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Quality of parent–child interaction in underserved migrant areas in Kyrgyz Republic: a pilot study

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Abstract

Background After societal change in Kyrgyz Republic, the pattern of parent–child interaction in the changing parenting culture is an important factor influencing the positive development of Kyrgyz children. This study is aim to assess the quality of parent–child interactions in Kyrgyzstan by analyzing the interaction patterns and playfulness of children during free play at home.

Methods This was a descriptive pilot study using video-recorded observations to explore parent–child interactions. The Dyadic Parent–Child Interaction Coding System and a playfulness instrument were used to assess the patterns and quality of the interaction. A total of 20 dyads of children aged 24 to 58 months and their parents, living in migrant communities of Kyrgyzstan, participated in this study.

Results Major parent–child interaction patterns included 731 turns of parent–child dyads during 1040 episodes. Verbal as well as nonverbal behaviors of parents were observed while interacting with their children. Parents used direct and indirect commands most frequently, while praise was used the least in interactions. Children frequently used compliance as well as noncompliance when they interacted with their parents. Children had low playfulness scores while interacting with their parents. Cognitive spontaneity was the component with the lowest score among all sub-domains of playfulness.

Conclusion Future studies are recommended to develop strategies to facilitate parents' active interaction with their children, promote children's playfulness, and improve the quality of their mutual interaction.

Keywords Kyrgyz Republic, Parent–child interaction, Parenting, Playfulness

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Background

Kyrgyz Republic is a Central Asian country that has transitioned to independence in the post-Soviet era. In the pre-Soviet period, mothers, who often had 10 or more children, were responsible for childcare and all domestic tasks. During the Soviet period before independence, women's emancipation in communism led to parenting by both mothers and fathers, which was eventually fully replaced by state institutions [1]. Neither mothers nor fathers were involved in childcare or child-rearing [1, 2]. After the transition to democracy (post-Soviet era, independence), economic crisis caused changes in the school system, which resulted in a decrease in children's social organizations such as daycare and preschool. Therefore, young children stayed at home and the responsibility for child-rearing returned to families, who were unprepared for parenting. Decreased childcare facilities and social supports caused changes in family structure, increased immigration, and altered parenting practices especially in underserved districts such as migrant areas [1]. Migrant areas in Kyrgyz Republic were established around the border of the capital city after gaining independence from the former Soviet Union [3]. Many families migrated from rural areas or returned from Russia after independence. Children in those families were marginalized and disadvantaged because their parents were migrant workers or had an unregistered status [4]. There have been no studies of parenting with this population and that it is necessary to identify their parenting styles in the context of the Kyrgyz Republic.

Parents are an essential scaffolding system for their children's development and education in early childhood. In ecological systems theory, Wertsch and Bronfenbrenner stressed the importance of multiple environments for children, and especially their interactions with the immediate environment/microsystem, which influence children's growth as well as their relationships with others [5]. Nurturing and supportive interactions and relationships are seen as critical to foster healthy child development [5, 6]. Parent-child interaction (PCI) was considered as the center of children's social environment and induces positive parenting practices and a nurturing ecology for children [7]. However, the rapid transition in the countries of post-Soviet Central Asia led to decentralized and deteriorated child care systems. Parenting practices have been altered in the countries of the Commonwealth of Independent States (CIS), especially those with low resources. This has been the case for parents in Kyrgyz Republic [2].

Previous studies have explored the quality of PCI to suggest desirable parenting practices and child achievements [8, 9]. They described the quality of PCI in terms of parenting styles, patterns, and contents. Eyberg, Nelson,

