

CHILDREN'S PLAY PATTERN DURING COVID-19 PANDEMIC

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Systematic Observation

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ABSTRACT

Using a qualitative observational design, this study investigated children's play pattern during Covid-19 pandemic. This systematic observation study aims to explore how children's play patterns have been affected during the covid-19 pandemic, as these changes will affect children's everyday life and wellbeing. This study looks at changes in indoor and outdoor play patters, nature of play etc., during the initial periods of the covid-19 crisis. Observation schedules were prepared by the researcher under expert guidance and piloting was done to ensure appropriateness of the tool. Data was collected using non participant observation technique on 5 participants selected through convenient sampling technique. 5 children in the age range 3- 6 years in Ernakulum district, who were pursuing online classes during the phase of observational data collection comprised the sample. From the study, it was observed that play patterns of children were affected by pandemic. Children spent more time involving in indoor play than outdoor play. Children involved in solitary play the most(frequency=85), then in associative play (frequency= 57) and the sample was observed to be involved in parallel play the least. (frequency=23) . The study throws light on the fact that pandemic has reduced physical activities and outdoor play of children, making them more sedentary with increased screen time, which can impact their development and health The study presses on the need to preserve and promote child health behaviors and wellbeing after lockdown and restrictions are removed, by

formulating strategies and stimulating environments in schools and home settings, to counter adverse effects, if any, in the child's cognitive development, due to changed play patters.

KEYWORDS: Play pattern, covid-19, screen time, systematic observation

INTRODUCTION:

Play is a key factor for children's healthy psychological, emotional, social, and cognitive development. During the covid-19 pandemic, it has been postulated that children's play was affected, not only regarding the time children spent playing but also in terms of the qualitative characteristics of play. This study aims to investigate how children's play has changed during the covid-19 pandemic.

Play is defined as activities that appear to be freely sought and pursued solely for the sake of individual or group enjoyment (APA,2020). Play is a widely recognized and culturally ubiquitous activity that is considered to be an important mechanism for fostering children's cognitive, social, and emotional development. There are several types of play that have been identified, including locomotor play, object play, and social play, which are generally recognized as the three basic forms. Over time, many theories have been developed to explain the specific functions of play. For example, some theories suggest that play prepares children for future adult roles or activities, while others propose that it serves more immediate functions such as exercise or socialization. Other experts propose that play helps children cope with anxiety, promotes cognitive competence, or facilitates symbolic processes.

There are various theories about the functions of play. Some proponents of the practice theory believe that play prepares children for their future roles and activities as adults. Other theories suggest that play has immediate benefits, such as promoting exercise or helping children

establish social connections with peers. The surplus energy theory proposes that play helps children use up excess energy. Additionally, Sigmund Freud argued that play serves as a coping mechanism for children dealing with anxiety, while Jean Piaget maintained that play promotes cognitive competence by enabling children to integrate new information with existing cognitive structures. Erik Erikson viewed play as a means for children to relive aspects of the past, represent aspects of the present, and anticipate aspects of the future through play sequences. Lev Vygotsky, on the other hand, believed that play facilitates symbolic processes by providing children with opportunities to establish meaning.

The World Health Organization declared the Covid-19 outbreak a global pandemic on March 11, 2020. While children and young people are generally less susceptible to the virus, there is still a legitimate concern about its transmission to older individuals and those with preexisting medical conditions. As a result, the pandemic has caused significant changes in the daily lives of children, youth, and families worldwide, with different countries implementing various restrictions and recommendations. In India, for instance, a lockdown was enforced, leading to the closure of schools and educational institutions, followed by a shift to online classes.

Despite the recognized importance of play, the COVID-19 pandemic has had a significant impact on children's daily lives, with measures such as school closures, social distancing, and limited outdoor activities affecting their opportunities for play and learning. There is growing concern that these changes may have long-term consequences for children's development, particularly their social and emotional wellbeing. Additionally, some researchers suggest that the pandemic may have influenced the ways in which children engage in pretend play, with some incorporating COVID-19 into their play scenarios, such as pretending to be

doctors administering medication for the virus. Overall, the pandemic has highlighted the importance of play in children's lives, and the need for ongoing research and support to ensure that children continue to have access to high-quality play experiences, even in challenging circumstances.

