



Assessment of the Physical Environment of Child Care Institutions

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Abstract

The environment in which orphans live is considered a vulnerability by several international organizations that refer to parentless children as “at risk.” A child care facility accommodates these distressed children who lack parental care, by providing a safe protective environment that contributes to the well-being of the child as well as providing a nurturing environment for their development. All resident children within institutional care have to share not only the care and love given by the care givers but also have to negotiate the use of facilities, regardless of the age, gender abilities, and needs of the child. Thus, the children who are cohabiting these negotiated spaces tend to find comfort in their physical surroundings. Studies pertaining to the psycho-social well-being of the child have been carried out for decades; however, little is known about the quality of the physical environment in these establishments. Using the children’s physical environment rating scale, this article measures the quality of physical environment in five child care institutions located in Pune, India. Analysis of the collected data provides an understanding as to whether the physical environment provides opportunities for child development.

Keywords: Physical environment quality, child well-being, facilities, child care institutions, spatial design.

INTRODUCTION

The plight of children without parental care is an unfortunate universal problem. Globally, there are around 140 million orphans; of which 31 million are officially reported from India (Orphans, nd). Child care institutions, more commonly known as orphanages, provide parentless children with support, facilities, and a safe and secure sociophysical environment. The UNICEF (United Nations Children’s Fund) defines an orphan as “a child under 18 years of age who has lost one or both parents to any cause of death” [1]. This definition however, varies worldwide ranging from “a child who has lost either or both parents” to “a child whose parents have abandoned them or are missing.” In light of

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the adverse effects of institutional care on abandoned children or orphaned children, global organizations consider it to be a “temporary shelter” rather than a long-term solution. Orphans in general have to face challenging situations. Few efforts are made to reintegrate abandoned and orphaned children into their families and hence this arrangement does not work well in the Indian situation. Most orphanages in South Asia, more so in India, lack access to a liveable physical environment, including provision of hygienic sanitation and recreation facilities [2]. However, given the large number of orphans in India, deinstitutionalizing children is not as

straightforward as closing down orphanages and moving the children to family-based care environments. These hapless children have no alternative but to live in these establishments which in spite of being branches of community care, are perceived as “regimental” by western nations.

In the absence of high-quality stable solution for children’s accommodation, it is important to look at the physical environment of existing orphanage settings until such services are implemented.

LITERATURE REVIEW

Child development is influenced by the physical environment [3] a space for expressing everyday images and experiences [4]. Contextual variables have become increasingly important in developmental research in recent years [5]. Physical environments are defined by Moore [6] as encompassing the size, density, privacy opportunities, activity zones, and outdoor interaction opportunities as well as open space modifications.

Child-environment interaction is the essential basis for development according to Maslow [7], Piaget [8], Bronfenbrenner [9]. Providing resources that stimulate children’s exploration and interaction with their environment is imperative to a child’s development. Piaget [8] theorized that by coordinating experiences while engaging in “symbolic play,” children begin to develop an understanding of their surroundings as they have a distinct relationship with their environment. The development of the children is regarded as a dynamic interaction between the child, the designed environment and the significant others which include the caregivers [10]. The definition of a “developmentally appropriate environment” provided by Moore [11], indicates an environment where children have access to a number of resources and can explore and learn freely.

Moore and Sugiyama [12] stress that as a key element of the total environment, the physical environment affects the psychosocial development of a child. Furthermore, Moore and Sugiyama [12] suggest that children use the physical environment by becoming facilitators of interaction and should therefore not be looked at as mere recipients of bombarded stimuli. A good example of a childhood facility would have all the adult-oriented activities such as offices, meeting rooms, laundry, kitchen surrounding the child-oriented spaces [13, 14]. Furthermore, these child-oriented spaces known as “modules” consist of resource rich activity spaces surrounding a *home base*.

In addition to providing them with storage cubbies, these activity spaces are also equipped with learning areas, catering to the psychosocial and physical needs of the children. According to the research cited above, children’s physical environment is extremely important for their development.

METHODOLOGY

Research Design

The assessment of child care institutions (orphanages) settings was carried out using the Children’s Physical Environment Rating Scale (CPERS). Moore and Sugiyama [12] have developed the CPERS scale which has been extensively tested for reliability and validity for the assessment of the physical environment quality in various child care settings. The physical environment of the orphanages was the independent variable, whereas the 14 subscales of the CPERS were the dependent variables.

Sample of Orphanages

Orphanages within the city of Pune were approached for the study. The administrators of the orphanages were explained the purpose of the study [15]. The study was purely a scoring-based quantitative assessment of the physical environment and strictly did not involve any kind of interaction with the children. Twelve orphanages were contacted for the study of which five orphanages gave immediate access to the facility to carry out the visual survey.

There are 14 subscales in this study. The CPERS scale is divided into four parts and is categorized into four subscales. Each subscale is further divided into several items which are scored in a 0 (Not Met) to 4 (Fully Met) [3], whereas some including “Not Applicable” on a 5-point linear scale. Taking the sum of each subscale, we get the overall score for the physical environment. The orphanage physical environment quality was determined by calculating all fourteen (14) scores.

