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The Play Material Ecology of Semi-Nomadic Gujjar Children in Early Childhood: A Qualitative Study from Rajouri District, Jammu and Kashmir

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Abstract

Play is a primary context for young children's exploration, imagination, social interaction and learning. The nature and diversity of materials available for play can influence the range and complexity of children's play experiences. For children living in semi-nomadic Gujjar communities, seasonal mobility, geographical isolation and limited access to early childhood services may shape the availability of play and learning materials. The present study aimed to document the play materials available to semi-nomadic Gujjar children aged 3–6 years and to explore the cognitive and socio-emotional opportunities afforded by their play experiences. The study was conducted in rural areas of Rajouri district, Jammu and Kashmir, and included 60 semi-nomadic Gujjar children. Data were collected through systematic observation of children's play in natural settings and informal interactions with children and caregivers. Observational records and interaction notes were categorized according to the type of material, developmental opportunities and mode of play. Natural objects and reused household materials were predominant, while manufactured toys and educational materials were rarely observed. Children demonstrated considerable resourcefulness by transforming mud, stones, sticks, leaves, cloth, wire and household objects into play materials. Imaginative and role play reflected everyday experiences such as herding, cooking, milking and migration, providing opportunities for symbolic representation, social interaction and culturally meaningful expression. At the same time, the limited diversity of materials may constrain opportunities for varied cognitive, language and collaborative problem-solving experiences. The findings highlight the need for culturally responsive, affordable and portable play materials, along with play-based pedagogical support for Anganwadi workers and caregivers, particularly during periods of seasonal migration.

Keywords: early childhood; play materials; play ecology; play-based learning; semi-nomadic Gujjar children; cognitive development; socio-emotional development; Rajouri; Jammu and Kashmir

1. Introduction

Early childhood, particularly the years from three to eight, is a significant period for the development of knowledge, language, social competence, self-regulation and other foundational capacities (UNICEF,2018). Play provides children with an important context in which they explore their environment, test ideas, develop social relationships and construct meaning. The materials available to children are not merely accessories to play; they can influence the variety, quality and complexity of play experiences. Developmentally appropriate materials can provide opportunities for children to manipulate objects, solve problems, engage in symbolic representation, develop early mathematical concepts and participate in social and imaginative play (Singer et al, 2006).

India's National Education Policy (NEP) 2020 emphasizes that the education of children from 3 to 8 years should be play, activity and experience based. This emphasis places importance on providing children with developmentally appropriate learning environments and materials.

The implementation of play-based early childhood education, however, may be particularly challenging for children living in geographically remote and resource-constrained communities. Semi-nomadic Gujjar families in Jammu and Kashmir often engage in seasonal movement between highland pastures and lowland settlements. Such mobility can affect children's continuity of access to schools, Anganwadi centres and learning resources. During periods of seasonal movement, children may have fewer opportunities to access structured early childhood environments and commercially manufactured play materials.

Rajouri district, situated in the Pir Panjal region of Jammu and Kashmir, contains a substantial population of Gujjar families living in rural and remote settlements. Difficult terrain, limited road connectivity and geographical isolation may influence access to educational resources. Although early childhood services are available in parts of the district, there is limited empirical documentation of the everyday play environments of semi-nomadic Gujjar children.

Understanding what children play with, how materials are obtained and used, the forms of play that emerge from these materials, and the constraint on their availability is important for developing culturally appropriate interventions. Such an understanding is particularly relevant in communities where children creatively transform naturally available and household materials into toys and play props.

The present study therefore explores the play material ecology of semi-nomadic Gujjar children in rural Rajouri, with particular attention to the availability and use of natural, household, cultural/improvised, manufactured and educational materials and the cognitive and socio-emotional opportunities associated with children's play.

2. Objectives of the Study

1. To document the types of play materials available to semi-nomadic Gujjar children aged 3–6 years in rural areas of Rajouri district.

2. To explore the cognitive and socio-emotional opportunities afforded by the available play materials and play experiences.

3. Methodology

3.1 Research Design

The study adopted a qualitative, descriptive-observational design. The inquiry was exploratory in nature, as limited prior information was available regarding the everyday play environments of semi-nomadic Gujjar children in the selected area. A qualitative approach was considered appropriate for generating contextualized descriptions of children's play materials, play behaviours and social contexts.

3.2 Study Area

The study was conducted in rural settlements of Rajouri district, Jammu and Kashmir. Data were collected during the non-migration season, when families were residing in their village settlements and observation of children's everyday play was possible.

3.3 Sample

The sample consisted of 60 semi-nomadic Gujjar children aged 3–6 years, including 30 boys and 30 girls. Purposive sampling was used to select participants who met the predetermined inclusion criteria. Children were eligible for inclusion if they belonged to semi-nomadic Gujjar families, were within the specified age range, and were residing in the selected study area during the period of data collection.