During the Covid-19 pandemic, not only have children's daily lives been affected, but it has also been suggested that their play has undergone changes as well. There are concerns that due to school closures, home confinement, social distancing measures, and limited access to outdoor activities, children have fewer opportunities for learning and play. Additionally, children's pretend play has been influenced by the pandemic, with Covid-19 becoming a part of their everyday play. For instance, children might play doctors and give pretend medication for the virus.

Review Of Literature

A review of scientific literature regarding children's play behavior and patterns during pandemic is presented in chronological order of publishing.

In 2021, Kourti, Stavridou, et al. conducted a systematic review to examine how children's play behaviors were affected during the COVID-19 pandemic. The review searched through various databases and found 17 studies conducted in Europe and North America. The findings suggest that outdoor play decreased while indoor play and screen time increased during the pandemic. COVID-19 was incorporated into children's pretend play, and play was found to be important for children's mood and well-being. Teachers were particularly concerned about how lockdown measures affected children's play. Overall, the evidence indicates that the COVID-19 pandemic had a significant impact on children's play habits.

Pelletier, Cornish, and Sander (2021) conducted a qualitative study in British Columbia, Canada, to explore the experiences of children's independent mobility and physical activity during the covid-19 pandemic. The study involved 21 families with 45 participants living in small urban and rural areas. The researchers identified three themes through a thematic analysis, which showed that families perceived an increase in unstructured activity and a decrease in structured physical activity during the pandemic. However, many parents viewed this shift as a positive change. Both parents and children expressed fear and anxiety about virus spread but were creative in adapting play behaviors. The study findings suggest that the pandemic had a significant impact on social friendship networks for families and led to a shift in activity patterns for children toward unstructured play.

Thibodeau-Nielsen Rb, Palermo F, White Re, Wilson A, and Dier S (2021) conducted a study to understand how economic hardships experienced by families during the Covid-19 pandemic were linked to children's emotional well-being and development. The study also examined how engagement in pandemic-related pretend play affected this relationship. Participants were caregivers of preschoolers aged 3-6 years living in the United States. Results indicated that economic hardships were associated with increased caregiver stress, which, in turn, was linked to children's emotional distress and poorer self-regulation. However, engaging in pandemic-related pretend play seemed to protect children's well-being by weakening the negative association between caregiver stress and children's emotional distress. Therefore, addressing caregiver stress levels and encouraging children to engage in pretend play related to the pandemic could have important protective effects on early development and well-being during times of crisis

A national survey conducted in Canada in 2020 investigated the effect of the COVID-19 outbreak on the movement and play behaviors of children and youth. The study found that only a small percentage of children and youth were meeting the recommended movement behavior guidelines during the COVID-19 restrictions. Physical activity levels decreased, outdoor time reduced, sedentary behaviors increased (including leisure screen time), and sleep increased during the outbreak. However, parental encouragement and support, parental engagement in physical activity, and family dog ownership had a positive association with healthy movement behaviors. Despite the adverse impact of the pandemic on movement and play behaviors, some parents reported adopting new hobbies or accessing new resources. This study highlights the immediate collateral consequences of the COVID-19 outbreak on Canadian children and youth.

Herrington and Bussori argue in their article "Beyond Physical Activity: The Importance Of Play And Nature-Based Play Spaces For Children's Health And Development" that unstructured outdoor play is a valuable activity for children, but access to such opportunities has decreased over time. A survey of 355 pediatricians found that the majority agreed that quality play spaces for unstructured play are important for children's overall development. Encouraging children to engage with their environment can help combat boredom and increase engagement, and play spaces designed with natural elements can facilitate this for a wider range of children. Play and nature are critical components of children's health and development, and cannot be substituted with other methods or materials.

Russell and Stenning wrote an article examining the changes that occurred on residential streets in England, both planned and unplanned, during the lockdown period. They pointed out that lockdown had significant negative effects on the well-being of children, especially those who were vulnerable or had no access to private outdoor space. To address these challenges, it is

important to prioritize children's play, particularly outdoor play, during and after the pandemic. They suggested that policymakers should recognize the importance of children's play and movement in covid-19 policy narratives in order to create the conditions necessary to support play.

Guan et al. conducted a study in 2020 to determine whether children were engaging in healthy movement behaviors during the COVID-19 pandemic, specifically in terms of physical activity, sedentary behavior, and sleep patterns. Their research found that children were less active and more sedentary on days when they were not physically attending school. The study used community mobility data from Google across 15 countries to compare outdoor and indoor activity before and after the pandemic declaration by WHO. Additionally, they interviewed 97 parents of young children in South Korea, with 81% reporting an increase in their children's screen time and 94% reporting a decrease in their children's use of play and sports facilities. Overall, the study provides evidence of a decrease in healthy movement behaviors among children during the pandemic.

