

Discovering Maternal Minds: Exploring Maternal Mind-Mindedness for Preschoolers

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Abstract

Most studies on mind-mindedness (MM) and its role in child development have been conducted predominantly in Western countries. To address this gap, we conducted the first-ever qualitative study in Pakistan with a sample of working and nonworking mothers ($N=30$) of preschoolers (aged 2--6 years). Our aim was to assess their ability to describe their children in a mind-directed manner. Each mother was asked to describe her child. The transcripts of these four- to five-minute speech samples were coded for (i) mental attributes (comments that refer to or describe the child's mental life), (ii) behavioral attributes (comments that refer to the child's behavior), (iii) physical attributes (physical appearance, age, position in the family), (iii) general attributes (any vague comment), and (iv) self-referential attributes (comments in which the primary reference is self-focused rather than describing the child). The results showed that 19 out of 30 mothers could appropriately describe their child in the context of their mental characteristics, as calculated by the index score given in the coding manual. In addition, variations in mothers' responses on the basis of their occupation status and the child's birth order were also assessed qualitatively. Working mothers displayed less mind-mindedness than nonworking mothers did, and mothers with only one child were also found to be less mind-minded. This is the latest and entirely new study conducted in Pakistan and therefore offers a breakthrough in research. Potential limitations include a lack of generalizability and possible bias in mothers' descriptions to appear socially desirable.

Keywords: Mind-Mindedness, Preschoolers, Mother-Child Interaction, Qualitative, Mental Attributes

Introduction

Over the past three decades, developmental psychologists and researchers have increasingly emphasized the importance of parental mentalizing—the capacity to consciously consider and describe children in terms of their internal states—for the social-emotional and social-cognitive development of children [1]. Recent scholarly attention has been directed toward mothers' verbal descriptions of their children's mental states, commonly referred to as 'mind-mindedness' (MM). MM describes people's propensity to take an intentional posture in their representations of others and interactions [2]. In accordance with a real-life measure of caregivers' descriptions of their children's mental states on the basis of in-person interaction is defined as mind-mindedness [3]. Thus, it is believed that the construct sits at the intersection of behavior and representations [4]. However, little is known about the construct itself, as it has not been explored in

isolation, especially in Asian cultures in the context of mothers describing their preschool children. Previous studies have explored MM as a predictor of developmental outcomes or attachment styles in children. The current study was designed to explore maternal mind-mindedness exclusively for preschoolers. Focused on investigating mentalizing in two ways: by asking mothers to describe their children and by measuring mind-mindedness at the behavioral level during live encounters between mothers and their children [5]. Mein asserts that maternal sensitivity "involves a degree of interpretation" if she is to successfully recognize and pay timely and appropriate attention to her child's needs [5]. Extracted social-cognitive and attachment theories to suggest that mind-mindedness constituted the cognitive underpinning of parental receptivity during interactions with the child. Mary Ainsworth's fundamental work on maternal sensitivity and her lucid attention to the mother's capacity to accurately

perceive and interpret her infant's signals and communications were highlighted by [4]. This laid the foundation for the beginnings of attachment theory [6]. Theories about the conversational nature of higher mental functions and the significance of social-environmental factors, particularly adult language and scaffolding during interaction, for children's learning, especially their social understanding, also impact the development of the construct [7, 8].

The sociocultural learning hypothesis of Vygotsky is another avenue through which parental mind-mindedness may impact children's development ability [7]. The propensity of parents who are aware of being mind-minded to concentrate on their children's mental states may cause them to offer their child developmentally necessary support, reactions, or scaffolding in a more suitable way. Parents' responses should be more sensitive so that they better match their children's mental growth and make it simpler for children to copy or integrate. When performing a challenging task, evidence suggests that depictive mind-mindedness is linked with greater levels of effective scaffolding and a greater number of encouragements to promote and enable children's autonomy [9, 10]. Argued that how caregivers practice MM in their parenting largely determines the child's understanding of other people's minds [11]. This parental MM can be explained as the inclination to treat your child as a discrete being with a mind from a premature age. This is done in an attempt to thwart this cognitive bias in view of precursors of mentalizing abilities. In a discovery made by children whose mothers were more likely to describe them in terms of mental attributes (rather than physical attributes or behavioral tendencies) at age 3 performed better on standard mentalizing tasks at following ages (4 and 5). These findings suggest a correlation between maternal mind-mindedness in early childhood and children's consequential performance on tasks that require comprehension of the minds of others [12].

