Theory of Mind, Roles, and the Development of Emotion Regulation in Early Childhood

Erna Risnawati¹
Laila Meilyandrie Indah Wardani²
Muktia Pramitasari³
Alpin Herman Saputra⁴

Universitas Terbuka, Indonesia¹³⁴
Universitas Mercu Buana²

DOI: https://doi.org/10.21009/JPUD.172.01
Accepted: June - October 2023; Published: November 30th, 2023

ABSTRACT: The ability to regulate children's emotions is the basis for psychosocial development which is the key to future success, and they can quickly adapt to other people or situations that may not always be comfortable for them. Theory of mind (ToM) is a construct used to describe the ability to interpret other people's mental states, which then develops into the ability to empathize. This study examines how the theory of mind contributes to the development of emotion regulation in children aged 4, 5, and 6 years. This research used a quasi-experimental design to find the effect of ToM stimulation on children's emotional regulation. 109 respondents were selected using a purposive sampling technique. The scales used in this research are the PreBers scale to examine children's emotional regulation and the ToM scale. The research results showed that the influence of ToM development on children's emotional regulation was 52.4%. The results of this research highlight that the better the child acquires a Theory of Mind, the better the development of the child's emotional regulation. Furthermore, these findings are significant for early childhood education providers to develop programs to optimize ToM acquisition from childhood.

Keywords: theory of mind, empathy, emotion regulation, children aged 4, 5 and 6 years

¹ Corresponding Author:
Universitas Terbuka Indonesia
Department of Early Childhood Education
Email: erna.risnawati@ecampus.ut.ac.id
INTRODUCTION

Childhood is a golden period in which children experience rapid development, not only in the physical that is visible but also in the emotional aspect. Emotional development in children starts from the early days of birth and continues to develop along with their physical and cognitive maturity. Emotional development in early childhood begins with the process of recognizing various basic emotions such as anger, joy, and fear. As they get older and the complexity of the cognitive processes they achieve, the understanding of emotions becomes more diverse and even develops into the process of recognizing other people's emotions (Papalia & Martorell, 2014). Emotional development in children becomes more complex along with their maturity, children not only recognize emotions but also develop the ability to regulate emotion. Why is emotional regulation so important to be highlighted in children's developmental period? Because of good emotional development, it will reduce the risk of children experiencing emotional disturbances in the future. When children are unable to recognize the emotions, they are experiencing and are unable to regulate it could cause behavioral problems, destructive behavior, etc.

Emotional regulation in children is the child's ability to regulate and control the emotions they feel and respond to these emotions in various situations encountered (C. Cress et al., 2016). Emotion regulation influences moral emotion, sympathy, and prosocial behavior so emotion regulation is an important component that affects social functioning and psychological well-being, especially in children and strong control or effortful control is the key to developing emotional regulatory capacity (Benita et al., 2017; Dunfield & Kuhlmeier, 2013; Eisenberg et al., 2007). Children's ability to understand, regulate, and control their feelings and emotions is one of the keys to successful psychosocial development in the future, besides that they are also better able to understand how other people feel, how to behave and adapt to their environment (Papalia & Martorell, 2014). In the process of emotion regulation, as they interact with their environment, children learn to understand and adapt to other people who may not always be comfortable with them, begin to help others, work together to achieve targets or goals, and entertain others (Dunfield & Kuhlmeier, 2013).

The basic child's ability to regulate emotions is related to how they recognize emotions and understand the emotions of others (Fitzpatrick et al., 2018). The concept of emotional regulation has also been related to perspective-taking and ToM (Lei et al., 2019). In addition, previous studies proposed that the development of ToM is a prerequisite for adequate emotional regulation (Lei et al., 2019; Meybovsky et al., 2021; Risnawati et al., 2015). We arrange this hypothesis based on previous research that the child's ability to regulate emotions requires basic recognition of the emotions experienced, naming them, and then developing the ability to understand other people's emotions and the mental states of other people that intersect with the ToM Concept.

