

The Process and Effects of Group Sandplay on the Intervention of the Children's Problem Behaviour From the Perspective of Mentalization

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Research article

Keywords: Mentalization, group sandplay, interactions

Posted Date: April 6th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-384441/v1>

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The process and effects of group sandplay on the intervention of the children's problem behaviour from the perspective of mentalization

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ABSTRACT

In this study, we explored the interaction feature among children, and between children and therapists in a group sandplay based on mentalization theory. Six children with behavioural problems are selected and divided into two groups for 10 sandplay therapy sessions lasting for 50 minutes each time. All sandplay videos are coded for behaviour according to grounded theory, and the frequency changes of each behaviour in the early, middle and late stages of the intervention process are compared. The results show that group sandplay based on mentalization can reduce the intervention of the children during sandplay. Empathetic consultation relationship in sandplay based on mentalization theory can improve children's problem behaviors.

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Mentalization is initiated by the English psychoanalyst Fonagy. It refers to the basic capability acquired by humanin understanding the psychology of themselves and others (Allen, 2003). Specifically, it pertains to the attempt to understand the mental status of oneself and others and the initial ability to understand purposive behaviour and interpersonal interaction accurately through these underlying mental statuses. Mentalization plays the identification, accommodation and expression functions in the process of environment adjustment.

The initiation of mentalization is related to the development and safety of attachment patterns and the mirroring function of caregivers. The safe attachment pattern is prepared for the interactive teaching between the mother and the baby. In a safe attachment relationship, mothers can stimulate their children's cognitive trust. Such trust enables the promotion of the interaction and teaching between the mother and the child (Kim, 2015). The 'mirroring' function of the caregivers promotes the development of children's mentalization. When the caregivers can mark and react appropriately to the babies' emotions, the children will believe that their emotions can be seen and handled. Meanwhile, the children will also be aware that they are different from the caregivers, who can help the children in the transformation from subjective omnipotence to objective reality.

In recent years, the psychotherapy of the children based on mentalization theory has attracted increasing attention from scholars. Assistance to children can be divided into three categories. The first category involves therapy to the mother (Slade et al., 2020; Suchman et al.,2017; Enav et al.,2019). In the second category, family therapy is co-participated by the parents and the children (Muller & Midgley, 2015; Midgley el al.,2019). The above two

studies are aimed at improving the mentalization ability of the parents and the interaction skills with the children to achieve the mentalization of the children effectively. Meanwhile, the third category uses game therapy for children (Halfon, Bekar, & Gürleyen, 2017; Halfon & Bulut, 2019; Pereplechikova & Goodman, 2014; Ramires, Schwan, & Midgley, 2012).

During game therapy, the therapist will help children enhance the reflecting process, which is achieved by providing game chances, feedback emotion and establishing an empathy relationship with the children (Pereplechikova & Goodman, 2014). Such process is similar to the interaction process between mother and infant. The therapist needs to provide a safe space for the children, where they need not be worried about being harmed. In such space, game, as a symbol, can help the children treat the things that they regard as threats from a backward perspective. This can gradually help them distinguish the boundary between reality and imagination. Moreover, the therapists, as the container, are the mirror of the children. They can help the children in observing their emotions and understanding themselves (Halfon et al., 2017). In such way, children will reflect on themselves better and enhance their understanding of themselves and others. The research shows that therapy models based on mentalization can enhance the mentalization ability and significantly improve children's externalizing problems (Byrne, Murphy, & Connon, 2020; Halfon & Bulut, 2019).

Sandplay therapy was founded by Dora Kalff. It features unconscious work, the symbolic analysis principle and the inductive healing mechanism. Similar to game therapy based on mentalization, sandplay is also symbolic. In this approach, children construct their inner world through sand and tools to express their emotions. The therapist provides feedback

on the interactions in the group sandplay process of the children, thus helping the children express their thoughts and emotions and enhancing their mentalization development.

The current studies are mainly focused on the exploration of the results of game therapy based on mentalization theory, while few are focused on the process. Few potential influencing factors have been initiated. In this study, the influence of the group sandplay based on mentalization theory on the children's behaviours is explored. Moreover, the interaction changes between the children and their companion, the children and the therapist, are analysed in the process.