One of the aims of the literature is to assess differences in mind-related comments on the basis of various characteristics, such as the mother's occupation, education level, age or birth order of the child being described; research reports that mothers' socioeconomic status degree of education, or prior mothering experience are not associated with their propensity to correctly comment on their children purported internal states [13]. MM may result from the mother's own unique experiences and evaluations of her relationship with her child rather than from such general social circumstances. That is, certain mothers may have strong mental faculties because they have personal experience with the fetus, birth, and early years of their children.

In conclusion, almost all research on the MM construct has been conducted in Western settings; however, an absurdly small cross-cultural database on parent-child attachment in non-Western cultures is present [14, 15]. Additionally, Asian parents may be motivated to take advantage of opportunities for their children's learning during interactions since they place high importance on education in their culture, which necessitates the use of more parent-led directive language. According to parents of Asian origin frequently employ language that is more instruc-

tional and places less emphasis on the autonomy and agency of their children than do parents from Western cultures [17]. Given the small number of studies on mind-mindedness available for nonwestern cultures and the lack of research conducted, especially in Pakistan, the present study aims to explore the tendency of mothers to treat their child as a separate entity with a set of individual cognitions, feelings, desires and preferences.

Methods

This qualitative exploratory study aimed to assess MM in mothers of preschoolers. Our inclusion criterion was mothers, both working and nonworking, with children aged 2-6 years. We recruited eligible mothers on the basis of convenience, including those from various organizations, such as medical colleges, schools, and private institutions, for working mothers and random convenience sampling for nonworking mothers. Prior to data collection, the MM Coding Manual was reviewed for cultural relevance. A panel of subject matter experts, including the research supervisor, the author of the MM Coding Manual, a qualitative researcher with expertise in mind-mindedness and infant-mother interaction, a senior researcher from Quaid-e-Azam University, and the researcher assessed the brief interview guide's suitability for mothers of preschoolers, both working and nonworking. The evaluation considered vocabulary, comprehension, and overall clarity. The SME panel found the interview question to be easily understandable and clear. Dr. Elizabeth Meins, the author of the manual, recommended that the coding scheme did not require translation, as it was intended for use by bilingual researchers.

For data collection, an open-ended interview guide from the MM Coding Manual was used [18]. The participants were informed that there were no right or wrong answers and were encouraged to speak freely. They were asked to describe the child and were made comfortable with some general questions about the child's siblings and school grade. After their initial response, they were asked if they had anything else to add. While additional follow-up questions were included, they were not analyzed as part of the MM assessment, following the Coding Manual guidelines [18].

The interviews were transcribed and analyzed to identify mind-related comments from mothers. The analysis followed the MM coding manual, categorizing the attributes mentioned into mental, behavioral, physical, general, and self-referential categories. Initially, the transcriptions were analyzed and coded into six categories. The total number of utterances in each interview was then tallied, and the number falling into each category was counted. Once the sum was calculated for both, the sum of each category was divided by the total number of utterances to control verbosity. The resulting number was the index score for the category.

$$\frac{\text{Total number of utterances for each category}}{\text{Total number of utterances}} = \text{Index score of that category}$$

The MM index measures mental attributes, calculated as a proportion of total attributes produced by the caregiver during the interview to account for verbosity differences [12].

The participants signed a consent form outlining ethical guidelines for the interview. They consented to audio recording their interviews for transcription, with assurance that the data (audio, transcriptions, and coding) would be used solely for research purposes and not shared elsewhere. The study was approved by the Institutional Review Board of Foundation University School of Science & Technology.

Results

In our study, 30 mothers participated, and recruitment ceased upon reaching data saturation. Table 1 summarizes the key characteristics of the mothers and children included in the study. Among the 30 participants, 15 were working mothers from various professions, while the remaining 15 were nonworking mothers. Among these mothers, 19 aptly described their child's mental characteristics on the basis of the index score.