Although previous research has shown a link between regulation and the ToM concept, there has been no research that measures together on one subject, especially in children, even though childhood is a period of laying the foundation for emotional development.
and ToM. The present study trying to find out how the role of acquiring ToM on emotion regulation. Next important thing, through this research we will see how the order of acquiring ToM in Indonesia is. research conducted by Shahaeian et al., (2011) in Australia and Europe the six components are a structured sequence, diverse desires (DD), di-verse beliefs (DF), knowledge access (KA), false beliefs (FB), hidden emotions (HE) and sarcasm (SA). However, our previous research found a different sequence. We have found that sequence acquisition ToM are Diverse Desire > Diverse Beliefs > Knowledge Access > Sarcasm > False Belief > Hidden Emotion, which is the sarcasm obtained earlier compared to false belief and Sarcasm (Risnawati 2019). Sarcasm can generally be achieved by children after they are 8-9 years old, but research in Indonesia shows that children aged 5 years have reached an understanding of sarcasm. Sarcasm in the ToM is a child's ability to understand other people's emotions even though they are displayed differently in behavior.

The existence of a gap in the acquisition of the ToM for children in Indonesia raises the question of whether the acquisition of ToM contributes to the development of children's emotional development. The results of this study are expected to be the basis for developing stimulation program interventions to increase the acquisition of Theory of Mind (ToM) in early childhood which has an impact on developing the ability to regulate emotions in children. The long-term target of this research is to minimize the emotional disturbance of children and adolescents by providing early treatment of children's emotional regulation abilities.

2 THEORETICAL STUDY

2.1 Emotion Regulation

According to Cress et al., (2016) and Cress et al., (2012) emotional regulation in children is the child's ability to manage the emotions he feels and how to respond to these emotions in various situations. Children's ability to understand, regulate, and control their feelings and emotions is one of the keys to successful psychosocial development in the future, besides that they are also better able to understand how other people feel, how to behave and adapt to their environment (Papalia & Martorell, 2014).

A child's ability to regulate emotions is related to how he recognizes emotions and understands the emotions of others (Fitzpatrick et al., 2018; Graham & Fitzgerald, 2011). Process of development emotion regulation growth along they interact with others. Children learn to understand and adapt to other people who may not always be comfortable with them, they also begin to help others, work together to achieve targets or goals, and entertain others (Dunfield & Kuhlmeier, 2013). Emotion regulation influences moral emotion, sympathy, and prosocial behavior so emotion regulation is an important component that affects social functioning and psychological well-being, especially in children and strong control or effortful control is the key to developing emotional regulatory capacity (Benita et al., 2017; Dunfield & Kuhlmeier, 2013; Eisenberg et al., 2007; Meyebovsky et al., 2021).
According to Papalia and Martorell, (2014), Hum and Lewis, (2013), and Nyklíček et al., (2011) emotion development is influenced by several factors, (a) the ability to understand one's own emotions. A child is capable of basic emotions from a toddler age such as anger, joy, and fear. As the child grows, they will develop and expand their recognition of more complex emotions such as jealousy, emotion, anxiety, etc. (b) the ability to understand the emotions of others. One of the cognitive developments that are in line with socio-emotional development in children is the child's ability to understand other people's emotions. Based on some literature this is related to the acquisition of ToM (Fitzpatrick et al., 2018; Mizokawa, Ai; Koyasu & Mizokawa, 1999; Nyklíček et al., 2011; Shukla & Rishi, 2014) which begins to develop at the age of 4-5 years. (c) environment. Parents and especially teachers at school have an important role in the development of children's emotional regulation. When children enter school age, the teacher's role is very decisive in how children respond to emotion and control their emotions in behavior that is appropriate to the environment (Hum & Lewis, 2013; Lewis, 2019).