Methods

Objects

The research objects are children in kindergarten and first graders in primary school in Shanghai. Six children are selected, who are recommended by the teacher and then screened using the *Conners Child Behaviour Scale (for teachers)*, whose scores are higher than two standard deviations among the four scores according to the norm standard (Fan & Du, 2004). Six children are classified into two groups according to their ages, with three in each group. The average age of children in the primary school group is 6.7 years old, all of which are boys. The average age of children in the kindergarten group is 4.7 years old, with two boys and one girl. The children are all given consent by their parents to participate in the sandplay. In addition, an informed consent form is signed. This study has passed the ethical review.

Research tools

Conners Child Behaviour Scale (for teachers): A total of 28 items are included in the

scale, each of which is scored from 0 to 3. Finally, four factors are evaluated: conduct problems, hyperactivity, inattention-passiveness and hyperactivity index. The scale is determined to have good reliability and validity.

Manual for coding the children's behaviour in sandplay: In the previous literature, the main coding dimensions in the children's game process include the relationship with the therapist and the interaction pattern with peers (Karaca, Uzun, & Metin, 2020; Kennedy-Behr, Rodger, & Mickan, 2013; Trawick-Smith & Dziurgot, 2011). The manual for coding the children's behaviour in the group sandplay interactions is formed according to the mentioned coding dimensions and the consideration of the content coding gained by the relevant characteristics of the children's group sandplay.

Table 1

Manual for coding the children's behaviour in the group sandplay interactions

Interaction	Specific characteristics	Examples
Express negative emotions to the therapist	Expressing disgust to the therapist or disaffection to the therapist's behaviour	As the therapist reminds the children that the time limit is approaching, member D is dissatisfied with the therapist and says, 'You must be a false teacher,. A real teacher would not be like this'.
Express positive emotions to the therapist	Show preference	Member F says to the therapist, 'I am fond of you'.
	Invite the therapist to join the play or show curiosity to the	Member D says to the therapist, 'please play with us, and this one is for you (hold a sanding

	therapist	tool for the therapist)’. Member E holds the defected sanding equipment and says to the therapist, ‘This head is taken off. I dreamt yesterday that my mother was broken’.
	Share experiences with the therapist	Member B makes juice from the plasticine and says to the therapist, ‘Here you are’.
	Feed or help the therapist symbolically	Member F first marks a place for him to play. Afterwards, he sets a tree in the sand. Then, member D pulls out the tree and laughs. Member F shouts out angrily, ‘What are you doing now!’.
Interfere the peers during play	Digging sand away, taking sand tools away or invading within the ‘boundary’ of others.	Member D holds a stick to pull down the sanding tools that member E has just placed.
	Deliberately knock over or destroy others’ sand tools by hand or using tools.	Member B buries the sand tools placed by member A with sand.
	Change,remove, inverse, bury or place others’ sand tools first	Member C says to member A, ‘You put it wrongly. It should be put backwards’.
	Evaluate others’ arrangements of sanding tools	Member C says to member B, ‘You can build a house’.
	Advise on the sanding tools arrangements of others	Member F says to member D, ‘Give me the spoon!’.
	Request for others to pass the sanding tools	Member B shouts out very angrily about
Attack the	Verbal threat	

peers during		member A's interference, 'I will kill you'.
play	Depreciating others	When member D argues with member F, member F shouts, 'You are a bad boy. You're not welcomed'.
	Teasing (prank)	When the snake's sanding tool is thrown to member F by member D, member F screams, while member D laughs.
	Rob things and push others	When member F and member D fight for a bottle, member F screams and pushes member D.
	Throw sand or sanding tools at others	When member D is angry, he dumps the sand onto member E with a shovel.
	Hit or push others	Member B is very dissatisfied with member A and pushes him angrily.
Cooperate with	Actively help others find sand	As member F cannot find the sand tool she wants, member D helps her find it.
the peers during	tools	
play	Share with peers and be accepted	Member D hands the spoon to member F and says, 'This is for you to scoop sand'.
	Help others settle conflicts	Members D and E are quarrelling. Member F says to them, 'Stop quarrelling. You guys also say sorry to each other, OK?'.
	Negotiate with others	Pointing to a tool, member F asks member D,

	‘Can I borrow this for a while?’.
Play with a certain common purpose	Member E says, ‘Let’s make milk together!’. Member D helps member E in scooping sand into the bottle.
Cooperate with others in placing or no opposition in fixing the sand tools.	Member B digs a river, and member A places a bridge on the river.
Feed or care for others symbolically	Member B says to member C, ‘I own a dessert factory. What juice would you like to drink?’. Afterwards, member B pretends to prepare juice for member C to drink.