Duke, and Boggs introduced the DPICS-III, a measuring instrument of PCI [10], based on parenting styles such as authoritative, authoritarian, and permissive as described by Baumrind [11]. Development-specific behavioral coding of PCIs has been widely used in early interventions and child welfare practice. Positive PCI leads to children acquiring trust and developing positive relationships with others. Maintaining a nurturing environment and positive affection are the tenets of PCI. The parent's emotional expression affects the child's emotional regulation as well as cognitive and social development [12]. Although parents' emotional expression depends on the characteristics of their children, it is also affected by the social context [13]. In order to interpret current parental practices in Kyrgyzstan, it is necessary to understand the changes in the roles of parents before and after Kyrgyz Republic became independent. In addition, child playfulness expressed in PCI demonstrates the quality of the interaction. Studies on young children's play and their development have shown that social changes may influence the quality and quantity of child play [14]. The decline of child play was connected with young children's declining self-regulation, leading to later cognitive and social-emotional developmental issues [15]. In this research, we used Dyadic Parent-Child Interaction Coding System (DPICS-III) and Barnett's playfulness instrument to identify pattern of parent-child interaction in the context of interaction with wooden blocks which could offer an open-ended, creative and valuable play and learning experience [16].

According to the UNICEF Multiple Indicator Cluster Survey 4, mothers and fathers in Kyrgyz Republic with young children demonstrated limited interaction in their daily lives, and an extremely low percentage of fathers reported that they interacted with their young children [17]. In addition, parents with children aged 2–7 years spent little time with their children while they were growing, at least left alone or left in the care of another child [17]. Furthermore, among post-Soviet countries, Kyrgyz Republic is reported to have the lowest level of parent-child interaction [18]. Most parents reported an extremely low level of practices fostering children's intellectual or personality development. An education without corporal punishment is critically important to foster child intellectual growth and self-development [19]. However, more than half of the parents in the UNICEF report revised in 2016 reported they sometimes or even often slapped their children. Therefore, negative effects of these parenting practices should be seriously introduced among parents and health care practitioners. Previous study on PCI examined the regions containing the migrant areas investigated in the present study, and identified the complexities of childhood in the Kyrgyz

society, finding that children were “unprotected” to a certain extent [20]. They recommended immediate interventions to solve this issue of unprotected childhood, which puts children’s emotional state at risk and involves physical and verbal aggression to children.

However, there is a lack of knowledge about how parents interact with their children, especially in Kyrgyz Republic. The purpose of this study was to identify the quality of the interaction between parent and child through analyzing patterns of PCI and playfulness of the child during play at home in underserved areas in Kyrgyz Republic.

Methods

Aim and design

We conducted descriptive pilot study to identify the interaction pattern of parent–child dyads and the playfulness of the child while interacting with the parent during play at home.

Participants

The inclusion criteria for the study were families with a child over the age of two, families who agreed to participate in this study and people registered in the two migrant districts where the upper-level project took place, and the exclusion criteria were families who could not speak Russian or Kyrgyz. Participants were 20 dyads of parents and their children living in migrant communities around Bishkek, the capital city of Kyrgyz Republic, where a child health promotion international development project supported by Korea International Cooperation Agency was implemented. There were 19 mothers and 1 father, with an average age of 30.70 (± 5.53) years and a range from 23 to 40. 50.0% of those parents were in their thirties; 55.0% had secondary education and the remaining parents graduated from primary schools only. Most families had their incomes from business, unskilled labor, professional work, weaving, and others. Of the 20 children, 9 were male (45.0%) and 11 (55.0%) females. The ages of child participants ranged from 24 to 58 months and the average was 37.95 (± 10.28) months. On average, families in the study had four children.

Data collection

We used convenience sampling of people who were available to participate during the project site visit period. Eligible parents who visited the health post for child health check-ups were contacted by phone by the research coordinator and community health worker registered in upper-level project and invited to participate in the study. A total of 20 parent–child dyads provided informed consent for participation in January 2018 and January 2019. Among four trained Korean research assistants and four

Kyrgyz translators, one Kyrgyz translator and one Korean research assistant visited each participants’ homes and asked parents to answer questions on both demographic and general characteristics of parents and children. Parents were then instructed to have about 30 min of free play with their children. During the 30-min session, the first 5 min were spent warming up with wood blocks, the next 10 min were spent on child-led play, the next 10 min were spent on parent-led play, and the last 5 min were spent cleaning up. Wood blocks were given as gifts. PCIs were then video-recorded while child and parent were playing with the wood blocks. We intended to let them have the similar play condition. At the same time, the wooden block has several merits for child personal social and emotional development. Previous studies on the child development reported that the wooden block could offer an open-ended and creative play as well as freedom to explore [16]. Prior to the home visit, we provided a thorough explanation of the process, analyzed parent–child interactions through video recordings after the visit, and revisited the home if there were any problems with the recording equipment or angles. We recorded the videos with three digital cameras (Samsung VLUU model) without internet connection and stored them on a computer server with a double lock immediately after recording and deleted them from the camera’s memory card.