2.2 Theory of mind

ToM is the ability to predict, and understand the feelings and emotions of other people and be able to explain an event or behavior that is done by another person using complex mental processes (Imuta et al., 2016; Shahaeian et al., 2011; Slaughter et al., 2002). Previous Studies of ToM show that several components (Risnawati & Kuntoro et al., 2019; Lane et al., 2010; Shahaeian et al., 2011; Wellman & Liu, 2004) There are, diverse Desire, one of the main aspects related to mental conditions because desire will determine one's behavior. The desire in the theory of mind is used to understand other people's desires that are different from our desires even in the same way (Wellman & Liu, 2006). Emotions, the understanding of emotions which is part of the theory of mind is defined as understanding emotional exaggerations, predicting the emotional reactions of others, and appreciating that other people have vivid and personal emotional experiences. Beliefs, possessed by early childhood are their ability to understand their own beliefs and those of others based on things or events around them. Knowledge is associated with the child's ability to predict the behavior and thoughts of other people about something that he already knows but is not yet known by other people.

3 METHOD

The present study used a quantitative design with a correlational approach. we chose early childhood schools and provided the ToM and Prebers scales. The ToM scale is given to children by the interview method. researchers accompany children in understanding the ToM scale accompanied by teaching aids to make it easier for children to understand questions on the scale concretely. As for measuring children's emotional regulation, the researchers asked the teacher to give a rating for each child according to the questions in the PreBers instrument.
3.1 **Participant**

Before collecting participant data, the researcher first asked for permission from the school and parents. Each parent was given a formal research letter of informed consent which had to be signed and explained the purpose of the research, research procedures, the rights of the participants, the methods of results dissemination, and any direct and indirect benefits that they received for participation.

The sampling technique used in this study was purposive sampling. The criteria for respondents in this study were children aged 4.5 and 6 years, who had no indication of special needs and could communicate well. The number of respondents in this study was 113 children, but 4 children were excluded from the data analysis because they did not fit the criteria.

<table>
<thead>
<tr>
<th>Table 1. Participants</th>
<th>Age</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>4</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>5</td>
<td>36</td>
<td>33</td>
</tr>
<tr>
<td>6</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>58</td>
<td>53</td>
</tr>
<tr>
<td>Female</td>
<td>52</td>
<td>47</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>100%</td>
</tr>
</tbody>
</table>

As clearly shown on Table 1, the highest number of respondents was the 6-year-old group of 40%, while children aged 4 years is only 27%. This is probably because the data collection location was taken from a kindergarten where the average age was 5-7 years and only a few children were at the playgroup level. As for the percentage of gender in this study, it was relatively balanced between boys and girls.

3.2 **Instrument**

This study uses two scales to measure emotion regulation and Theory of mind. Before being used, both scales went through a process of translation and back translation and went through expert judgment process with 3 experts in the field of developmental psychology. To measure emotion regulation one of the dimensions of emotion regulation from the Preschool Behavioral and Emotional Rating Scale (PreBERS) by Epstein. The emotional regulation dimension has 13 items with 4 Likert-type scales filled in by preschool teachers from children who directly know how children’s daily development.

Examples are Reacting to disappointments calmly, Controlling anger toward others, etc. Based on the reliability test, the dimension of emotion regulation obtains alpha Cronbach .954 with a validity value of .670-.854. This study used the ToM scale developed by Wellman and Liu (2014) consisting of six tasks. The six tasks presented in the form of stories are used to see children's understanding of diverse desires, diverse beliefs, knowledge access, false beliefs, hidden, and sarcasm.
Table 2. Theory Of Mind Scale

