

## Systematic Review: Theory of Mind and Parenting

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### ABSTRACT

Social interactions play a crucial role in our daily lives. The ability to attribute mental states such as emotions, desires, beliefs to others and oneself is termed as theory of mind. Understanding oneself and others is a key phase in the cognitive development process. A variety of factors influence the development of the theory of mind, with parenting being one of the most significant. The present study employed a systematic review to explore about the studies conducted on the parenting and theory of mind, to get better understanding about the importance of parenting in the development of theory of mind. The study included ten studies on parenting and theory of mind that have been conducted between 2000 and 2018. The studies reviewed indicated significant relationship between parenting and theory of mind. Maternal education, parental stress, parental reactions to children also found to be connected with the theory of mind in children. Future studies could involve other family members along with parents in understanding the development of theory of mind in children.

**Keywords:** *Theory of Mind, Parenting, Social Interactions, Child Development*

A systematic review is an overview of primary studies which contains an explicit statement of objectives, materials, and methods and has been conducted according to explicit and reproducible methodology. Systematic reviews are characterised by being methodical, comprehensive, transparent, and replicable. They involve a systematic search process to locate all relevant works that addresses one or more research questions, and a systematic presentation and synthesis of the characteristics and findings of the results of that search. A systematic review includes a particular research question that systematically identifies, selects, evaluates and synthesizes all high-quality research evidence relevant to that question in order to answer it. It is a complex process which includes a number of scientific steps. It is also itself used as a research method according to the research question. Systematic review provides an exhaustive summary of scholarly literature related to a particular research topic or question. The criteria for inclusion and exclusion in the systematic review are explicitly stated and consistently implemented such that the decision to include or exclude particular studies is clear to readers and another researcher using the same criteria would likely make the same judgements. This explicit approach allows readers of the review to assess the author's assumptions, procedures, and conclusions, rather than taking them on faith. This methodology also allows other researchers to update and extend the review at a later time. Systematic review tend to be of

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higher quality, more comprehensive, and less biased than other types of literature review, making them more likely to be published than other types of literature review.

The first step in systematic review is framing an answerable research question. After defining the research question an extensive search for the selection of relevant works related to the research question is carried out. The exclusion and inclusion criteria should be specified in order to select the studies. The assessment of quality of studies is very important step in review. Because the quality of the study will determine the quality of the review. Next step is summarizing the evidence and interpreting the findings. Data synthesis includes of tabulation of study characteristics, quality and effects as well as use of statistical methods for exploring differences between studies and combining their effects.

The advantages of systematic review include explicit methods limit bias in identifying and rejecting studies, conclusions are more reliable and accurate, large amounts of information can be assimilated quickly by healthcare providers, researchers, and policymakers, results of different studies can be formally compared to establish generalizability of findings and consistency of results. One of the limitations of systematic review is it is often time consuming and also need more effort than other type of reviews. The process also requires specialized reviewers and involves a research protocol.

In our everyday life we go on by interacting with a number of people. Social interactions or social relations are important in our lives. Understanding oneself and others is also important, the ability to attribute mental states such as emotions, desires, beliefs to others and oneself is termed as theory of mind. Empathy is a related concept, the ability to put oneself into another's shoe. While empathy is known as emotional perspective taking, theory of mind is defined as cognitive perspective taking. The term was first introduced by Premack and Woodruff in 1978 on their study on chimpanzee. The study was an experimental study in which the chimpanzee named Sara shown a series of videotaped scenes of human actor struggling with a variety of problems and with each tape several photographs showing solution to the problem. The chimpanzees consistent choice of the correct photographs were understood by assuming that the animal recognize the videotape as representing problem, understood actors purpose and chose alternatives compatible with that purpose.