Procedure

The research objectives and data collection process were explained to the administrative head of each orphanage and permission to access the facility was sought. As the survey involved studying the physical environment; the researcher being an architect conducted the survey individually. Interaction with the children was not required as the study was an assessment of the physical environment premises. Data confidentiality has been strictly maintained. All of the 14 subscales were assessed, calculated, and finalized on the basis of a visual survey. Each assessment using the CPERS scale took around 2 hours based on the size and facilities of the orphanage. Table 1 shows the summary score and interpretation of the studied orphanages.

Table 1. Showing summary score and interpretation of the studied orphanages.

S.N.	Summary score and interpretations			
	CPERS subscale	Mean score	Quality	
	<i>Part A: planning</i>			
1	Center size and modules	1.5	Good	
	<i>Part B: building as a whole</i>			
2	Image and scale	1.83		
3	Circulation	2.5		
4	Common core of shared facilities	2.91		
5	Indoor environmental quality	2.62		
6	Safety and security	2.50		
	<i>Part C: children's indoor spaces</i>			
7	Modified open plan space	2.50		
8	Home bases	3.20		
9	Quiet activity areas	2.40		
10	Physical activity area	2.50		
11	Messy activity areas	1.00		
	<i>Part D: outdoor areas</i>			
12	Play yards (functional needs)	2.28		
13	Play yards (developmental needs)	1.75		
14	Location and site	3.09		
	Summary score (total score/14)	2.32		

Interpretation range: 0.00–1.00 = poor, 1.01–2.00 = fair, 2.01–3.00 = good, and 3.01–4.00 = excellent.

RESULTS AND DISCUSSION

The physical environmental quality of five orphanages has been illustrated above in Table 1 based on all the four parts of the CPERS. The results and discussion have been divided into four parts, and their respective subsections corresponding to each section of the CPER scale.

Planning (Focusses on the Overall Planning of the Orphanages)

Subscale 1: Centre Size and Capacity

The building size according to the CPERS is the total area of the building to measure outside wall to outside wall in square meter. All of the orphanages fall within the range of 300-500 m². The usable

activity space within the orphanages has been found to be 3.5m² per child which is within a satisfactory range as per international standards as well as the Juvenile Justice model amendment rules 2022. All of the orphanages that were studied have a single module (all facilities clubbed together as a single functioning unit).

Building As A Whole (Considering the Built Form Holistically to Assess Major Qualities of the Building As A Setting)

Subscale 2: Image and Scale

The exterior of all of the orphanages appears non-institutional and welcoming. There are glimpses of indoor activity areas from the outside the gate before one can enter the premises. All the orphanages have colorful walls with bright and colorful accents with provision of cozy areas wherein the interior finishes are warm and natural. The orphanages have ensured that all of the furniture including toy cubbies are within the reach of small children. In certain orphanages the entire walls have been provided as an open canvas for small children to explore their creative sides by doodling on them. Toilets were also found to be age appropriate.

Subscale 3: Circulation

CPERS refers to circulation as a means of wayfinding in the building, including routes within the building connecting different part of the building as well as the activity areas. The circulation in all the orphanages was well-defined and clear without interfering with the children activity areas. Children could easily navigate themselves within the various spaces in the orphanage. There is, however, no visual opportunity for children to peep in to look in to spaces before entering them. But this in no way hampers the curiosity of the child, as once the child enters a particular area, he or she engages with it without any hesitation.

Subscale 4: Common Core of Shared Facilities

In its ideal form these spaces should typically be placed in a central core to include administrative spaces, seating area, staff rooms, meeting rooms, adults' bathroom, laundry, kitchen, and so on, as per CPERS. All of the orphanages have administration offices with storage where the staff are working together. They also have a reception and waiting area with adequate seating. The orphanages also have staff lounge for lunch breaks, share information, and store their personal belongings under lock and key. They have small meeting rooms wherein the child can interact with the counsellors. Most orphanages did not have a dedicated laundry room. One in particular had a dedicated room for linen storage and other laundry requirement. The kitchen areas in all orphanages except one is visually well connected to most of the children's activity areas.

In one particular orphanage, the dining area is placed directly next one of the sleeping areas of the children. This particular space is an eyesore as one would not like to sleep in an area which is so close to a highly chaotic space. All orphanages have rooms to accommodate play activities. Two of the five orphanages also have space to accommodate slides, tunnels, and small push toys. Libraries in all of the orphanages were found to be in quiet areas which also doubled as a study area for the children. All of the aforementioned areas are grouped together in one location within the building.

Subscale 5: Indoor Environmental Quality

The CPERS mentions that for a comfortable and healthy indoor environment there needs to be inclusion of appropriate temperature, lighting, and air quality in any orphanage. To keep the indoor environment at a pleasant level, ceiling fans have been provided in all the spaces inhabited by the children. There is abundance of natural light in the spaces used by children which is also well supported by artificial light. However, only in two of the five orphanages, there is a provision of exhaust in the toilet areas ensuring good ventilation. The areas where children can sleep can be

darkened to an extent with the use of curtain. Acoustic materials and use of soft materials to dampen the noise from undesirable sounds was found to be missing in all of the orphanages. All the exterior windows throughout all orphanages have been found to be fitted with mosquito netting. Cross ventilation and supply of fresh air is ensured in all the spaces in four out of five orphanages.