3.4 Data Collection

Two methods were used for data collection. First, systematic observation was undertaken in natural settings such as households, courtyards and open community spaces. Observations focused on the types of materials used, play activities, social context of play (solitary, parallel or cooperative), and the developmental opportunities evident in children's play. Second, informal interactions with children and primary caregivers, including mothers and fathers, were used to obtain information about the sources of play materials and constraints on their availability.

A total of two observation sessions were conducted with the selected children. Each observation session lasted 3-4 hours. Thus, a total of 120 observation sessions were conducted for the 60 participating children. Interactions were conducted in the Gujjari language to facilitate comfortable communication and observation and relevant information obtained during informal interactions were documented through field notes during each observation session. Prior to data collection, permissions were obtained from concerned authorities, and informed consent

was obtained from parents/primary caregiver of participating children and children's willingness to participate was respected throughout the observation process.

3.5 Data Analysis

Observational records and notes from interactions were organized and categorized according to: (a) type of play material: natural, household, cultural/improvised, manufactured and educational; (b) developmental opportunities, with particular attention to cognitive and socio-emotional experiences; and (c) mode of play, including structured, unstructured, guided and independent play. Descriptive patterns emerging across observations were then interpreted in relation to the children's everyday cultural and environmental context.

4. Results

4.1 Background Information of Respondents

The sample comprised 60 children, with an equal number of boys and girls. Among the participants, 15 children (25.0%) were aged 3–4 years, 24 (40.0%) were aged 4–5 years, and 21 (35.0%) were aged 5–6 years.

Age group (years)	Boys (N=30)	Girls (N=30)	Total (N=60)
3–4	7 (23.3%)	8 (26.7%)	15 (25.0%)
4–5	11 (36.7%)	13 (43.3%)	24 (40.0%)
5–6	12 (40.0%)	9 (30.0%)	21 (35.0%)
Total	30 (100%)	30 (100%)	60 (100%)

Fig 1: background data

4.2 Availability and Categories of Play Materials

Natural objects and reused household materials were predominant in the play-material ecology of the children. Manufactured toys and educational materials were observed only occasionally. Children frequently used materials available in their immediate surroundings and adapted them according to the requirements of their play.

The percentages reported below refer to the proportion of observed settings in which each category of material was identified. Categories were not mutually exclusive.

Category	Examples	Observed settings
Natural materials	Mud/clay, stones, sticks, leaves, water, sand	Nearly all settings (95%)
Household items	Utensils, cloth scraps, ropes, boxes, containers	Most settings (80%)
Cultural/improvised items	Wooden sticks used as props, old shoes, bottles	About half of settings (45%)
Manufactured toys	Plastic balls, toy vehicles, dolls	Rarely observed (15%)
Educational materials	Puzzles, blocks, picture books	Scarcely observed (2%)

Fig 2: availability of play material

4.3 Cognitive Opportunities through Play

Children engaged in a range of activities that provided opportunities for cognitive exploration. Mud and clay were commonly used to construct miniature structures, animals and representations of familiar scenes. Such activities provided opportunities for symbolic representation, spatial exploration and problem-solving.

Stone play included sorting by size and colour, stacking and counting, suggesting opportunities for early mathematical thinking. Children also selected materials from their surroundings and assigned them particular names and roles. For example, bricks could be used to represent buffalo. Stones, sticks and leaves were incorporated into traditional and imaginative games such as ***fitta*** (hopscotch) and ***kancha*** (marbles).

Children's play therefore demonstrated considerable creativity and flexibility in using limited resources. At the same time, the scarcity of puzzles, building blocks, shape sorters and other developmentally designed materials reduced the range of structured challenges available to children, particularly opportunities to practice more varied forms of classification, construction, sequencing and problem-solving.

4.4 Socio-Emotional and Culturally Embedded Play

Role play was a prominent feature of the observed play environment . Children drew themes from familiar everyday experiences, including herding goats, milking, cooking and migration. Household objects and natural

materials were used as props in these scenarios. Such play provided opportunities for children to negotiate roles, interact with peers, resolve disagreements and represent culturally familiar social situations.

Mud was also used to create small representations such as animals and pots, which were subsequently incorporated into make-believe games involving family and everyday activities. At times, children imitated cattle by reproducing their movements and sounds. Older children (5–6 years) were more frequently observed engaging in cooperative play, whereas younger children (3–4 years) more often engaged in parallel play.

Caregiver involvement in play was limited during the observation period, as adults were often occupied with household and agricultural activities. Children frequently initiated play independently. The findings suggest opportunities for strengthening caregiver awareness of how simple interactions such as asking open-ended questions, extending children's narratives and introducing new vocabulary can enrich play without requiring expensive materials.