When the theory of mind develops in children? It is an interesting area for researchers and a number of studies had been conducted related to this. Major researches shows that children develop the theory of mind between the age three to five. That is in the early period of life children comes to aware of themselves and others. Acquiring the ability to understand self and others is an important step in the cognitive development. There are many factors such as language, cognitive and social factors which contribute to its development. Researchers had used several methods to understand the development of theory of mind in children. Most used test to understand the theory of mind in children is false belief task which was first introduced by Wimmer and Perner in 1983. Around the ages of four to six years the ability to represent the relationship between two or more person's epistemic states emerges and become firmly established (Wimmer &Perner, 1983). In false belief task children must infer that another person does not possess the knowledge that they possess. It is based on false belief understanding that an individual's belief or representation may contrast with reality. The study conducted by Peterson and Siegel in 1998 suggests that children younger than four years of age, signing deaf children from hearing families and children diagnosed with autism does not succeed well in false belief tasks. False photograph test is also used as a

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measure of theory of mind development. There are also researches which express the use of narrative techniques like story telling is also successful in assessing development of theory of mind. There are evidence suggesting that executive functioning skills play a role in process of acquiring theory of mind concepts from experience. Executive function describes a set of cognitive processes and mental skills that help an individual plan, monitor and successfully execute their goals. These include attentional control, working memory, inhibition and problem solving. The study conducted by Jones et al in 2018 found that executive function was a correlate of theory of mind but had no direct association with parent reported symptom expression in ASD patients. The person who has impairment in theory of mind face difficulties in interacting with others, understanding others and understanding how their behaviour affects others. Theory of mind deficits have been observed in people with autism spectrum disorders, schizophrenia, major depressive episode and specific language impairment.

There are different theories explaining the development of theory of mind. Modularity theorists argue that theory of mind has a specific innate basis (Scholl & Leslie, 2002). Simulation theorists argue that children develop theory of mind through experience and not through maturation or theory building. Another view, according to enculturation hypothesis is that theory of mind which helps in interaction with others is primarily the result of socialization or enculturation. As said earlier the language also plays a very important role in theory of mind abilities. Several studies show a positive correlation between early language development and theory of mind abilities (Astington & Jenkins, 1999). According to study conducted by Ruffman et al in 2002, mother's mental utterances were correlated with their children's mental state utterances and theory of mind. Some studies also suggests that specific verbal training procedures can enhance successful performance in theory of mind tasks (Gujardo & Watson, 2002). Many studies conducted in theory of mind suggests that parental interactions and sibling and peer interactions has a significant role in children's theory of mind development. The socioeconomic status also seen as positively associated with theory of mind. In a study conducted by Ebert et al in 2017 the pre-schoolers from low SES lagged behind those of higher SES in their theory of mind cross-sectional and longitudinally. The research in theory of mind has developed well within the four decades after its emergence. The recent research in this area focus on developing new methods for studying theory of mind and also studying the variables associated with the theory of mind.

The present study aims to conduct a systematic review on the studies related to theory of mind and parenting. As said earlier the theory of mind development is affected by a number of factors, parenting is important among them. Parenting is the process of promoting and supporting the physical, emotional, social and intellectual development of a child from infancy to adulthood. Many of the studies reveals the importance of parents mental state talks, parental attitudes, parental education, family background, parental styles in the development of theory of mind. Children spends most of their early years with parents so they are affected by behaviour of their parents. The first interaction a new-born having is with mother. From there onwards the child try to interact and understand the world through their parents. So, parents has significant role in stepping a child towards social interaction. Parents play an important role in shaping their understandings about themselves and also others. Therefore, it is relevant to understand which of the factors related to parents affect the development of theory of mind in children. And it enables to understand the factors of parenting which helps to enhance the theory of mind and the factors which discourage it. The present study tries to get a better understanding about how parenting and theory of mind connected by reviewing the studies conducted in these two variables.

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### *Aim*

To explore the relationship between parenting and theory of mind.

### *Objectives*

- To familiarize with the method of systemic review.
- To explore the relationship between parenting and theory of mind.

## **METHODOLOGY**

### *Sample*

Sample of the study comprised of ten studies on parenting and theory of mind which was conducted in the year 2000- 2018.

### *Procedure*

The study employed systematic review to explore about the studies conducted on the parenting and theory of mind, to get better understanding about the importance of parenting in the development of theory of mind. Systematic review involve a systematic search process to locate all relevant works that addresses one or more research questions, and a systematic presentation and synthesis of the characteristics and findings of the results of that search. After defining the research question the studies are collected using database Google scholar, science direct and research gate. The exclusion and inclusion criteria for the studies was defined. Ten studies between the years 2000-2018 were selected based on inclusion and exclusion criteria.

