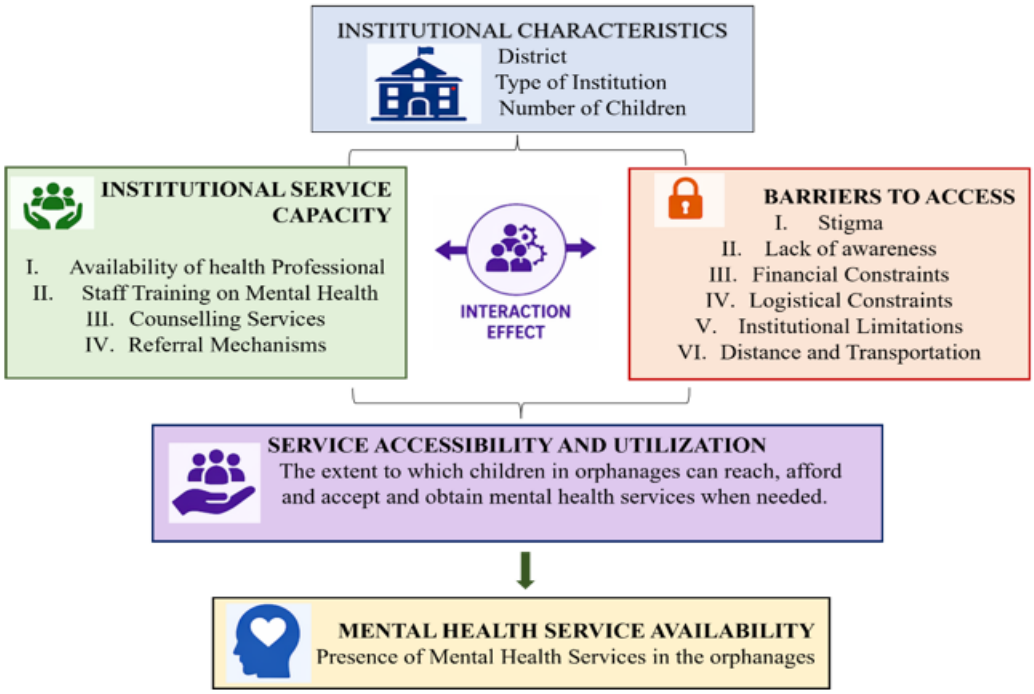


Figure 1: Conceptual Framework of Institutional Capacity and Access Barriers Influencing Mental Health Service Availability in Orphanages

The availability of specific mental health services varied across participating institutions. Counselling and psychotherapy services were each reported by 43.2% of orphanages, while psychiatric consultation was available in 31.4%. Group therapy was the least frequently reported service, available in 17.8% of institutions (Table 1). The rural–urban distribution of these services is shown in Figure 2B.