Table 1: Key characteristics of the participants

S No.	Mother's Occupation Status	No. of Children	Gender of Child	Age of Child	Birth Order of Child
1	Working	1	male	2 years	1st
2	Working	3	female	6 years	2nd
3	Working	2	male	4 years	1st
4	Working	2	male	5 years	2nd
5	Working	3	male	6 years	3rd
6	Working	1	male	6 years	1st
7	Working	2	female	4 years	1st
8	Working	4	female	6 years	3rd
9	Working	1	female	3 years	1st
10	Working	1	male	2 years	1st
11	Working	3	male	6 years	1st
12	Working	2	male	5 years	2nd
13	Working	2	female	6 years	1st
14	Working	3	female	5 years	2nd
15	Working	3	male	3 years	3rd
16	Nonworking	2	female	3 years	2nd
17	Nonworking	4	female	4 years	4th
18	Nonworking	1	female	2 years	1st
19	Nonworking	2	female	5 years	1st
20	Nonworking	4	male	4 years	4th
21	Nonworking	2	female	2.5 years	1st
22	Nonworking	1	female	3 years	1st
23	Nonworking	2	female	3 years	1st
24	Nonworking	3	male	2 years	2nd
25	Nonworking	4	male	3 years	4th
26	Nonworking	1	female	2 years	1st
27	Nonworking	2	male	4 years	1st
28	Nonworking	2	female	2 years	2nd
29	Nonworking	2	male	5 years	1st
30	Nonworking	4	male	3 years	2nd

Table 2: Index Scores of Mother 1

Attribute	Total Word Count (Verbosity)	Index Score
Mental	465	0.19
Behavioral	90	0.14
Physical	67	0.03
General	16	0.62
SR	292	0

SR= Self-referential

Table 3: Index Scores of Mother 2

Attribute	Total Word Count (Verbosity)	Index Score
Mental	201	0.29
Behavioral	59	0.1
Physical	21	0.06
General	13	0.53
SR	108	0

SR= Self-referential

Table 4: Index Scores of Mother 3

Attribute	Total Word Count (Verbosity)	Index Score
Mental	532	0.16
Behavioral	87	0.13
Physical	73	0.04
General	24	0.59
SR	314	0.06

SR= Self-referential

Table 5: Index Scores of Mother 4

Attribute	Total Word Count (Verbosity)	Index Score
Mental	358	0.6
Behavioral	216	0.09
Physical	33	0.02
General	8	0.28
SR	101	0

SR= Self-referential

Table 6: Index Scores of Mother 5

Attribute	Total Word Count (Verbosity)	Index Score
Mental	280	0.13
Behavioral	39	0.23
Physical	67	0.02
General	8	0.59
SR	166	0

SR= Self-referential

Table 7: Index Scores of Mother 6

Attribute	Total Word Count (Verbosity)	Index Score
Mental	297	0.29
Behavioral	89	0.07
Physical	21	0.01
General	4	0.55
SR	166	0.05

SR= Self-referential

Table 8: Index Scores of Mother 7

Attribute	Total Word Count (Verbosity)	Index Score
Mental	486	0.47
Behavioral	232	0.1
Physical	51	0.02
General	12	0.35
SR	174	0.01

SR= Self-referential

Table 9: Index Scores of Mother 8

Attribute	Total Word Count (Verbosity)	Index Score
Mental	215	0.12
Behavioral	26	0.25
Physical	54	0
General	0	0.62
SR	135	0

SR= Self-referential

Table 10: Index Scores of Mother 9

Attribute	Total Word Count (Verbosity)	Index Score
Mental	141	0.4
Behavioral	57	0.25
Physical	36	0.06
General	9	0.27
SR	39	0

SR= Self-referential

Table 11: Index Scores of Mother 10

Attribute	Total Word Count (Verbosity)	Index Score
Mental	200	0.53
Behavioral	107	0.07
Physical	14	0.02
General	4	0.1
SR	21	0

SR= Self-referential

Table 12: Index Scores of Mother 11

Attribute	Total Word Count (Verbosity)	Index Score
Mental	420	0.38
Behavioral	160	0.23
Physical	100	0.01
General	5	0.36
SR	155	0

