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Impact of Pandemic on Visitation of Children to Community Open Spaces

Dhruv Chandwania
Associate Professor, Dr. B.N. College of Architecture, Pune.
Savitribai Phule Pune University.
Pune, India

Abstract— **Children use open spaces around their houses for daily recreation. Outdoor play has multi-fold positive effects on child's wellbeing. Participation in outdoor open spaces betters child's physical, social and psychological health. The pandemic of Covid 19 got a lot of restriction on people's movement, and especially on children. With lockdowns and continuity of public recreation spaces being closed, children have had reduced access to all types of open spaces for their daily play. Staying in indoors has adversely affected their physical, social, and psychological their wellbeing.**

This paper explores literature in the domain of open spaces visitation of children with respect to Covid 19 pandemic. Furthermore, the paper analyses the common concerns of open space usage with respect to pandemic which are presented by researchers from different countries and discusses India's position of future of design policy of open spaces from the point of children's participation.

Keywords— *Pandemic, open space visitation of children, future of open space design due to pandemic*

A. INTRODUCTION -

Children's day-to-day environment includes home, school and recreational spaces. They visit open spaces around their house for free play. The outdoor open spaces become an integral part of children's life which impacts their cognitive, physical, social and psychological well-being. It is well established that participating in outdoor activities have positive impact on child's wellbeing [1-5]. While playing games physical activities have a positive effect on physical wellbeing, meeting friends and playing with them, learning from and with them effect positively on social wellbeing. Able to do activities, go out and play, able to take decisions of where and what to play, etc. builds confidence and contributes in psychological wellbeing. During their outdoor play, children encounter various elements and develop a perception about those elements. Regular visitation in these open spaces develop a place attachment which further define their level of participation.

Children need open spaces close to their residences, which provide various positive aspects with respect to overall wellbeing [6]. By participating in outdoor activities, children's risks for different mental and physical disorders is reduced by 55%, it also adds to better spatial working memory and skills which contribute in decision making and problem solving [7]. A quote from 'Rights of the Child to Play and Work' (1967) states that "In the community, free playgrounds should be provided, with convenient equipment and at a reasonable distance from homes, protected from the dangers of traffic and busy life, where children can carry out free play, cultural, recreational and sports activities, with the assistance of specially trained personnel and with the possible participation of parents and adults"[8, 9] . Community open spaces is a place where children's play culture flourishes also where rules, rituals and traditions are created, adapted and passed on through peer play, mostly without involving the adults [10].

'The ongoing Covid19 pandemic has changed many social norms and has specifically impacted children's mobility. Covid-19 is caused by coronavirus which can result in acute respiratory distress in humans and is transmitted through respiratory droplets and contact routes' [11]. About 191 governments closed the schools and world-wide about 160 crore children's were affected in varying intensities with change in daily routine [12]. Due to pandemic, Government of India implemented a nation-wide lockdown in four phases of almost 68 days of restricted mobility, impacting community engagement, social participation, and physical activity of people and especially for children [13]. Vulnerable social group, especially children were most affected during Covid 19 pandemic [14]. With almost house arrest like situation during lockdown periods their health got affected and their social and psychological well-being was compromised [15]. During lockdowns, people had to stay indoors most of the time unless and until for emergency. The children were forced to stay indoors and spend time within their residence. The mobility restriction for children was different in different countries as reported in research. This paper explores various literature from around the world which discusses impact of children's visitation in community open spaces.

With huge population of almost 130 crores of people, Indian government had defined strict lockdown periods to flatten the curve of transmission of virus. The first lockdown in India (25th March to 14th April, 2020) and even consecutive ones (15th March to 3 April 2022, 4th April to 17th May 2020 and 18th May to 31st May 2020) [13] were very stringent where government recommended that children should not be allowed to visit any public open spaces including community open spaces even within the housing societies they resided in.

In most of the studies which are from global north countries, the lockdown was not as stringent as in India. Although in countries like USA, European countries, etc. the movement of children was allowed outside the house, where children could do activities by themselves.

B. Effects of Lockdown on Children's behaviour

A survey conducted by three Fortis Hospitals in the city of Mumbai, India interviewed 7670 parents find out on how Covid 19 has changed the 'world of children'. The survey reported that six out of 10 children had become agitated and irritated during lockdown periods and that 95% parents felt restricted mobility impacted children's physical, social and emotional growth. Staying indoors only with family, made the children clingy [16].