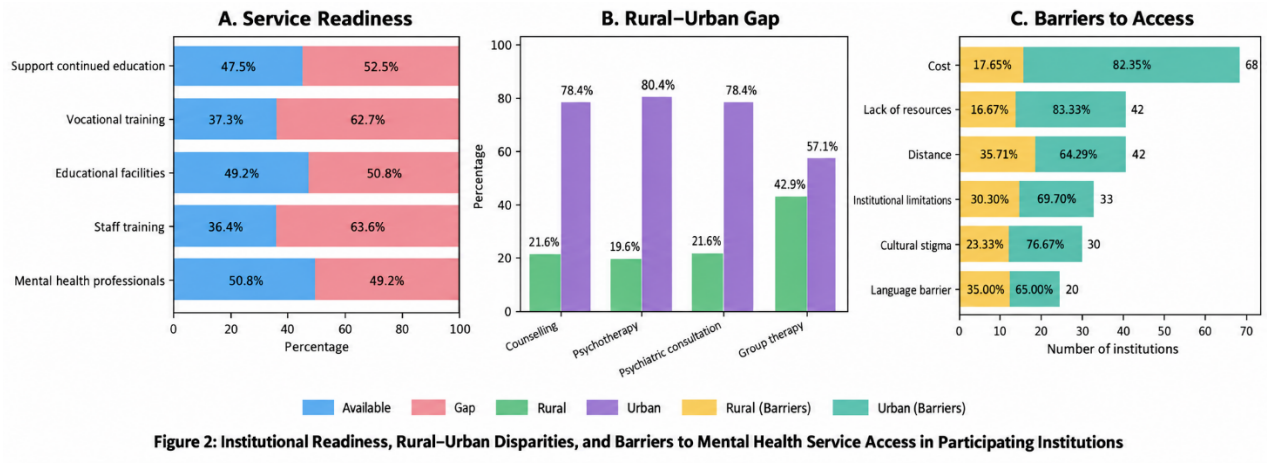


Figure 2: Institutional Readiness, Rural–Urban Disparities, and Barriers to Mental Health Service Access in Participating Institutions

Mental health service availability differed significantly by selected institutional characteristics (Table 2). A higher proportion of urban institutions reported service availability than rural institutions (38.5% and 3.7%, respectively; $p < 0.001$). Service availability was also significantly higher among institutions with mental health professionals, trained staff, educational facilities, and vocational training ($p < 0.001$ for each). In contrast, type of institution was not significantly associated with service availability ($p = 0.18$).

Table 2. Availability of Mental Health Services According to Institutional Characteristics

Variable	Category	Mental Health Services Available n (%)	Mental Health Services Not Available n (%)	Total N=118	p value
Residence location	Rural	1 (3.7%)	26 (96.3%)	27	<0.001
	Urban	35 (38.5%)	56 (61.5%)	91	
Type of institution	NGO	26 (28.3%)	66 (71.7%)	92	0.18
	Private	9 (37.5%)	15 (62.5%)	24	
	Government	1 (50.0%)	1 (50.0%)	2	
Mental health professionals' availability	Yes	36 (60.0%)	24 (40.0%)	60	<0.001
	No	0 (0%)	58 (100%)	58	
Staff training	Yes	33 (76.7%)	10 (23.3%)	43	<0.001
	No	3 (4.0%)	72 (96.0%)	75	
Educational facilities	Yes	30 (51.7%)	28 (48.3%)	58	<0.001
	No	6 (10.0%)	54 (90.0%)	60	
Vocational Training	Yes	24 (54.5%)	20 (45.5%)	44	<0.001
	No	12 (16.2%)	62 (83.8%)	74	

The distribution of specific mental health services across rural and urban orphanages showed no statistically significant difference for counselling services ($p = 0.767$), psychotherapy services ($p = 0.460$), or psychiatric consultation ($p = 0.826$) (Table 3). Group therapy showed a statistically significant difference across settings ($p = 0.016$). This pattern is illustrated in Figure 2B.

Table 3. Comparison of Specific Mental Health Services Between Rural and Urban Orphanages

Mental Health Service	Rural n (%)	Urban n (%)	Total services n (%)	p-value
Counselling services	11 (21.6)	40 (78.4)	51 (100.0)	0.767
Psychotherapy services	10 (19.6)	41 (80.4)	51 (100.0)	0.460
Psychiatric consultation	8 (21.6)	29 (78.4)	37 (100.0)	0.826
Group therapy	9 (42.9)	12 (57.1)	21 (100.0)	0.016
Values are presented as row percentages within each mental health service category. $p < 0.05$ considered statistically significant.				

Several barriers to accessing mental health services were reported across institutions (Table 4). Cost-related barriers were the most frequently reported, followed by lack of resources and distance-related barriers. Institutional limitations, cultural stigma, and language barriers were also identified. Urban institutions contributed a larger share of reported barriers across most domains, particularly cost, lack of resources, and cultural stigma. The distribution of access barriers is shown in Figure 2C.

Table 4. Barriers to Accessing Mental Health Services by Residence Location

Barrier	Rural n (%) Sample Size= 27	Urban n (%) Sample Size=91	Total N=118	95% CI
Distance	35.71%	64.29%	42	27.4-43.8
Cost	17.65%	82.35%	68	49.3-65.9
Cultural stigma	23.33%	76.67%	30	17.1-33.7
Language barrier	35%	65%	20	10.6-23.3
Lack of resources	16.67%	83.33%	42	27.4-43.8
Institutional limitations	30.30%	69.70%	33	20.2-35.7
Values are presented as row percentages within each barrier category.				