Graber, Byrne, and colleagues conducted a review to examine the impact of isolation and other restrictive environments on play and to investigate whether play can help alleviate the negative effects of such restrictions. They identified 15 peer-reviewed studies that focused on hospitals, juvenile and immigration detention centers, and refugee camps. The studies showed that children's access to play was affected during crises and quarantine situations. While the studies suggested that play could potentially support children during isolation, there was a lack of comprehensive research on play as an intervention for mitigating the impacts of restrictions.

A survey was conducted in Ireland to understand early childhood teachers' perspectives on the role of play during the pandemic. The survey was conducted at the end of a phase of

school closures (March-June 2020) and prior to planned school re-openings (September 2020) due to Covid-19. The study had 309 participants, and the findings show that the teachers understood the importance of focusing on children's social and emotional development following months of unprecedented change across their lives. The vast majority of teachers reported encouraging parents to play with their children during lockdown. Furthermore, 87% of the teachers stated that play would play a significant role in their approaches to supporting children's transition to school upon reopening.

The study by Raktim Mitra et al. in 2020 explored the impact of neighborhood environments on the physical activity, sedentary behavior, and sleep patterns of Canadian children and youth aged 5-17 years during the Covid-19 pandemic. The study identified two groups based on their changes in outdoor activities, and found that compliance with 24-hour movement guidelines was low among both groups. The study also found that living in houses (as opposed to apartments) was associated with increased outdoor activities, while proximity to major roads was a barrier to physical activity.

Need And Significance

Play is an essential aspect of childhood that may have a significant impact on children's health during crises. The literature review highlights the potential negative consequences of prolonged school closure, home confinement, and social restrictions during the pandemic on children's physical and mental health. This systematic observational study aims to explore changes in children's play patterns during the pandemic and their potential impact on children's wellbeing. The study examines indoor and outdoor play patterns, the nature of play, and other factors during the initial period of the pandemic. The findings will inform efforts to preserve and promote children's health and wellbeing even after restrictions are lifted. Creating stimulating

environments for optimal child development during the pandemic is crucial, and strategies to avoid detrimental conditions that impact children's play and development during future crises can be beneficial.

Objectives

- To observe play patterns of children during pandemic using systematic observation

Research Questions

- To explore outdoor and indoor play time during pandemic
- To explore nature and types of play the children involve in.

Method

Research Design

The current research employed a qualitative research design. Data was collected using non participant observation technique, where the observer is not involved with the participants who are being observed.

Sample

The sample for the study was selected through convenient sampling technique. 5 children in the age range 3- 6 years were included in the study. The sample included 2 females and 3 males from a semi urban place in Ernakulum district, who were pursuing online classes during the phase of observational data collection.

Tools

For conducting systematic observation, an observation schedule was prepared by the researcher by reviewing literature. The appropriateness was checked by doing a short observation prior to

actual study. Changes in observation schedule was made according to the suggestions of expert guide. The final observation schedule included

- Details of location, time and time spent for each participant
- Play settings (indoor, outdoor) in which the children spent time- for each day.
- Nature of play including solitary play, parallel play and associative play recorded through various behavioral characteristics like-
 - Without toys or objects
 - Manipulating toys or objects
 - Passively engaged with toys
 - Fantasy play
 - Play according to internalized rules
 - Physical movements
 - Working at even pace
 - Overt interaction
 - Mimicking
 - With parents
 - With peers
 - Sedentary screen play

Procedure

The researcher developed the observation schedule and consent was taken from the parents of the children to be observed. They were informed about the purpose of the study. Each of the participant was observed for 7 days at various times. All the participants were located at

Vembilly, Kunnathunad village in Ernakulum district. The observations were marked as tally marks in the schedule and additional field notes were taken.

Table 1

Details of location, time, time spent for observation for each participant.