Research by Anastasia Kourti showed that in countries like UK, Canada, Spain, Portugal, Mexico and Ireland children playing outdoors was reduced to 7 hours a week or up to almost 73%, which made children spend more time on gadgets like mobile, television, etc. amounting to almost up to 30 hours per week, almost 72% increase on screen time spent by children and saw a steep increase in children's increase in sedentary lifestyle [8, 14, 17] . While certain studies reported that for the majority of children, playing at park and in public spaces, and spending time with friends indoors and outdoors remained un-changed in response to covid 19 pandemic [18]. Only one in six children were able to play at the same level as before as reported published by Jess Edwards [19]. Although children missed playing with their friends, on the counter side, study showed a positive side on children's emotional wellbeing as children spent more time with their parents adding to more bonding and sharing between them [20].

Raising anxiety of parents with respect to their children during the pandemic is about their low physical activity and sedentary behavior due to disrupted school schedule, fewer visits to parks and high exposure to screen time [4]. Parents talked about adjusting to new regulations, minimizing risk, and setting boundaries. Parents worried about their child's play behavior in public open spaces along with added anxiety of behavior of other parents and children [21]. There was in increased fear and anxiety in children of leaving the house and even going out for a walk.

C. Change in type of Play

There was a change in type of play that was observed during and post lockdown period. The activities changed from highly structured to more unstructured play [21]. Play is an integral part of children's life, and they use play to make sense of the world and connect with each other. Children can use play to express their understanding about the pandemic and the type of play could suggest how children are feeling [10]. Children engaged more in sitting activities like board games, games on gadgets, etc., and due to restricted movement and social distancing norms, children's interaction with peers was reduced. The type of play included more imaginative play, increasing more unstructured and unscheduled playtime [4]. Participation in open spaces depended upon behavior of other children and adults and whether they followed social distancing norms. Apart from lockdown periods, when children's mobility was eased a little, children played more outside than inside. Instead of having organized activities, children played would have to think about what activities could be played and most of the time spent meandering around, walking or cycling [22].

About 62% of the parents reported that their children spent about six hours every day on electronic gadgets. With very less opportunity to play outside, 39% of the parents reported

of their child's weight gain due to frequent snacking and limited mobility. Pediatricians have reported extreme concerns of this long period of physical inactivity [16, 23].

A study by Nazish and Muhammed, states different effects on children. Due to containment children have faced mental health and some cases even PTSD was reported. Some cases of child neglect, abuse and exploitation increased the trauma [24]. With no activities like birthday parties, school activities, competitions has made children feel disappointed [9, 25] and to coup up with this, author recommend different measures while primarily stresses upon outdoor visitation . Doing exercises and exposure to daylight is a must and by following social distancing norms, children should engage in more outdoor activities which will boost the resilience adding to physical, social and psychological wellbeing.

D. Future of Open spaces

Covid 19 could arguably be defined as the largest medical, social, economic and cultural experiment in human history, where worldwide governments are revising urban design policies to cater as spatial medicine [26]. In global south countries like Mexico, India, Africa, etc., not all housing developments have dedicated spaces for children's play and not many houses have ample space indoors as well [3]. The confinement brought forth by the pandemic left children deprived of having access to alternative open spaces like playgrounds and green spaces in the city. Privately owned public spaces like society gardens, etc. were fairly used immediately after the lockdown was raised. But small stand-alone properties did not have access to community spaces and the children were limited to restricted home range for playing. Some neighborhood lack appropriate levels of open spaces which are necessary for different recreation demands while fulfilling social distancing norms [27]. According to study conducted by [28], people have realized the importance of spending time in open space due to work from home situations. Preference of mode of transport has seen a shift where people either walk or cycle to nearby spaces, hence the passage corridors need to be reviewed for widening.

Although open spaces like parks, especially children's play area have many shared surfaces which increase in disease transmission, people's attitude towards the open spaces did not change and on the contrary understood importance of open spaces even more. The use of open spaces increased once the mobility restrictions were eased. People increasingly relied on open spaces for recreation during the pandemic [15].

The continuously evolving research is suggesting building resilient cities to coupe up with disruptive events such as pandemic and it is becoming necessary where long term and short-term action plans are planned which are effective without significant alteration in cities' function and structure. One such study by [29] talks about focusing on three spatial scales: housing, city and public spaces scales. Community open spaces can be used to promoting and integrating risk management. High population and crowding contribute to rapid spread of diseases and thus studying and understanding the ratio of space and density and further planning for self-sufficient and decentralized resources like community open spaces must be increased in overall city's planning process.

Some research highly recommends reclaiming of streets and public open spaces for kids as they were the only spaces

explored for playing and served as connecting with one another while the other facilities were closed.