In logistic regression analysis, staff training remained independently associated with mental health service availability after adjustment (AOR: 19.29; 95% CI: 3.80–97.89; $p < 0.001$) (Table 5). Rural residence was associated with lower odds of mental health service availability in the crude model compared with urban residence (OR: 0.06; 95% CI: 0.01–0.47; $p = 0.007$), but this association was not retained after adjustment (AOR: 0.67; 95% CI: 0.03–16.23; $p = 0.808$). Vocational training and educational facilities showed significant crude associations, but these were attenuated in the adjusted model. Barrier-related variables, including distance, cost, lack of resources, institutional limitations, cultural stigma, and language barriers, were not significantly associated with service availability after adjustment.

Table 5. Logistic Regression Analysis of Factors Associated with Mental Health Service Availability

			Model A: Institutional capacity		Model B: Barriers		Model C: Stigma	
Variable	Crude OR (95% CI)	p Value	Adjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value
Residence location					--		--	
Rural	0.06 (0.01–0.47)	0.007*	0.67 (0.03–16.23)	0.808				
Urban (Ref)	1.00		1.00					
Type of institution					--		--	
Private/Gov	1.25 (0.63-3.69)	0.34	0.80 (0.02–42.01)	0.913				
NGO (Ref)	1.00		1.00					
Staff training					--		--	
Yes	79.20 (20.44–306.86)	<0.001*	19.29 (3.80–97.89)	<0.001*				
No (Ref)	1.00		1.00					
Vocational training					--		--	
Yes	6.20 (2.63–14.61)	<0.001*	0.81 (0.18–3.51)	0.774				
No (Ref)	1.00		1.00					
Educational facilities					--		--	
Yes	9.64 (3.59–25.91)	<0.001*	2.03 (0.45–9.21)	0.361				
No (Ref)	1.00		1.00					
Distance barrier			--				--	
Yes	0.49 (0.21–1.19)	0.115			0.80 (0.30–2.14)	0.663		
No (Ref)	1.00				1.00			
Cost Barriers			--				--	
Yes	2.06 (0.90–4.73)	0.088			1.82 (0.67–4.95)	0.239		

No (Ref)	1.00				1.00			
Lack of resources			--				--	
Yes	1.23 (0.55–2.76)	0.621			0.94 (0.37–2.41)	0.896		
No (Ref)	1.00				1.00			
Institutional Limitations			--				--	
Yes	0.41 (0.15–1.10)	0.075			0.47 (0.16–1.40)	0.177		
No (Ref)	1.00				1.00			
Culture Stigma			--					
Yes	1.78 (0.75–4.24)	0.194					1.93 (0.71–5.23)	0.195
No (Ref)	1.00						1.00	
Language Barriers			--					
Yes	0.35 (0.10–1.27)	0.110					0.60 (0.13–2.69)	0.504
No (Ref)	1.00						1.00	
*Signifies p value <0.05								

DISCUSSION

The present study evaluated institutional determinants and barriers influencing mental health service availability in orphanages across Tamil Nadu and identified substantial gaps in institutional readiness and psychosocial service provision. The findings indicate that structured mental health services remain limited across participating institutions, despite the recognized psychological vulnerability of children residing in institutional care settings. Counselling and psychotherapy services were each available in fewer than half of institutions, while psychiatric consultation was available in approximately one-third and group therapy in fewer than one-fifth of orphanages. These findings suggest that mental healthcare continues to occupy a relatively limited role within institutional child care systems, where services may remain predominantly focused on shelter, nutrition, and educational support.