Subscale 6: Safety and Security

All orphanages have security at the entrance to prevent intruders from entering the premises. One out of the five orphanages have the office directly visually connecting to the entrance gate, in the remaining four the offices are away from the gate making it difficult to keep a watch on the entry gate. All orphanages have barriers at the floor levels to ensure that no child can wander off to any other floor or any other space without adult supervision, making the stairs safe for children. All of the hot equipment is kept away from the reach of children.

Children's Indoor Spaces

Subscale 7: Modified Open Space Planning

The CPER scale mentions “partially enclosed spaces” for protection from visual and noise distractions which include partitions, bookcases storage shelves, and so on. All orphanages have a single room which are used for multiple activities. These rooms do not provide any barrier from visual or noise distractions. Any messy activities are carried out in the adjacent open spaces. A single space is used as per a decided schedule to conduct and plan various activities.

Subscale 8: Home Base

Home base can be identified as spaces catering to sleeping areas, spaces to store personal belongings, dining areas, toilets, and so forth. All orphanages have dedicated spaces for sleeping with bunk beds. Dining areas are well separated from the sleeping areas with clusters of tables in all the orphanages except one wherein the dining area was adjacent to a children's bedroom. This was owing to the compact planning of the orphanage, which was causing a nuisance to the children who had finished their lunch and had returned to their room for some Sunday afternoon rest. In the same orphanage, it was noted that the placement of the kitchen was also near the bedroom was bothering the children as even after the meals, the clanging of utensils seemed to disturb the occupants. Toilets in all orphanages were neither closed nor isolated but spatially well connected to all the children's activity areas.

Subscale 9: Quiet Activity Areas

As mentioned in the above subsection on modified open space planning, a single room was used for multiple activities in three orphanages out of the five which included the reading area, play area, and the computer area together in the single room. These activities are scheduled weekly due to the spatial constraints of the setting. The other two orphanages had separate dedicated areas for reading cum study room and a dedicated room for a computer lab.

Subscale 10: Physical Activity Areas

Play, music, and performing arts were observed to be conducted in either the stilt floor areas of the certain orphanages or open play areas. One particular orphanage had a multipurpose hall which was used by the management for their official program. However, on other occasions, the same hall could be used as a practicing space for performing arts as well as for their annual gathering event.

Subscale 11: Messy Activity Areas

Messy activity areas such as a shallow pool for water activities was missing from all the orphanages. Neither are these activity areas planned for nor can the orphanage setting afford them due to the scarcity of space as well as issues of high maintenance and safety of the children.

Outdoor Areas

Subscale 12: Play Yards (For Functional Needs)

Requirement of sunny as well as shaded areas are fulfilled by all the orphanages, wherein the spaces allow for mobility as well as wheelchair access/crutches. However, only two out of the five orphanages had dedicated outdoor play yards. In the two of the five studied orphanages, only one had functioning outdoor play equipment. Play equipment in the other orphanage was found to be rusted and in poor condition due to natural weathering.

Subscale 13: Play Yards (For Developmental Needs)

Play yards where in the two of the five orphanages provided adequate diversity in soft and hard surfaces. Certain areas had a friendly feeling whereas certain areas acted as retreat places for children to engage in solitary play.

Subscale 14: Location and Site

All the eleven sub criteria of the subscale 14 were met to an acceptable extent. Location of all the orphanages is clearly visible to all pedestrians. Entrances to the orphanages were easy to find and they were located far from noxious elements. The sites of all orphanages were adequately fenced to prevent the children from leaving the orphanages without the knowledge of the staff. Buildings were positioned to let adequate natural light into the spaces at the same time protected from the harsh sun.

CONCLUSION

The CPERS scale points to the fact that there is no absolute for what would be a “good” orphanage. The scoring was found to be in the category of fair to good in all the five orphanages that were studied. This evaluation of the physical environment was an objective assessment of the physical attributes of the orphanage or child care institution. A child’s ability to interact with their physical environment is considered higher when the environment is rich and offers a wide range of possibilities for its development. Based on the above study, it is important that the orphanage settings may be built giving importance to its aesthetic quality to draw the attention of children. Although none of the orphanages look like a typical institutional building, even though they may appear welcoming, they still lack the first impression of a child care setting which children would find homely. If the number of children in each group can be determined beforehand, it can assist in the preliminary planning of the orphanage. The study indicated that all the orphanages under question were functioning as a single module. Providing a greater number of modules may help in ensuring that the group size is kept to a minimum; as a precaution against overcrowding which could affect the quality of the physical environment. Furthermore, besides considering indoor and outdoor spaces for children, the orphanages will benefit from reassessing their planning in their initial phases of design.

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