Rice also suggested a conceptual sketch where the intersection of health, nature and urban design is increasingly found necessary to have a balanced approach to more resilient and sustainable living [26]. Creating pocket parks can help children coup with various urban issue like heating, pollutions and allowing children to have decentralization with increased crowding and reducing vulnerability especially during challenging times like pandemic [7]. With ongoing pandemic situations, rethinking about public spaces at scales larger and even at community level, for dealing with health vulnerability, spaces more for individual and personal use over group gatherings, expanded pathways with new assumed social distancing norms. The community spaces now will have to be more multifunctional, creative, fluid and adaptive open spaces. A playful approach towards creating new forms of engagements in public open spaces can encourage explorations, actions and social encounters. Such strategies which will allow voluntary participation in open spaces can support post-pandemic recovery of cities [22]

When community open spaces are in proximity of 10mins from the residence, the people from that area receive full benefits. But in most of the cities, open spaces are not equally across all neighborhoods [23, 28].

A study by Xie et. al. suggests that creating decentralized networks of smaller green spaces will add to surrounding residents visitation experience in the open spaces, thus adding to their physical and mental benefits [23]. This network system will also create a balance and equal distribution of open spaces in neighborhoods. It is critical to provide sufficient green spaces for all residents, rather than merely meeting a figure regarding green space area per capita. There is need of increase in open spaces where native plants are grown which acclimatize to the climate characteristics [19].

Healthy urban design can become a form of 'spatial prescribing' whereby designs would actively and systematically aim to create healthier urban environments in which society and individuals' wellbeing can flourish. The expertise, competences, capacity, and creativity of urban designers provide a potential road- map for innovative, experimental and radical approaches to enabling healthier urban lifestyles. Preventive measure strategies with respect to future urban design policies should focus on maintenance of safe open spaces for low transmission rate and thus reducing pressure in public health system [29].

E. Discussion:

Pandemic has raised many questions with respect to the basic needs and necessities that humans should be equipped with. Many basic needs are not equally available to all and there is an imbalance in its distribution. Open spaces is one such basic need that the literature is strongly recommending. Open spaces are necessary for physical, mental and social recreation especially for children. Children need a wider range of mobility and during pandemic their movement has been very limited. This has gotten a behavior change in them, where they are more inclined towards gadgets than being in open spaces and meeting friends. This is creating a very unhealthy impact on their lifestyle. Creating opportunities to play outside and motivating children and parents to step out and participate

in various outdoor activities is a challenge that urban designers, policy makers and other associated agencies should consider.

India is a high population density country defined with 465 people/sq.km. The prescribed ratio of open spaces (Government and World Health Organisation) a minimum of 9 – 10 sq. mts. of green space is recommended for per person within the range of 800 mts. from his/ her residence, whereas in Indian cities, this proportion ranges from 2 to 4 sq. mt./person in cities like Bangalore and Mumbai (Rajadhyaksha, 2012). This leaves very little scope for the use of space with social distancing norms. Most of the parks and playgrounds are already overcrowded leaving no space for expansion of pathways and creating small pockets for individual/ small group meeting spaces.

From the various literature reviewed in this paper, western strategies cannot be widely applied in India. Reviewing development policies for increasing open spaces at community level can be one of the strategies for creating more spaces for people to use. An interconnected network of open spaces may help in decentralizing the congestion and would allow use of open spaces during such disruptive events like pandemic. With children's population (below the age of 15 years) of about 37.71 crores in Indian cities, defining spaces for children within public open spaces is necessary. Children are the future, and their developmental needs cannot be overlooked. As already established in literature, open space play in integral part in children's wellbeing and thus making spaces for them is imperative. The pandemic has raised fear in children and parents, of being in an open space and participating in outdoor activities. Redefining the use of open space with respect to social distancing requirements is not going to completely help in the Indian context. Many residential areas do not have ample number of open spaces and providing equal opportunity for all socio-economic groups is necessary. The open spaces need to be increased and altered to cater to the population of India. Along with increasing the ratio, the open spaces need to be equitable in terms of access.

- There are different layers of issues that are seen in this study.
- The need of open space for mental, social and physical recreation
- Within open spaces, Need of activity spaces for children
- Distribution of open spaces equally throughout the cities for better accessibility and decentralizing the crowd.
- Playfulness of open spaces to motivate children and their parents for outdoor participation
- Assessing and altering available open spaces to cater to social distancing norms
- Modularity and multifunctionality of open spaces to accommodate to changing needs during events like that of pandemic.

The five 'R' strategy which is suggested by McKinsey and company for education system to move ahead in pandemic situation can be reviewed by designer and policy makers to make open space use more sustainable. Resolving hindrances of people's visit to open spaces, building Resilient spaces, Returning to values of open spaces and focusing on what open spaces give back for healthy wellbeing, Reimagining with new and better policies and making Reforms for better adaptability

for future events [12]. These strategies can guide the policy reforms, which need to be considered with immediate effect.

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