Children living in institutional care settings often experience multiple forms of psychosocial adversity, including parental loss, disrupted attachment, emotional deprivation, neglect, and social marginalization. Such experiences may increase vulnerability to anxiety, depression, behavioural disturbances, emotional dysregulation, and trauma-related symptoms. International evidence has consistently demonstrated poorer psychosocial and developmental outcomes among institutionalized children when compared with children raised in stable family-based environments [23,24]. The present findings extend this concern by demonstrating that institutional limitations in service availability may further reduce opportunities for early psychological intervention and continuity of mental healthcare within orphanages.

Approximately half of the participating institutions reported the availability of mental health professionals; however, indicators of institutional preparedness, including staff training, vocational support, and continued educational support, were less consistently available. This pattern reflects broader challenges observed in child mental healthcare systems across many low- and middle-income countries, where institutional mental health services frequently remain fragmented and under-resourced [25]. Studies conducted in residential care systems in Eastern Europe, Latin America, and sub-Saharan Africa have similarly documented limited access to trained mental health personnel and inconsistent psychosocial support mechanisms within child care institutions [26–28].

A major finding of the present study was the strong association between staff training and mental health service availability. Even after adjustment, institutions with trained staff demonstrated significantly greater odds of reporting available mental health services. This finding highlights the importance of institutional workforce capacity in strengthening child mental healthcare delivery. In orphanage settings, caregivers and staff members often function as the primary observers of children's emotional and behavioural changes and may therefore play a critical role in early identification, psychological support, and referral coordination. International studies have shown that training non-specialist caregivers and frontline staff can substantially improve recognition of psychosocial distress and facilitate timely referral for specialized care [29,30]. In resource-constrained settings where specialist availability remains limited, strengthening staff capacity may represent one of the most feasible and scalable approaches for improving mental healthcare access among institutionalized children.

Institutions with stronger educational and vocational infrastructure may also possess better administrative organization, financial support, external partnerships, and referral linkages, which may indirectly facilitate psychosocial service integration. Mental health service readiness within orphanages should therefore be viewed as part of a broader institutional ecosystem rather than an isolated service component.

Urban orphanages reported greater overall availability of mental health services; however, this association was not retained in adjusted analysis, indicating that institutional

capacity factors may explain a substantial proportion of the observed disparity. Similar rural–urban inequalities in mental healthcare accessibility have been reported globally, particularly in LMICs where specialist services remain concentrated in urban tertiary-care settings [31]. In India, rural mental healthcare continues to be affected by shortages of psychiatrists, psychologists, social workers, and referral facilities, resulting in substantial disparities in access to specialized care [32]. Orphanages located in rural settings may therefore face compounded challenges related to geographic isolation, limited professional networks, and reduced service integration.

The findings related to specific mental health services further emphasize the limited availability of structured psychosocial interventions within institutional care systems. Counselling and psychotherapy were the most frequently reported mental health interventions, followed by psychiatric consultation, while group therapy was comparatively less available. This distribution likely reflects the greater feasibility of organizing counselling support through visiting professionals or trained staff, while psychotherapy and psychiatric care require more specialized human resources and sustained service infrastructure [33]. The significant difference observed for group therapy services should be interpreted cautiously because the overall number of institutions providing this service remained small [34]. Rather than indicating meaningful service advantage within a specific setting, this finding may reflect variability in institutional programme structure and resource allocation.

Multiple barriers affecting mental health service access were identified in the present study. Cost-related barriers were the most frequently reported challenge, followed by lack of resources, distance-related barriers, institutional limitations, cultural stigma, and language barriers. These findings are consistent with global evidence indicating that structural and sociocultural barriers remain major determinants of mental healthcare access among vulnerable populations [35,36]. A systematic review examining barriers to child and adolescent mental healthcare utilization reported that financial constraints, inadequate infrastructure, transportation difficulties, stigma, and low mental health literacy substantially reduce service accessibility and continuity of care [37]. Similar findings have been documented in South Asian and African contexts, where stigma surrounding mental illness often delays help-seeking and contributes to underutilization of available services [36–38].