The 20 video-recordings of PCIs were coded using the Dyadic Parent–Child Interaction Coding System (DPICS-III). Subsequently, coding was carried out by determining the episodes in the video. In one video, there were up to 1040 episodes where participants engaged in verbal and non-verbal communication processes. Each communicative process was assigned to a specific category of the relationship between the parent and child. In the study, the 20 video files were transcribed and coded by four trained researchers from nursing faculties in a Kyrgyz national university. They rated the individual PCI video file using the scale of the playfulness instrument.

Dyadic Parent–Child Interaction Coding System (DPICS-III)

We used the DPICS-III to code PCI during free play [10]. This tool was developed based on parenting styles (authoritative, authoritarian, and permissive) defined by Baumrind [11], and child behaviors included in optimal behavioral functioning of young children. The DPICS-III is a tool to code behavioral observations of about 25 min of parent-led, child-led, and clean-up plays. For effective interaction observations, building blocks or drawing materials were recommended and in this study, we suggested wood blocks for child-led play with one parent. This tool includes coding categories for verbalization, vocalization, response, and physical for aspects of

parent–child interaction. For each of the four domains, items are presented that can be coded separately for parents and children. For parents, verbalization includes negative talk, commands (direct/indirect), praise (labeled/unlabeled), information questions, descriptive/reflective questions, reflective statements, behavioral descriptions, and neutral talk, and physical includes negative touch and positive touch. The child’s verbalization includes negative talk, command, question, and prosocial talk; vocalization includes yell and whine; response includes answer, no answer, no opportunity for answer, comply, noncomply, and no opportunity for compliance; and physical includes negative touch and positive touch. Among these items, neutral talk means statements that introducing information about people, objects, events, or activities, or indicate attention to the child. Prosocial talk refers to the incorporation of several categories of language that contribute positively to parent–child interactions, and no opportunity for answer (compliance) is coded when the child does not have an adequate chance to provide the information requested by the parent in an informational question (command). For scoring, we followed the manual of the DPICS-III.

Playfulness

Barnett’s playfulness instrument [21] was derived from Lieberman’s [22, 23] scale for young children. Barnett’s playfulness score reflects a child-based perspective of PCI and is a qualitative and quantitative description of play. This scale yields both quantitative and qualitative scores for each of the composite playfulness dimensions (i.e., physical spontaneity, cognitive spontaneity, social spontaneity, manifest joy, and sense of humor). Physical spontaneity refers to the level of coordination and motor activity of the child during the game. Cognitive spontaneity emphasizes the creative qualities of the child’s play and the degree of ability to take different characteristic roles, invent non-standard games, or use non-template objects in the game. Social spontaneity is the quality of the child’s interaction with others during the game. Manifest joy refers to the expressive nature of the game (the expression of enthusiasm, pleasure, vocalization during the game). Sense of humor includes joking and eccentricity. Additional items were included within each dimension, such that there were four to five items per playfulness dimension. The final instrument consists of 23 items, each scored from 1 to 5 (“very often” to “very rarely”). These response categories represent a departure from the original Lieberman scoring system. The total sum across all dimensions yields a total composite playfulness score.

Data analysis

Data were analyzed using SPSS version 23. For analyses of PCI quality, DPICS-III and the playfulness instrument were used. For analyses of dyadic PCI scores, frequency and contents of interaction behaviors among parents and children were analyzed from the coded data. For analyses of playfulness scores, mean and standard deviation of overall and subcategories were estimated.