	Location	Time	Time spent
Day 1	Home	9 am -11 am	2 hours
Day 2	Home	10 am-12 p.m.	2 hours
Day3	Home	12 pm-2 pm	2 hours
Day4	Home	2 pm-4 pm	2 hours
Day5	Home courtyard	4 pm- 5 pm	1 hour
Day 6	Home courtyard	5 pm – 7 pm	2 hours
Day 7	Ground and house	4 pm- 6 pm	2 hours

P 1=participant 1. P1 was 6-year-old male studying in 1st standard through online classes during the time of observation. He was observed for 12 hours in total for 1 week, during various times of the day. P2=participant 2. P2 was 3.5-year-old female studying in kindergarten through online classes during the time of observation. P3=participant 3. P3 was 3-year-old male studying in kindergarten through online classes during the time of observation. P4=participant 4. P4 was 6-year-old male studying in kindergarten through online classes during the time of observation. P5=participant 5. P5 was 5-year-old female studying in kindergarten through online classes during the time of observation.

Each of the participants were observed on separate days for the time and location as mentioned in the table. Each participant was observed for 12 hours in total for 1 week, during various times of the day.

Result And Discussion

The study was conducted to observe play patterns of children during pandemic using systematic observation, in order to explore outdoor and indoor play time during pandemic and to explore nature and types of play the children involve in during pandemic era. The research was carried out using non participant observation in naturalistic settings. The findings and observations are tabulated below.

Table 2

Details of time spent in different play settings for each participant.

	Outdoor play (minutes)							Total	Indoor play (minutes)							Total
	D1	D2	D3	D4	D5	D6	D7		D1	D2	D3	D4	D5	D6	D7	
P1	10	20	0	30	20	30	95	205	0	10	15	45	30	45	0	145
P2	0	15	0	30	15	15	95	170	30	30	35	35	20	40	20	210
P3	0	60	5	20	30	60	90	265	45	20	30	45	0	15	0	115
P4	0	0	0	10	15	40	90	155	30	20	30	35	30	10	15	170
P5	0	0	0	0	20	30	30	80	25	15	20	30	20	45	40	195

Table 2 shows the time spend in different play settings, categorized into outdoor and indoor play for each participant. The total time spend for indoor play and outdoor play during the 7 days' observation period is calculated. The table shows that 3 out of the 5 participants have more time spent indoors. This is in consistence with many research findings during pandemic era. 97 parents of young children between march 27 and 31, 2020 in South Korea reported that their children's screen time had increased and 46 of 49 reported that their children's use of play and sports facilities had decreased (Guan, Okely, Del Pozo Cruz, 2020). Outdoor play was reduced during the pandemic; on the other hand, there was an increase in indoor play and in videogames-screen time.(Kourti , Stavridou ,et al.,2021) . It was additionally observed that the indoor and outdoor play time was determined largely by the timing of online classes of each of the participants. Hence the individual differences. Also, a higher time spent outdoors for 2 male participants can be seen. This can be due to the availability of partners for outdoor play for these two participants which makes outdoor play much more enjoyable for them, unlike other participants who do not have peers and spent more time indoors. The time spent outdoor or indoor is also highly determined by parental control. Parental concerns regarding pandemic risks can decrease chances of letting their children to play at distant grounds or with peers or neighbors. An advantage for children with siblings can be seen, as they have partners to play outdoors, with parental consent. Spending time outdoors is associated with greater physical activity, less sedentary time, improved sleep, and a number of other benefits (e.g., mental health, immune function). Active play indoors does not seem to replace active play outdoors resulting in a net decline in reported play-based activity.

Table 3

Play behavior pattern of children during pandemic

Nature of play	Behavior observed	Frequency
Solitary play	• Without toys or objects	6
	• Sedentary screen play	30
	• Manipulating toys or objects	15
	• Passively engaged with toys	8
	• Fantasy play	8
	• Play according to internalized rules	8
	• Physical movements	10
Parallel play	○ Without toys or objects	2
	○ Manipulating toys or objects	5
	○ Passively engaged with toys	1
	○ Fantasy play	0

	○ Play according to internalized rules	2
	○ Physical movements	5
	○ Overt interaction	0
	○ Mimicking	2
	○ With parents	3
	○ With peers	3
Associative play	● Without toys or objects	7
	● Manipulating toys or objects	3
	● Passively engaged with toys	0
	● Fantasy play	5
	● Play according to internalized rules	5
	● Physical movements	7
	● Overt interaction	10
	● Working on their own	5

• Resource sharing	/toys	6
• Turn taking behavior		12
• Mimicking co players		6
• With parents		1
• With peers		10

Table 3 shows the play behavior patterns of the 5 participants during pandemic time. The play behavior is categorized into solitary play, parallel play and associative play to gain understanding about the nature of plays in which children are involved. The frequency distribution patterns indicate that children involved in solitary play the most (frequency=85), then in associative play (frequency= 57) and the sample was observed to be involved in parallel play the least. (frequency=23) .