Research process

Currently, sandplay therapy has been widely used for children with behavioural problems. In most studies, the duration of the therapy ranges between 10 and 20 sessions (Han, Lee, & Suh, 2017; Lu, Petersen, Lacroix, & Rousseau, 2010; Wang et al., 2017). In this study, 10 therapy sessions are selected, each of which lasts for 50 minutes. Children’s interaction changes and interaction relations are studied in a short time. The therapist is psychotherapists certified by the National Health Commission, who have received systematic training in sandplay therapy. In addition, the therapist is supervised by a psychoanalyst from the International Association of Analytical Psychology (IAAP) during the therapy.

Three children are examined as a group to observe the interaction changes in the

sandplay process. The therapy room is independent and quiet. In the room, a standard sand table and a full range of sand tools are equipped.

In the sandplay therapy, sandplay is firstly introduced to the children. Then, they are invited to use sand tools to build a scene as they want. The therapist should try to avoid evaluating and interpreting the children's work, only to help the child feel their emotions and find the reasons of the emotions. After the play, the therapist should take pictures of the sandplay and remove it.

Data statistics are realised through IBM SPSS Statistics 22 software. The therapy is divided into three stages: early, middle and later stages. Sessions 1–3 are the early treatment period. Sessions 4–6 are the middle treatment period. Meanwhile, sessions 7–10 are the later treatment period. All the videos recorded from the sessions are encoded. A non-parametric test is performed by taking the treatment stage as the independent variable and the frequency of various interactive behaviours during the sandplay as the dependent variable. Moreover, the relevant analysis on the various behaviours of children is carried out.

Results

Use of sand table as a symbolic tool

In the treatment, the sandplay as a symbolic tool, provides a 'transition space' for children. In sandplays, children can express their experiences symbolically. When symbols are used, plays can help children connect subjective reality with actual reality. The use of transitional space enables the children to distinguish imagination from reality better, as well as the self from others.

Among children in the primary school group, the boundary of member B is always invaded. Therefore, in the sandplay, he builds a house and arranges numerous explosives, poisons and power grids around the house. He buries explosives to protect the house. Upon doing this, member B says, 'There is a power grid and poison. No one can enter, nor can the dinosaurs'. He shows his fear in this way. The therapist will respond, 'Dinosaurs threaten your little house, and you are scared (mark the emotions of children). You protect the house by the power grids and poison (describe the physical status of the sanding tool) so that others will not harm the small house, and the small house will be safe (connect the children's behaviour and emotions in a symbolic way)'. The child will understand the cause of the behaviour through such a response, and confirm that he is safe. In the later stage of treatment, member B behaves less defensively. In the last few sandplays, he builds a 'dessert factory' in the original site of the 'poisonous gas field', as he wants to make desserts for other peers.

Influence of the emotion feedback in the children's sandplay process on the children's behaviours

The research shows that the methods in which the therapist understands children's feelings, accommodates children's emotions and helps children understand the production of these emotions are the common factors that enable CBT and PDT to be effective (Goodman, Midgley, & Schneider, 2016).