Translation, cultural adaptation and reliability

For the cultural adaptation of PCI, five faculties from the health department in Kyrgyz university reviewed and discussed each item. In order to increase the reliability of the coding, four trained researchers and the principal investigator independently coded five dyads of PCI from a preliminary study using the DPICS-III and the playfulness tool. The coded data were reviewed and adjustments between the observers were made until they reached 80% agreement. The original English versions of DPICS-III and the playfulness instrument were translated into Russian versions for the trained researchers to use. The translation process including forward translation, expert panel back-translation, pre-testing and cognitive interviewing, was done according to the “World Health Organization Process of Translation and Adaptation of Instruments” guideline [24].

Results

Parent interaction behaviors in parent–child dyads

The overall number of interaction episodes was 1040. Among the episodes, 731 parent–child interaction turns were demonstrated. In those episodes, the number of parent behaviors was 1413 and the number of child behaviors was 825. Table 1 shows parent interaction behaviors in observed parent–child dyads. Most episodes were parent verbal behaviors, while some were nonverbal behaviors. Questions (26.4%) was the most frequently used parent behavior in this study, followed by command (24.5%). Labeled praise (0.6%) was the least used behavior in the interaction.

Child interaction behaviors in parent–child dyads

Table 2 shows the child interaction behaviors in the PCI. In child interaction behaviors, answer to questions (31.4%) was the most frequently used, followed by compliance (26.4%) among command. Positive touch (0.5%) was the least used behavior when interacting with their parents, followed by “no opportunity for compliance” (0.7%).

Table 1 Parent interaction in parent–child dyads ($n = 1413$)

Factors of interaction	n	%
Command	346	24.5
Direct command	185	13.1
Verbal	164	11.6
Nonverbal	21	1.5
Indirect command	161	11.4
Verbal	107	7.6
Nonverbal	54	.8
Labeled praise	29	2.1
Verbal	28	2.0
Nonverbal	1	0.1
Unlabeled praise	20	1.4
Verbal	17	1.2
Nonverbal	3	0.2
Questions	373	26.4
Information Question	177	12.5
Descriptive/Reflective Question	196	13.9
Reflective statement	34	2.4
Verbal	11	0.8
Nonverbal	23	1.6
Behavioral description	118	8.4
Verbal	58	4.1
Nonverbal	60	4.2
Neutral Talk	132	9.3
Touch	13	0.9
Negative Touch	4	0.3
Positive Touch	9	0.6
Negative talk	2	0.1

Playfulness during PCI

The mean child playfulness score was $2.7(\pm 0.83)$ over 4.0 (Table 3). Physical spontaneity, which involves the movement of the child during play, was the component with the highest score among all subdomains of playfulness, followed by social spontaneity. Children's movements were generally well-coordinated during play activities and children were physically active during play in terms of physical spontaneity. As for social spontaneity, children easily responded to the approach of others during play. Among subcategories of playfulness, sense of humor and cognitive spontaneity were identified at low levels. Children were not likely to take on the role of different characters or use non-traditional objects for playing, which are exemplary of cognitive spontaneity. As for sense of humor, children were not likely to tell funny stories, joke with parents, or gently tease others during play.

Table 2 Child interaction in parent-child dyads ($n=825$)

Factors of interaction	n	%
Negative Talk	20	2.4
Question	53	6.4
General question	22	2.7
Information question	31	3.8
Prosocial Talk	69	8.4
Vocalization	46	5.6
Yell	25	3.0
Whine	21	2.5
Responses to questions	337	40.8
Answer	259	31.4
No Answer	61	7.4
no opportunity for Answer	17	2.1
Command	289	35.0
Compliance	218	26.4
Noncompliance	65	7.9
No opportunity for compliance	6	0.7
Touch	11	1.3
Negative touch	7	0.8
Positive Touch	4	0.5

Discussion

This study identified the quality of the interaction between parent and child through patterns of PCI and playfulness during play at home in Kyrgyz Republic. Parents in this study frequently used questions and commands but were unlikely to use praise with their children when interacting during free play, which demonstrated that parents used informative communication more than affective communication. The dominant interaction behaviors of parents' questions and commands, and children's response and compliance observed in the present study are similar to previous studies conducted in other cultures [25–27]. Shvedovskaya and Archakova addressed the activity-based typology of PCI according to conflictual, harmonious, distant, and dominant types, which differ both in activity (role distribution, character of realization of task-oriented collaboration) and emotional (emotional vector of interactions, emotional reaction to success or failure) aspects of interactions [27]. They suggested that the domination-subordination imbalance caused potential difficulties in further development.