4.5 Child-Created and Locally Available Play Materials

A notable feature of the play environment was children's ability to construct or adapt their own play materials. Children made small wind-driven objects using paper and sticks, used ***gilli danda*** made from wood and sticks for traditional games, and created skipping ropes from natural fibres. Some children constructed toy cycles using steel wire and wood and used them in imaginative transport play. Balls were also made from pieces of cloth. These examples illustrate the cultural resourcefulness and creativity embedded in the children's everyday play.

4.6 Constraints on Access to Play Materials

Four broad factors emerged as constraints on the diversity and availability of play materials.

1. Economic constraints: Families tend to prioritize essential needs such as food, clothing and health care, and even inexpensive educational materials could be perceived as unaffordable.

2. Geographical isolation: Remote habitations had limited access to markets where toys and educational materials could be purchased.

3. Cultural and contextual factors: Play was largely viewed as a natural and spontaneous activity, and commercially available educational toys were unfamiliar to many caregivers.

4. Institutional gaps: During periods of migration, continuity of access to Anganwadi services and play materials could be disrupted. In some locations, the availability and supply of play materials were also reported to be inconsistent.




5. Discussion

The findings reveal a resourcefulness resource constraint paradox in the play ecology of semi-nomadic Gujjar children. On one hand, children demonstrated considerable creativity in transforming natural and household objects into meaningful play materials. On the other hand, the limited diversity of materials reduced the range of play experiences and structured challenges available to them.

The predominance of natural materials is consistent with observations reported in other rural and culturally diverse communities. Natural objects can support sensory exploration, imagination, manipulation and creativity. However, a varied play environment may provide additional opportunities for construction, classification, symbolic representation and early problem-solving (Trawick-Smith et al., 2015).

The present findings therefore suggest that the issue is not the absence of commercially manufactured toys per se, but the limited range of developmentally appropriate opportunities available through children's play materials.

The culturally embedded nature of role play is another important finding. Children's play themes reflected their lived experiences of family life, animal care, household activities and seasonal movement. This aligns with sociocultural perspectives on play, in which children use familiar social situations to construct meanings and practise social roles. Peer interaction, negotiation of roles and collaborative pretend play can provide opportunities for social competence and emotional expression (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004).

The findings also have implications for the implementation of NEP 2020 in nomadic and semi-nomadic communities. Play-based foundational education requires more than curricular change; it also requires appropriate materials, supportive adults and continuity of early childhood services. For Gujjar communities, materials should be low-cost, culturally relevant, lightweight and portable so that they can be used across seasonal locations. At the same time, locally available materials should be viewed as assets rather than as inferior substitutes for commercial toys.

6. Implications for Early Childhood Practice

The findings point towards a culturally responsive approach in which locally available resources are combined with a small number of carefully selected developmental materials. Portable play kits could include picture cards, strings, beads, paper, crayons, simple construction materials and locally made objects. Such kits could support

early numeracy, language, fine-motor development, construction, pretend play and social interaction without imposing a commercially oriented model of childhood play.

Anganwadi workers and caregivers can also be supported to use everyday objects through play-based pedagogical strategies. Rather than replacing children's existing forms of play, interventions should build on their cultural knowledge, traditional games and locally meaningful experiences.

7. Limitations

The study has several limitations. First, the sample consisted of 60 children from one district and therefore cannot be considered representative of all semi-nomadic Gujjar children. Second, data were collected during the non-migration season; children's play environments and access to materials may differ during seasonal migration. Third, the qualitative observational design was appropriate for exploring play environments but did not permit conclusions about developmental outcomes or causal effects of play materials. Finally, the study did not employ standardized developmental measures. Future research could use larger samples, longitudinal designs, systematic qualitative coding and standardized measures of developmental outcomes to strengthen the evidence.

8. Recommendations

1. Develop inexpensive, lightweight and portable play kits using a combination of local natural materials and selected manufactured materials such as beads, strings, picture cards, paper and simple construction materials.

2. Integrate play-based pedagogy into Anganwadi worker training, with practical modules demonstrating cognitive, language and socio-emotional stimulation through natural and household materials.

3. Develop caregiver education programmes that demonstrate the developmental value of play and practical ways of scaffolding children's play through conversation, questioning, modelling and participation.

4. Strengthen the supply and continuity of developmentally appropriate play and learning materials in early childhood centres serving remote and mobile communities, including mechanisms for mobile or seasonal services during transhumance.

5. Document and promote culturally meaningful traditional games and child-created toys as valuable resources for play-based foundational learning.

6. Undertake longitudinal and comparative research to examine changes in children's play environments across migration and non-migration seasons and to investigate their relationship with developmental outcomes.

9. Conclusion

- **Play Material Ecology:** Predominantly natural objects and reused household materials, with limited manufactured and educational toys.

- **Children's Play:** Demonstrated creativity and cultural resourcefulness by transforming limited resources into play materials for traditional, imaginative, and role-play activities.
- **Developmental Implications:** A balanced approach is needed, building on existing natural and locally made play materials while providing affordable, portable, and developmentally appropriate resources.

10. Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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