The therapist helps the children understand their own thoughts and improve their emotions through giving feedback on the children's thoughts and emotions. Both the children in the kindergarten and in the primary school group have difficulty understanding one another's emotions and needs. For example, in the second therapy session of the kindergarten

group, member F is planting a tree, while member D seems interested in knocking down the tree. Member F becomes extremely angry and shouts at member D saying, ‘Member D is a troublemaker, and my home will not welcome you. Here, for member D’s prank, member F directly shows dissatisfaction. The therapist attempt to mark these emotions in such similar interactions. For the above scenes, the therapist responds as follows: ‘Member F feels extremely angry, as member F does not hope to see his tree being pulled down’. After several repetitions, in the later stage of treatment, member F expresses, ‘I feel sad, as member D has been bothering me’, concerning member D’s interference. Upon such time, member D gives feedback and says, ‘I was trying to help you’. When they can express their own thoughts and understand each other’s thoughts, the cooperation interactions are increased. The average occurrence of the behaviours in the children’s interactions are seen in Table 2.

Table 2

Average occurrence of behaviours in children’s interactions (M±SD)

	Early stage	Middle stage	Later stage
Total interference times	10.72±7.87	10.24±4.38	4.76±3.36
Total attack times	4.05±3.90	5.82±3.92	4.59±3.68
Cooperation	2.78±2.37	6.24±4.89	4.82±4.23

The results of the M rank sum test show that children’s interference behaviours are significantly reduced ($X^2 = 6.333$, $p < 0.05$). The attack behaviour ($X^2 = 3.000$, $P = 0.223$) and cooperative behaviour ($X^2 = 2.818$, $P = 0.244$) are not significantly different.

Empathy in the sandplay

In the therapy, member E shares a dream about the broken mother with the therapist. After the sharing, he uses a ‘monster’ without a head to represent the ‘broken mother’. In this way, his emotions are given a tangible shape. After that, he says, ‘I am not afraid, as I know it is fake’ and finds the head for the ‘monster’.

In the later stage of the sandplay therapy, the children express more positive emotions to the therapist. For example, they make the cake for the therapist. With the increase of such actions, the cooperation behaviours of the children in the sandplay correspondingly increase. In the last few sandplay sessions of the kindergarten group, all the children are gathered for a ‘cake party’.

During the therapy, positive emotions ($X^2 = 7.176, p < 0.05$) and negative emotions ($X^2 = 8.400, p < 0.05$) expressed by the children to the therapist both increase. As seen in Table 3, both positive emotions and negative emotions expressed by the children to the therapist are positively related to cooperation behaviour. Positive emotions expressed by the children to the therapist are negatively related to interference behaviours, as seen in Table 4.

Table 3

Average times of emotions expressed by the children to the therapist ($M \pm SD$)

	Early stage	Middle stage	Later stage
Express positive emotions to the therapist	0.06 ± 0.24	0.12 ± 0.33	0.83 ± 1.01
Express negative emotions to the therapist	0.06 ± 0.24	0.41 ± 0.51	0.59 ± 0.51

Table 4

Relevant analysis of the emotion expression of the children to the therapist and the peer interactions

	Express positive emotions to the therapist	Express negative emotions to the therapist
Total interference times	-.286*	-0.066
Total attack times	-0.125	0.196
Cooperation	0.291*	0.583**

Note. * $p < 0.05$, ** $P < 0.01$

The changes of children's interactive behaviour and emotional expression to the therapist is shown in the figure below (Fig. 1 and Fig. 2).