In general, children tend to express their emotions during interactions, especially with parents. In this study, children predominantly showed compliant interaction behaviors including response to questions and compliance to commands and demonstrated a low level of playfulness while interacting with their parents at home. A child's compliance behavior could be considered an

Table 3 Playfulness during parent–child interaction ($n = 20$)

Subcategory	Item	Mean	SD
1. Physical spontaneity	1. Movement of the child during the game as a whole is well coordinated	4.25	1.020
	2. The child is physically active during gaming activities	3.65	1.089
	3. The child prefers to be more active during the game than to keep silence	3.40	1.231
	4. The child during the game runs a lot (jumps, bounces, jumps)	2.25	1.020
	Subtotal	3.39	0.961
2. Social spontaneity	5. During the game, the child easily responds to the approaches of others	3.75	0.967
	6. The child begins to play with others	2.90	1.483
	7. The child plays together with other children	2.00	1.338
	8. A child to share with toys	3.30	1.302
	9. The child during the game assumes the role of leadership	3.15	1.461
	Subtotal	3.02	0.947
3. Cognitive spontaneity	10. The child comes up with his / her own games	3.35	1.496
	11. The child uses non-traditional objects (alien to conventions) for games	2.00	1.214
	12. The child in the game takes on the role of different characters	1.60	0.754
	13. A child prefers to stay in one action while playing, than to change actions	3.10	1.447
	Subtotal	2.51	0.767
4. Manifestation of fun	14. The child expresses pleasure during the game	3.35	1.226
	15. The child demonstrates abundance during the game	2.75	1.446
	16. The child shows enthusiasm during the game	3.10	1.483
	17. The child restrains the expression of emotion during the game	2.50	1.433
	18. The child sings and talks during the game	3.05	1.638
	Subtotal	2.95	1.139
5. Sense of humor	19. A child likes to joke with other children	1.90	1.021
	20. The child gently teases others during the game	1.95	0.945
	21. The child tells funny stories	1.75	0.851
	22. A child laughs at humorous stories	2.00	1.026
	23. A child likes to fool around (to pretend to be a clown) while playing	2.00	1.214
	Subtotal	1.92	0.852
Total		2.74	0.833

indicator of the child's internalization of social frame such as society's prevalent norms and values [28]. Compliant behaviors due to the presence of an authority figure without sincere commitment or self-internalization, compared to a child's wholehearted compliance, is associated with negative parenting. Nevertheless, children could avoid fulfilling their expectations, occasionally express negative feelings, and distance themselves from social rules. Bühler-Niederberger and Schwitek found and argued that young Kyrgyz children were more likely to accept authority and even be proud of their compliance, which demonstrated the hierarchical order taught to children of this age [29]; however, this could develop into aggression in situations in which children's sense of self is undermined.

Children showed a low level of playfulness in their free play with parents at home; in particular, they showed poor sense of humor and low cognitive spontaneity. The characteristics of sense of humor, such as telling funny

stories, joking with parents, and gently teasing others during the play, seem to be slightly demanding expectations for the young children in the study. Although this playfulness instrument was validated for the age range of the study participants, further studies to evaluate such demanding items are recommended. Cognitive spontaneity is mostly related to child cognition and creativity, and the way an individual performs a task [30, 31]. Children who are more playful than their peers perform better at divergent-thinking tasks [32]. In another study, gifted children demonstrated higher levels of physical, social, and cognitive play styles than their peers of normal intelligence [33]. Although international efforts such as UNICEF Early Child Development (ECD) have continued to tackle the decreased cognitive abilities caused by child malnutrition and related stunting prevalent in underserved areas, the low level of cognitive spontaneity identified in this study may warrant further study.