<table>
<thead>
<tr>
<th>No</th>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diverse Desire</td>
<td>The child judges that she/he have different desires with another child (displayed by little doll) about the same object: Given two possible snacks (cake, carrot), the child states his or her preference, but then must predict the choice of the other person (who has the opposite preference).</td>
</tr>
<tr>
<td>2</td>
<td>Diverse Beliefs</td>
<td>The child judges that two persons (the child and someone else displayed by little doll) have different beliefs about the same object (little cat), when the child does not know which belief is true or false: The child states his or her belief about cat that an object is on garage and hears the other person’s belief that the cat on meadow; the child never sees where the cat, but must predict whether the other person will search under on meadow or in the garage.</td>
</tr>
<tr>
<td>3</td>
<td>Knowledge Access</td>
<td>The child judges about the contents of pencil case, when the child knows what is in pencil case: The child sees a chocolate; the pencil case is closed, and the child judges (yes/no) if the other person (who has never seen inside) knows what is in the pencil case (and judges if that person saw inside).</td>
</tr>
<tr>
<td>4</td>
<td>False Beliefs</td>
<td>The child judges how someone will search, given that person’s mistaken belief: The child sees a key house in a biscuit tin, then hears that the character thinks the biscuit is in the biscuit tin, and judges whether the character in biscuit tin.</td>
</tr>
<tr>
<td>5</td>
<td>Hidden Emotion</td>
<td>The child judges that a person can feel one thing but display a different emotion: The character was playing with his friends and a child came making fun of him, then his friends laughed because he was being teased.; the child judges how the character will feel (sad) and what he will show on his face (happy).</td>
</tr>
<tr>
<td>6</td>
<td>Sarcasm</td>
<td>The child judge what emotions other people want to convey through the words of satire. The character was playing with his toys then his friends came to invite him to play the bicycle, then his mother said to tidy up the toys before playing the bicycle, but the child ignored his mother's orders. His/her mother said, &quot;you are a very good boy/girl&quot;. Will judge's child be he really a good child? because he doesn't clean up his toys, the child was then asked why his mother said he was a good boy?</td>
</tr>
</tbody>
</table>

As clearly show from the very clear Table 2, explains how the tasks are given on the ToM scale to the child. The ToM scale is asked to the child independently, each assignment item was read by the researcher to the child by including props including girl dolls, cats and supporting pictures that match the assignment items. The teaching aids used by the researcher in each task item aim to help children understand the item in a concrete way so that children can easily and correctly understand it. One example, in the sixth task "hidden emotion", the researcher first gave three pictures depicting sad, happy, and flat emoticons. The child is first asked to give the name of the emotion to the emoticon, and make sure the child answers correctly the name of the emotion in the emoticon image. Researchers used Guttman analysis to see the reliability of Tom's scale. Based on the reliability test using scalogram for Guttman scale analysis obtain coefficient of reproducibility 905.
3.3 Data analysis

Analyzing data used simple regression to test the hypothesis. Normality test using Kolmogorov Smirnov. Simple regression is used to see the relationship between the variables of theory of mind and emotion regulation. Then the researcher also looked at the $r$ square value to see how much the ToM variable contributed to the child's emotional regulation.

4 RESULT AND DISCUSSION

4.1 Result

In this study, the researcher first provided an overview of the respondents' scores on the emotion regulation variable. We divide into three categories, low, moderate, and good. As seen in Table 3, most children are in the good category at 65% (N=71). Uniquely in the category of good emotions, the number of children aged 5 and 6 years is almost the same. This triggers new questions whether indeed at the age of 5- and 6-years children have developed quite good emotional regulation and there is no difference.

Table 3. Emotion Regulation category based on age.

<table>
<thead>
<tr>
<th>Category</th>
<th>Age</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Low</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Moderate</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Good</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>N</td>
<td>29</td>
<td>36</td>
</tr>
</tbody>
</table>

We can get a picture based on Table 2, for the age group 4 years most children are at a moderate level for the variable emotion regulation. The description of these results requires further research on other factors that influence the development of children's emotional regulation. In general, the description of the number of respondents covering the three categories is in accordance with age, where the low category is dominated by the 4-year-old age group which indicates that at the age of 4 years the child's emotional regulation has emerged and is just starting to develop.
As clearly shown on the figure 1, the ToM acquisition for this respondent shows that "sarcasm" is obtained first compared to the "hidden emotion" task. Based on the graphic above, the ToM acquisition section, on the Diverse desire task, there were 109 children who answered correctly, diverse beliefs 106 children who answered correctly, knowledge access 92 children answered correctly, False belief 82 children answered correctly, Hidden emotion 36 children answered correctly and sarcasm there were 52 children who answered correctly.