### **Inclusion criteria:**

- The studies must be in English language and full text must be available.
- Only studies relating to parenting and theory of mind can be selected.
- Only quantitative studies was selected
- The studies published between time period of 2000-2018 was selected.

### **Exclusion criteria:**

- The studies which is not pertaining to the exact variable was excluded.
- The studies which didn't include both parents and children as sample was excluded.
- The studies after and before the stated time period was excluded.

## **RESULT AND DISCUSSION**

The study aims to review the studies conducted in the parenting and theory of mind to get a better understanding about the importance of parenting in the theory of mind development of children. The study also tries to understand the relation between variables and to identify the relevant findings in the studies regarding the variables. Ten quantitative studies which studied parenting and theory of mind was selected and reviewed.

When looking at the variables studied along with parenting and theory of mind some studies looked at the relationship with other variables like sibling interactions, language, demographics, parental stress, culture, and family factors. Majority of the studies looked at the parenting style and its relationship with theory of mind. All of the studies included parents and children as sample, in three studies specifically mother was participated along with the children (Kuntoro, Peterson, & Slaughter, 2017; Villalobos, Mora, & Trias, 2010; Ruffman, Slade, Devitt & Crowe, 2006). In one study the sample comprised of children in late childhood (Aminin.I, 2018) in the rest of the studies the age of children ranged from 2

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years to 8 years. The measures used to assess parenting were questionnaires. In most of the study theory of mind was assessed through the theory of mind tasks developed by Wellman and Liu. The other measures used to assess theory of mind include Higher Order theory of mind Task developed by Stiller and Dunbar, Theory of Mind Inventory developed by Hutchins, Prelock, and Bonazinga, ToM-Emotions Tasks and ToM-Beliefs Tasks developed by Nader-Grosbois and Thirion-Marissiaux, discrepant belief developed by Wellman and Bartsch, and explicit false belief tasks developed by Siegal and Beattie.

The study conducted by Song & Volling in 2018 on sibling interactions (positive engagement and antagonism) and parental discipline strategies (child-centred and parent-centred discipline) and theory of mind in first born children and their parents shows the important role of parents in the development of young children's social-cognitive understanding in the context of sibling interactions even as early as the first year after the sibling's birth. Children's antagonistic behaviours toward the infant in the first year after the birth predicted children's poorer theory of mind understanding, but only when mothers and fathers used low levels of child-centered discipline. The study emphasized the role of parents and usage of child-centered discipline involving communication about emotions and solutions for conflicts during discipline encounters involving the infant is important for theory of mind development after the arrival of a younger sibling. In another study conducted by Shahaeian in 2015 indicate that there is no influence of family size or having siblings on the theory of mind in children. Children's performances in the theory of mind measures are similar in the children from different sized families and who have different social experiences. The number of days children spend playing with their playmates is a significant indicator of children's theory of mind comprehension for the children in the sample. The study also indicated that parents who are more tolerant toward their children arguing tend to have children with a better understanding of the diversity of people's beliefs.

In half of the studies reviewed there was negative correlation between the authoritarian parenting style and theory of mind performance in children. In the study conducted by Villalobos et al., in 2010 Authoritarian Parenting attitude and theory of mind was studied in pre-schoolers and their mothers. The study revealed a negative correlation between authoritarian parenting and first order False-belief understanding in children. Participants with less Authoritarian Parenting received showed a better performance in measures of first order false belief, a representative assessment of the socio-cognitive dimension in pre-schoolers. The findings of study conducted by Reilly and Peterson in 2014 also give similar result. The result indicates that both parental authoritarianism that is preference for blindly obedient conformity to adult rules and parental authoritarianism which encouraging children to speak their own minds and think independently are each significantly associated with the children's theory of mind understanding. Offspring of parents who adopt preferences for authoritarian rule conformity are less likely to be advanced in broad theory of mind understanding than those whose parents prefer an authoritative parenting style involving open inter-generational negotiation which provide greater opportunities for talking about desires, intentions and beliefs. The study also pointed out the significant negative links of child theory of mind with parental authoritarianism and significant positive links, independent of child age and language skill, theory of mind between understanding and authoritative parenting. Aminin in 2018 studied influence of parenting styles toward achievement of theory of mind in the late childhood. Positive correlation found between parenting styles and theory of mind. Participants who were cared for in an authoritative manner had the higher theory of mind performance compared to subjects who were cared for by authoritarian or permissive parenting.