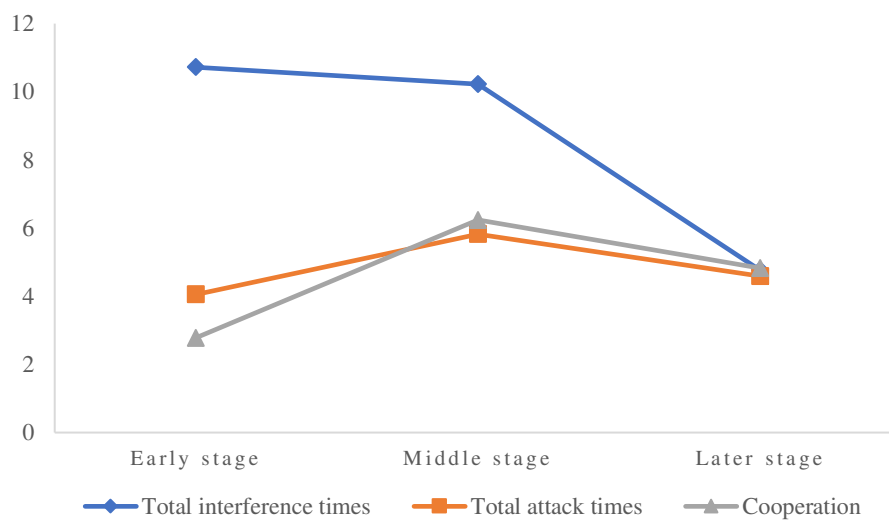


Fig. 1. Average children's children's interactions

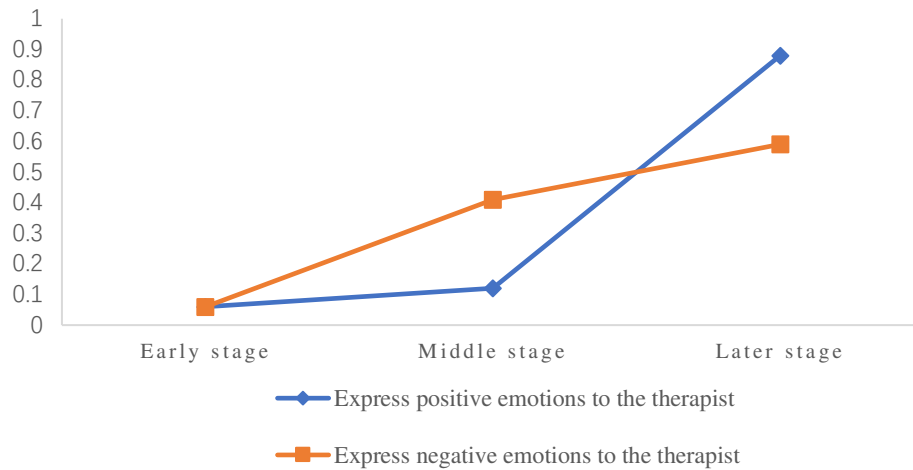


Fig. 2. Average emotion expression of the children to the therapist

Analysis result of the scorer's consistency test

Each video is randomly selected for 5 minutes and is coded by two researchers who have studied the coding manual back-to-back. The scorer's consistency test of the children's interactions are calculated through the Kappa coefficient. The results are shown in Table 5.

Table 5

Scorer's consistency test results of the children's interactions

Interactions	Kappa value	Significance level
Interference behaviour	0.874	0.000
Attack behaviour	0.867	0.000
Cooperation behaviour	0.833	0.000
Express positive emotions to the therapist	0.790	0.000
Express negative emotions to the therapist	1	0.000

As seen in Table 5, the Kappa consistency coefficients of the two scorers' evaluations on the children's interactions are both above 0.70 ($p < 0.01$). As the scorers' consistency is

high, this study is of good scorer reliability.

Discussion

During the sandplay therapy process, the therapist helps the children develop mentalization through giving feedback on the children's thoughts and emotions and developing empathy with the sand table, the symbolic tool, as the intermediary.

During the play, the therapist provides a safe environment that is unconditionally accommodated and materials for expressing attack emotions. Moreover, the therapist also sets a certain rule to protect the body and emotional safety. This can help the children better express the attack and other negative emotions (Ritzi, Ray, & Schumann, 2017).

In the early and middle stages of the therapy, children show a high level of emotional arousal, and their attack behaviour increases. This trend is called the 'arousing spike' (Hayes et al., 2005). During the process, the symptoms deteriorate at first and then improve. Research by Halfon et al. (2016) obtains similar conclusions. Halfon and Bulut (2019) believe that this outcome occurs because at the initial stages, the children express their internal conflict through symbols. The intense emotional arousal leads to the exacerbation of their behaviours in the early stage. Children who are more adherent to therapy show that their emotional control decreases at the beginning and then increases. A stronger adherence leads to a higher level of emotional control achieved after treatment. In such process, the therapist will help the children mark their emotions and help them understand why they possess such emotions. The utilisation of the mental status vocabulary by the therapist (Halfon et al., 2017), and the reflection and handling of the emotions and cognition by the children are beneficial to the improvement of emotions (Hayes et al., 2005).