SR= Self-referential

Table 13: Index Scores of Mother 12

Attribute	Total Word Count (Verbosity)	Index Score
Mental	358	0.38
Behavioral	138	0.27
Physical	99	0.01
General	5	0.32
SR	116	0

SR= Self-referential

Table 14: Index Scores of Mother 13

Attribute	Total Word Count (Verbosity)	Index Score
Mental	482	0.44
Behavioral	213	0.12
Physical	58	0.01
General	6	0.42
SR	205	0

SR= Self-referential

Table 15: Index Scores of Mother 14

Attribute	Total Word Count (Verbosity)	Index Score
Mental	473	0.34
Behavioral	161	0.03
Physical	16	0.02
General	13	0.4
SR	190	0

SR= Self-referential

Table 16: Index Scores of Mother 15

Attribute	Total Word Count (Verbosity)	Index Score
Mental	523	0.4
Behavioral	214	0.18
Physical	97	0.04
General	26	0.29
SR	155	0.05

SR= Self-referential

Table 17: Index Scores of Mother 16

Attribute	Total Word Count (Verbosity)	Index Score
Mental	82	0.48
Behavioral	40	0
Physical	0	0.01
General	16	0.31
SR	26	0

SR= Self-referential

Table 18: Index Scores of Mothers 17

Attribute	Total Word Count (Verbosity)	Index Score
Mental	53	0.67
Behavioral	36	0.13
Physical	7	0.16
General	9	0
SR	0	0

SR= Self-referential

Table 19: Index Scores of Mothers 18

Attribute	Total Word Count (Verbosity)	Index Score
Mental	170	0.47
Behavioral	80	0.29
Physical	50	0.04
General	7	0.19
SR	33	0

SR= Self-referential

Table 20: Index Scores of Mother 19

Attribute	Total Word Count (Verbosity)	Index Score
Mental	601	0.5
Behavioral	302	0.17
Physical	105	0.11
General	70	0.19
SR	118	0

SR= Self-referential

Table 21: Index Scores of Mother 20

Attribute	Total Word Count (Verbosity)	Index Score
Mental	486	0.38
Behavioral	187	0.25
Physical	123	0.04
General	20	0.3
SR	148	0.01

SR= Self-referential

Table 22: Index Scores of Mother 21

Attribute	Total Word Count (Verbosity)	Index Score
Mental	508	0.5
Behavioral	258	0.24
Physical	123	0.23
General	118	0.01
SR	9	0

SR= Self-referential

Table 23: Index Scores of Mother 22

Attribute	Total Word Count (Verbosity)	Index Score
Mental	468	0.42
Behavioral	201	0.3
Physical	142	0.1
General	49	0.11
SR	53	0.04

SR= Self-referential

Table 24: Index Scores of Mother 23

Attribute	Total Word Count (Verbosity)	Index Score
Mental	384	0.44
Behavioral	170	0.11
Physical	45	0.07
General	27	0.35
SR	135	0.07

SR= Self-referential

Table 25: Index Scores of Mother 24

Attribute	Total Word Count (Verbosity)	Index Score
Mental	350	0.23
Behavioral	83	0.16
Physical	57	0.08
General	29	0.44
SR	157	0.06

SR= Self-referential

Table 26: Index Scores of Mother 25

Attribute	Total Word Count (Verbosity)	Index Score
Mental	563	0.35
Behavioral	201	0.07
Physical	44	0.05
General	30	0.41
SR	234	0.09

SR= Self-referential

Table 27: Index Scores of Mothers 26

Attribute	Total Word Count (Verbosity)	Index Score
Mental	692	0.41
Behavioral	289	0.19
Physical	137	0.09
General	69	0.25
SR	173	0.03

SR= Self-referential

Table 28: Index Scores of Mothers 27

Attribute	Total Word Count (Verbosity)	Index Score
Mental	564	0.21
Behavioral	121	0.35
Physical	201	0.05
General	31	0.36
SR	206	0

SR= Self-referential

Table 29: Index Scores of Mother 28

Attribute	Total Word Count (Verbosity)	Index Score
Mental	215	0.12
Behavioral	26	0.25
Physical	54	0
General	0	0.62
SR	135	0