The findings of this study on PCI and playfulness reflect comparatively the current parenting practices in Kyrgyz Republic. A UNICEF report noted critically that current Kyrgyz parents spend little time with preschool children, pay little attention to their development, and practice a harsh discipline [17, 18, 34, 35]. WHO and UNICEF presented responsive parenting is one of the critical domains in nurturing care for better child development outcomes and even future wage differences [36]. The importance of a nurturing environment has been considered an essential condition of successful parenting and child growth and development. In the dyadic interaction, parents have a crucial role in the quality of the interaction. However, as this study has demonstrated, the children in the Kyrgyz Republic have a lack of both quality and quantity of interaction with their parents, and this might be related to their historical and cultural context. Post-Soviet parents in CIS countries, who had fewer opportunities of exposure to positive parenting practices in their family environments, may convey less nurturing care towards their children, which inevitably affects the whole parent-child dyad. Social changes can affect general family practices including child caring, which influences the quality of PCI. After enjoying extraordinary, centralized, nationwide, universal, free-of-charge childcare services during the Soviet period in Central Asia, the situation of Kyrgyz parents deteriorated with the rapid decline in childcare support in the post-Soviet social system, which seriously impacted on the quality of PCI in Kyrgyz families [2]. Considering the PCI shaped by the sociocultural context, it is necessary to develop strategies for enhancing PCI not just among families but also to raise social awareness.

This study has several limitations. Firstly, it included children from a narrow age range, only one father as a participant and small number of samples, which may limit the research findings' generalizability. Secondly, it did not contain child play preferences in the video-audio recordings, which may have potentially impacted on child interaction behaviors as well as the level of playfulness. Third, due to the age and developmental status of the child and playing materials, there might be some practical limitations to the details of the tools for playfulness used in this study. Lastly, the lack of previous studies on PCI in CIS countries including Kyrgyz Republic may limit the comparison of findings. Therefore, the results should be carefully interpreted, specifically, in Rogoff's perspectives on children's development from cultural psychology [37]. Nevertheless, the multinational collaboration between Kyrgyz and Korean researchers in the overall research process, especially data collection, coding, and interpretation, may provide valuable resources to ensure better approaches to international development efforts. We recommend future studies to

validate parent-child interactions with a larger number of migrants in Kyrgyz Republic, with a balanced participation of men and women to compare maternal and paternal interactions. In addition, it would be necessary to widen the age range of children to identify patterns of parent-child interaction.

Conclusion

Parents and children showed demands and compliance, respectively, while interacting each other. Children showed a poor sense of humor and low cognitive spontaneity during free play with parental presence. Given that a nurturing environment and stimulation are critical for improved child developmental outcomes, and that parents are a critical scaffolding system for child development, more strategies are needed to facilitate parents' active interaction and play with their children. These should include promoting PCI, encouraging parents to engage in their children's development, and raising awareness in society about the importance of microsystems in childhood. Efforts should include not only enhancing parenting skills but also increasing social awareness of the impact of individual, family, and socio-political contexts. Multinational researchers collaborating between Kyrgyz Republic and Korea in this study may convey meaningful findings across diverse fields despite barriers such as cultural differences and long-distance communication.

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Authors' contributions

DR and HS conceived the study and were in charge of overall direction and planning. DR, SS, HM, MM, ZBB, NTD, EMA and AAT carried out the data collection. DR, HS, SS, ZBB, EMA, NTD and AAT analyzed and interpreted the data. DR, HS and SS wrote the manuscript with input from authors and all authors read and approved the final manuscript.

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Availability of data and materials

The datasets from this study are not publicly available due to participants' privacy or ethical restrictions. However, derived data supporting the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

This study was conducted as a part of an official development assistance project and was reviewed and approved by Kyung Hee University Institutional Review Board (KHSIRB-17-021). All methods in this study were carried out in accordance with relevant guidelines and regulations. Parents were given detailed information about the study and were assured they could withdraw

their participation at any time. Written informed consents including the research process for video recording from parents were acquired.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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