Based on figure 2, it was found that the acquisition of theory of mind based on age is known that in general diverse desire tasks can be carried out by all children aged 4.5 and 6 years. whereas for the Diverse Belief task, the proportion of children who answered correctly was above 90% either at the age of 4.5 or 6 years. The third Knowledge access task was obtained by 44% of children aged 4 years who answered correctly and aged 5.6 years and over 90% who answered correctly. on the false belief task, only 17% of children aged 4 years could answer correctly, and 90% of children aged 5 and 6 years could answer correctly. Hidden emotion task, only 6.8% (N=2) of 4-year-old could answer correctly, 44% (N=16) of 5-year-old answered correctly and 40% (N=18) of 6-year-old answered correctly. For the sarcasm task, only 3% (N=1) of 4-year-old could answer correctly, 55% of 5-year-old and 70% of 6-year-old could answer correctly.

The results of the regression analysis in Table 4, it is known that the Pearson correlation results show $r = .727$, $p > .005$, which means that there is a significant positive relationship between the theory of mind and emotional regulation in children. this means that when the development of the theory of mind is good, the development of emotional regulation in children will also increase. Furthermore, the researchers also conducted a regression
test which obtained values of $r = .727$ and $R^2 = .528$. This shows that Theory of Mind has an influence of 52.8% on the development of emotional regulation in early childhood.

4.2 Discussion

This study aims to see how the theory of mind plays a role in the development of children's emotional regulation, it is known from Table 6 that there is a significant relationship, and the theory of mind influences 52.8% of children's emotional regulation development. this shows that the better the acquisition of the theory of mind in children, the better the child's development of emotional regulation will be. From the results of this study, further research is needed to find out what factors and treatments can be used to increase the acquisition of Theory of Mind in children so that it can improve children's emotional regulation. A child with good emotional development is expected to achieve development in the next aspect well too.

Emotion regulation is an important component that affects social functioning and psychological well-being, especially in children and strong control or effortful control is the key to developing emotional regulatory capacity (Benita et al., 2017; Dunfield & Kuhlmeier, 2013; Eisenberg et al., 2007). In this study, an interesting result was also obtained. In the theory of ToM, the acquisition of ToM sequentially was diverse desires (DD) > diverse beliefs (DF) > knowledge access (KA) > false beliefs (FB) > hidden emotions (HE) > sarcasm (SA), but in this study the results obtained diverse desires (DD) > diverse beliefs (DF) > knowledge access (KA) > false beliefs (FB) > sarcasm (SA) > hidden emotions (HE). The sarcasm task is obtained first compared to the hidden emotion task. The hidden emotion task shows where the child covers up his feelings and shows different behavior to cover up his true feelings. an example of hidden emotion given in this study is how he can hide his feelings when ridiculed by his friends. Why did sarcasm come first? Is it because the satire culture widely used in Indonesian parenting patterns influences the acquisition of ToM?

Based on the results of previous research, it was found that it is possible for children to gain an understanding of sarcasm sentences through literature, books, or conversations from the surrounding environment, and are generally obtained at the age of 9-10 years (Glenwright & Pexman, 2010). In experimental research on sarcasm, the results were obtained that when children were given the conditioning of book literature containing sarcasm sentences, children would better understand the meaning of sarcasm (Lee et al., 2021). In this study, there is still a question mark where children gain an understanding of sentence sarcasm from ToM assignments given to children aged 6 years.

5 CONCLUSION

Conclusions from this research is that there is a significant positive relationship between theory of mind and emotional development in children. then the order of
acquiring the theory of mind in this study is diverse desires (DD) > diverse beliefs (DF) > knowledge access (KA) > false beliefs (FB) > sar-casm (SA) > hidden emotions (HE). Future research is expected to be able to explore what factors are related to increasing the acquisition of theory of mind and emotional development in children.

6 REFERENCES


https://doi.org/10.1037/dev0000140.supp