In this study, the interference behaviours of the children are reduced, while the cooperation behaviours are not significantly different, which is consistent with the previous study (Han et al., 2017). This outcome is likely because the cooperation behaviours of the children require higher social skills, such as empathy, morality and pro-social behaviour. Moreover, Most of the objects in this study are boys, which may also lead to an insignificant increase in the cooperation behaviour. Previous studies have found that compared with girls, the cooperation behaviour of boys occur later with a shorter duration (Steenbeek, Van der Aalsvoort, & Van Geert, 2014).

In this study, the children initially express negative emotions to the therapist. This observation is related to the ability of children in object usage. The concept of object usage was initiated by Winnicott. She believes that aggressiveness occupies a transitional position between subjective omnipotence and objective reality. While the object is used, the therapist needs to treat the children in the same manner and nature as before after being attacked. By using the object, children can treat it as a whole other person. When the children establish an attachment relationship with the therapist, the children believe that they can safely express their emotions to the therapist. Then, the therapist can mediate the children's emotions (Halfon, 2017), help them handle more intense emotions and reduce chaos in the sandplay.

In conclusion, group sandplay based on mentalization can reduce the interference behaviours of children during sandplay and help the children better handle boundary problems in interpersonal relationships. Moreover, the use of symbols, the empathetic relationship between therapy and children, and the improvement of the reflection process are essential for the development of children's mentalization.

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Declarations:

This study has passed the ethical review by department of psychology, Fudan University

Children's parents consent for publication

The datasets during and analysed during the current study available from the corresponding author on reasonable request.

The authors declare that they have no competing interests

This research did not receive any financial support

K.C. designed the research and provided supervision during the therapy, QH.Z given the therapy, analyzed the data and finished the manuscript. All authors read and approved the final manuscript.