Interestingly, barrier-related variables were not independently associated with service availability in adjusted regression models. This finding should not be interpreted as indicating that these barriers lack importance. Instead, it may reflect the distinction between institutional availability and actual service utilization. An institution may formally report availability of counselling or referral services while children continue to face barriers related to affordability, continuity, transportation, stigma, or irregular access to specialists. Therefore, institutional availability does not necessarily ensure accessibility, acceptability, or sustained utilization of services. Future research should therefore examine child-level service utilization, referral completion, treatment adherence, and psychosocial outcomes in order to better evaluate the functional effectiveness of institutional mental healthcare systems.

The findings have important implications for child welfare systems and public mental health policy in India. Current child protection frameworks, including Mission Vatsalya and the Juvenile Justice Act, emphasize rehabilitation, developmental support, and institutional care for vulnerable children. However, mental health integration within orphanages and child care institutions appears to remain inconsistently operationalized [17]. Strengthening institutional mental healthcare requires movement beyond episodic counselling approaches toward integrated psychosocial care systems embedded within routine institutional functioning.

Several international models provide useful lessons that may be adapted within the Indian context. Trauma-informed institutional care approaches implemented in the United States and Canada have demonstrated improvements in behavioural regulation, emotional stability, and psychosocial functioning among children exposed to early adversity [39,40]. Similarly, integrated child welfare–mental health models implemented in parts of Europe have improved continuity of care through coordination between social workers, psychologists, schools, and community mental health services [40]. India may benefit from adopting similar integrated approaches through stronger linkage between orphanages, District Mental Health Programmes, tele-mental health initiatives, and educational institutions.

Expanding the role of telepsychiatry and community-based mental health services may be particularly important for improving access within rural orphanages. Routine mental health screening, structured caregiver training, periodic psychiatric consultation, and standardized referral protocols could help reduce current service gaps. Integration of mental health indicators into institutional monitoring systems may additionally improve early identification of children requiring psychological support and facilitate continuity of care across institutions.

The present study has several strengths. It addresses an underexplored area within child mental health research by focusing on institutional service readiness and mental healthcare availability within orphanages. The inclusion of both rural and urban institutions provides additional policy relevance for understanding disparities in service distribution. However, certain limitations should be acknowledged. The cross-sectional design limits causal inference, and the institution-level analysis does not capture individual child experiences, mental health status, service utilization, or clinical outcomes. The relatively small sample size and unequal distribution of rural and urban institutions may have influenced comparative estimates and reduced statistical precision. This is reflected in the wide confidence intervals observed in some regression estimates, suggesting uncertainty around the

magnitude of association. In addition, information was obtained from institutional representatives and may therefore be subject to reporting bias. The study also assessed service availability rather than the quality, frequency, continuity, or effectiveness of mental healthcare services.

CONCLUSION

This study found that mental health service availability in orphanages in Tamil Nadu remains limited and uneven. Structured services such as counselling and psychotherapy were available in fewer than half of institutions, while psychiatric consultation and group therapy were available in a smaller proportion of institutions. Staff training was the strongest factor associated with service availability, highlighting the importance of institutional workforce capacity. The findings recommend strengthening staff training, introducing routine psychosocial screening, developing clear referral pathways, and linking orphanages with District Mental Health Programme services. Tele-mental health support may be particularly useful for rural and resource-limited institutions. Policy efforts should integrate mental healthcare as a routine component of institutional child care rather than as an optional service. Future research should assess service quality, actual utilization, child-level mental health outcomes, and the effectiveness of institutional mental health interventions.

Declarations

Ethics Approval and Consent to Participate: The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the Institutional Ethics Committee prior to data collection. Written informed consent was obtained from institutional authorities before participation. No personal identifiers of children were collected, and all information was maintained confidentially.

Availability of Data and Materials: The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing Interests: The authors declare that they have no competing interests.

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Authors' Contributions: Jasintha Ashokan contributed to the conceptualization of the study, data collection, data analysis, interpretation of findings, and preparation of the original manuscript draft. Dr Kailash Chandra Verma provided study supervision, reviewed the manuscript, and read and approved the final version. Shubhanjali Roy made substantial intellectual contributions to the study through methodological guidance, interpretation of the findings, critical review and refinement of the manuscript, and overall improvement of its scientific content and presentation. All authors read and approved the final manuscript**.**

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