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In the study conducted by Pears and Moses in 2003 on demographics, parenting and theory of mind in preschool children indicated that maternal education appears to be the strongest predictor of theory of mind, correlating moderately with perception, desire, and emotion understanding and to a lesser extent income were associated with number of aspects of theory of mind. The study also found that power assertive discipline techniques like spanking, yelling are negatively associated with belief understanding, even when age, cognitive abilities and demographics were controlled. The mother's use of consequences to child's misbehaviour also found to be negatively correlated with emotional understanding. The study conducted by Kuntoro et al in 2017 on culture, parenting, and theory of mind development in Indonesian sample also revealed the negative correlation of authoritarianism with theory of mind. Indonesian mothers preferred collectivism to individualism and authoritativeness to authoritarianism. Despite Indonesia being a strongly collectivist society and despite former suggestions that cultural collectivism aligns itself with authoritarian parenting's emphasis on child compliance and firm disciplinary control, it was found that authoritarianism was not a popular choice for Indonesian parents.

The study conducted by Guajardo et al in 2009 on relationships among parenting practices, parental stress, child behaviour, and children's social- cognitive development gives two interesting relationships between parental behaviour and children's emotional and cognitive development. Unexpectedly, only lax that is inconsistent, uninvolved, lackadaisical parenting predicted poorer performance on theory of mind tasks. However, neither lax nor over reactive parenting predicted children's emotion understanding. Parental imitation, an aspect of parental responsiveness, negatively predicted children's emotion understanding. The explanation given for this finding was that parental responsiveness, namely imitation, inhibits a child's emotional development and rather than parent-driven, the presence of more frequent imitation with children exhibiting more inadequate emotion understanding may result from parental attempts to provide appropriate environmental supports to aid their child's development. The study also indicated that life stress accounted for unique variance in theory of mind performance. Parental stress was negatively related to children's false belief performance.

Mazzone and Grosbois in 2016 conducted a study on parental reactions to children's emotions and theory of mind. The result indicated that maternal model was significant for children's theory of mind emotions and theory of mind thinking. The paternal model was significant for children's theory of mind beliefs. The study also indicated that mothers reported more supportive reactions and fewer nonsupportive reactions to their children's than fathers. In particular, mothers used more strategies which helped children to find a way to manage their emotions or a stressful situation that is problem-focused reaction and to express their emotions like encouragement of expression of emotion. Mothers used fewer strategies that controlled or minimized the legitimacy of children's emotional experience than fathers. The results suggested that exploring the parental gender effect and the combined effects of parental reactions is useful for understanding children's theory of mind development.

All of the studies show that parents play a substantial effect in their children's formation of theory of mind. Particularly one study indicated the role of parents in the development of young children's social- cognitive understanding in the context of sibling interactions. In another study there was no influence of family size or having siblings on the theory of mind in children. Half of the studies indicated the negative correlation of authoritarian parenting in children's theory of mind. Parental stress also found to be negatively correlated with

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children's false belief performance. The suggestion to the future studies in this area is, majority of the studies included parents, specifically in some studies mothers along with children for studying the relation of parenting and theory of mind, the other members of family could also be studied in order to gain more understanding about the children's theory of mind development. All of the studies used quantitative design, the use of mixed method including naturalistic observations and interviews may give more information for understanding the variable.

### CONCLUSION

The studies reviewed indicated significant relationship between parenting and theory of mind. The authoritarian parenting was negatively correlated to the theory of mind development in children. Maternal education, parental stress, parental reactions to children also found to be connected with the theory of mind in children. Future studies could involve other family members along with parents in understanding the development of theory of mind in children. Also mixed method approach can be implied for the wider understanding about the variable.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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