Figures

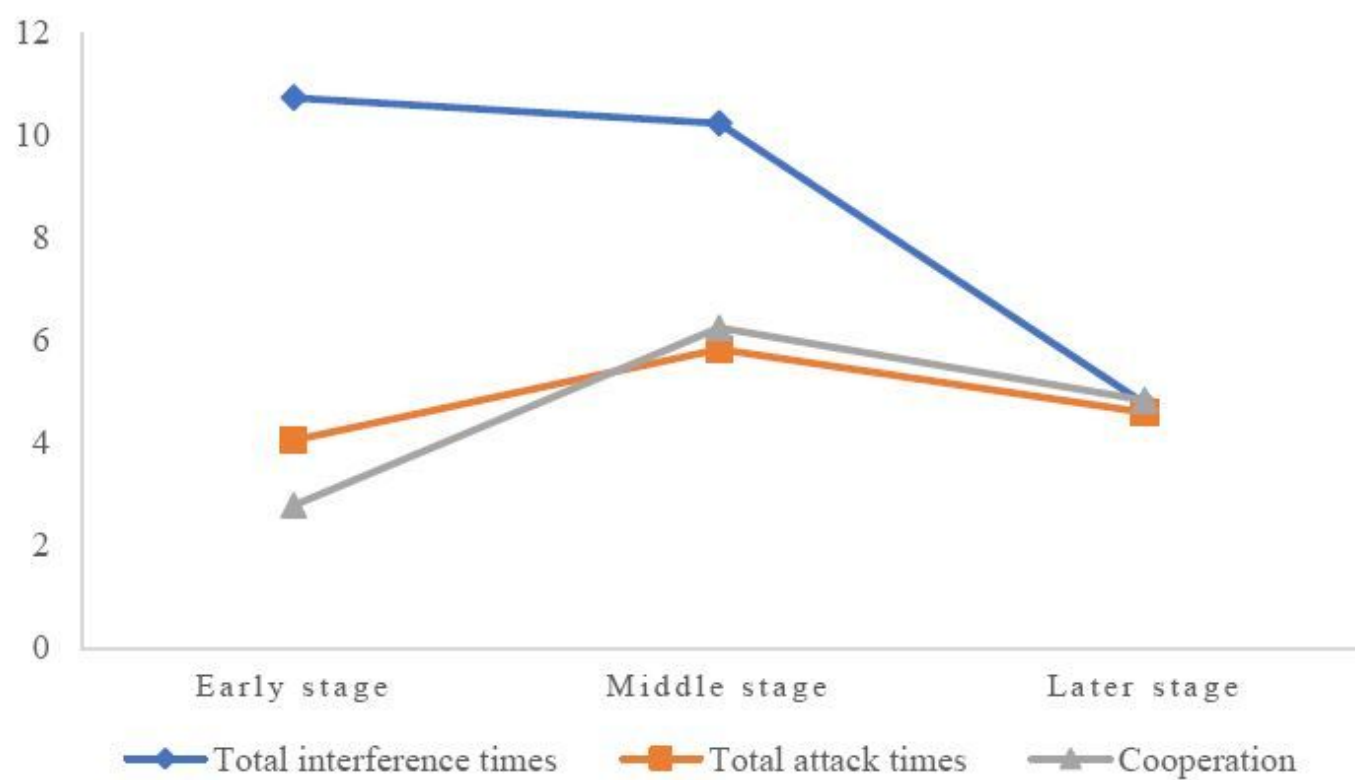


Figure 1

Average children's children's interactions

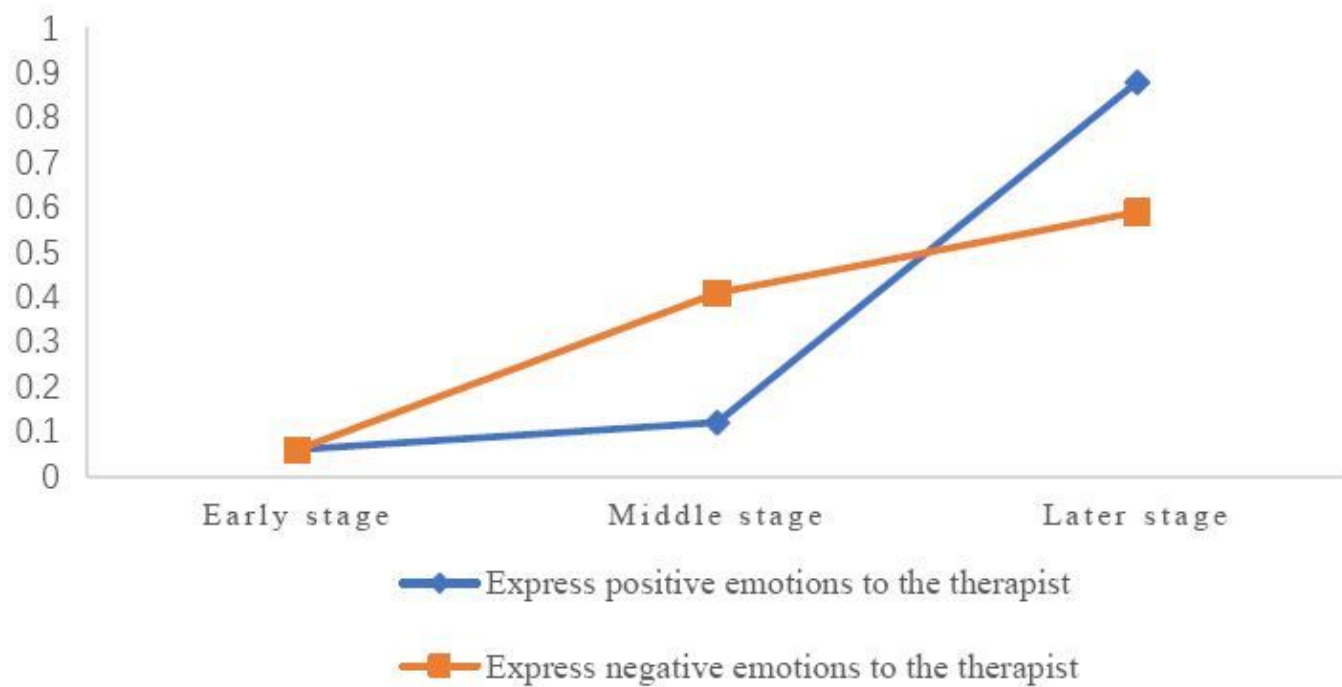


Figure 2

Average emotion expression of the children to the therapist