The children were observed to be playing alone, without interacting with others. In solitary play behavior, most frequently children were involved in sedentary screen play, which involves watching videos on mobiles or computers, playing online games, without major physical movements or physical exertion. Additional information from parents also indicates that screen time of children have exponentially increased after lockdown due to lack of other sources of entertainment and online classes also increases screen time. The impact of the COVID-19 pandemic on children's leisure screen time and social media use has been extensively studied. Moore et al. (2020) reported that children and youth had higher leisure screen time

(4.10/5.00 and 4.21/5.00, respectively) and social media use (3.30/5.00 and 3.78/5.00, respectively) during the pandemic than before. This increase in sedentary behavior was also reflected in family time, with respondents reporting spending more time in sedentary behaviors (3.87/5.00 and 3.88/5.00 for children and youth, respectively) and less in physical activities (2.72/5.00 and 2.57/5.00 for children and youth, respectively) compared to pre-pandemic levels.

Similarly, in the current study, children's play patterns during the pandemic were observed to have shifted towards more sedentary screen time than physical activity. The frequency of sedentary screen play was three times higher than that of solitary physical activities, and physical activities in associative and parallel play were even less frequent. These changes in play patterns may have implications for children's cognitive development, as important aspects of play, such as fantasy play, playing with internalized rules, and imaginative play without using toys, were observed primarily in solitary play patterns. It is essential to consider these findings when developing strategies to promote healthy movement behaviors in children during crises such as the COVID-19 pandemic. Efforts should be made to encourage physical activity and outdoor play while limiting excessive screen time and sedentary behavior. Creating stimulating environments for children's optimal development during restrictions is also important, and early intervention and preventative support should be provided to children facing social restrictions.

Parallel play was least observed in the samples' play pattern. Children were observed to be involved in parallel play with their parents and peers, where they play next to someone, using similar materials, but with no direct interaction. Here fantasy play and overt interaction was almost nil. Passive play with toys were lesser than play involving manipulation of toys. Mimicking of peers and parents while involving in parallel play was observed in younger children.

In associative play, which was much less frequent in the observed sample than solitary play, children involves in playing with peers or others while interacting and sharing materials with them. Associative play highly involved physical activities and overt interaction between peers. Many social behaviors like turn taking behaviors, sharing resources etc. were observed during interactive play of this kind, which are highly influential in the social development of children. But children living in apartments or those whom cannot play in groups due to pandemic restrictions can miss out on these kinds of exposures. One way is to make parents play more interactively with kids, fostering these values and skills in children in such restricted environments. Associative play also involved playing by internalization of rules. Passive and active manipulation of toys were very infrequent in associative play.

In general, the sample of children involved in sedentary play the most, with much infrequent associative play and seldom in parallel play. The indoor play time was generally more than outdoor play time, and decrease in physical activities and more sedentary screen time and play was seen. From other similar studies, it was seen that, in general, girls were less active than boys. Girls engaged in more social media use and slept more than boys. The largest reported change in behaviors related to leisure screen-based activities, where children and youth were watching upwards of 6.5 h per day. (Moore, Faulkner, Rhodes. *et al.*,2020).

CONCLUSION

From the study, it was observed that play patterns of children were affected by pandemic. Children spent more time involving in indoor play than outdoor play. Solitary play was the most frequent kind of play the participants were involved in, followed by associative and parallel play. The study throws light on the fact that pandemic has reduced physical activities and outdoor play

of children, making them more sedentary with increased screen time, which can impact their development and health.

Limitation

The study involved systematic observation of just 5 children, which is a very small sample size. The sample was restricted to a small locality, therefore decreasing the findings generalizability. The study doesn't measure the impact of changed play patterns on children's health due to time restrictions.

Suggestions For Future Research

For future studies, children of different age groups can be compared and studied, in order to understand the differences in impact of covid restrictions on children of different ages. Also, children living in different residential conditions, like apartments, cities, villages, and different communities can be studied, to get a broader overview on the topic. Hence generalizability of the study can also be improved.

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