SR= Self-referential

Table 30: Index Scores of Mothers 29

Attribute	Total Word Count (Verbosity)	Index Score
Mental	465	0.19
Behavioral	90	0.14
Physical	67	0.03
General	16	0.62
SR	292	0

SR= Self-referential

Table 31: Index Scores of Mother 30

Attribute	Total Word Count (Verbosity)	Index Score
Mental	215	0.12
Behavioral	26	0.25
Physical	54	0
General	0	0.62
SR	135	0

SR= Self-referential

Mental Attributes

By its very nature, mental attributes involve any comment that refers to the child's mental life, including will, pretence, memory, interest, mind, imagination, or metacognition. Greater variation was observed in the nature of the mind-minded comments made by the mothers. The comments were mostly shallow and did not represent the deeper functioning of the child's mental

life. The closest mental descriptions that most mothers used were representative of intellectual abilities such as "she is intelligent", "he picks up on things immediately", and "he is curious, he questions everything".

Data analysis revealed a consistent pattern of mental attributes used by mothers. The majority of them were related only to the

intellect, curious nature, or smartness of the child. In descriptions of mothers of children between 2 and 4 years of age, the most common mental descriptions included how they observe and notice things around them and how they pick up tiny details and social cues. There was a lack of comments regarding the emotional regulation that involved mental abilities.

Working mothers mostly described their children's ability to adjust to an environment without them being present around all the time. There was a lack of description regarding the child's emotions, feelings, and way he perceives things or responds to situations on the basis of his mental ability. It was also observed that most mothers, especially working mothers, did not shed light on their child's interests and likes, which involved any mental abilities. In contrast, nonworking mothers were found to comment about their child's interest, e.g., one mother described "she loves to try new things". Another nonworking mother commented, "She takes keen interest in creative things such as coloring and drawing". She also described that "my child loves to play mind games like pretend".

Mothers of children between 4 and 6 years of age described mental attributes in terms of how their child responds to situations, their school abilities and how they express themselves. However, most of these descriptions involve more behavioral manifestations than mental manifestations. Nonetheless, it might be safe to say that mothers of 4–6-year-old preschoolers were not more mind-minded if a comparison was drawn. However, 4– to 6-year-old children's mothers were at least aware of the emotions of their children and described ways in which their child was "helpful", "loving", "responsible" or "sensitive".

Furthermore, the data analysis revealed a pattern of comparison among siblings when they described mental attributes such as intelligence and intelligence. This pattern of comparison was frequently observed in mothers' descriptions of their second- and third-born children. Comparisons were drawn for almost all the participant mothers in this category.

Another Participant, the Mother, Drew Comparisons

"She is my youngest child among three, and she is quite better at managing her emotions than her other siblings."

One of the mothers commented on the intellectual level of her youngest child by drawing comparisons with her other two children and said "he is intelligent than both of his siblings." Therefore, it can be concluded that birth order can create a difference in the way mothers describe her child in reference to mental characteristics.

Behavioral Attributes

These attributes involve comments that are made in reference to the child's behavior, including the activities or games in which the child is involved and how the child interacts with other people on a behavioral level. The nature of the child can also be coded as a behavioral attribute, especially if it involves a behavioral manifestation of a trait, e.g., aggression, being talkative, sharing, or compromising.

Most responses revealed a consistent pattern of behavioral descriptions that involved comments about the child's activities,

energy levels, how the child interacts with other people, and the behavioral nature of the child. In comparison with the mental comments made by mothers, there was a similar proportion of behavioral comments, and in some descriptions, it was even greater. Most mothers described the behavioral attributes in terms of the activities of the child and energy levels. For example:

- "He is very active."
- "He is fond of gaming."
- "He is very naughty."
- "She loves to get ready."

Most working mothers described their child with reference to behavioral attributes. Almost all the participant mothers described their child in the context of social interaction, how they interact with others and what their social nature is. The majority of attributes used by mothers were "social", "friendly", "sharing", and "talkative". Mothers of more than one child describe their child by drawing comparisons with other siblings in the behavioral context. Most of the descriptions revealed the interactive nature and behavior of the child compared with other siblings, for example:

- "He is naughtier than his siblings."
- "She is a little aggressive compared to others."
- "Her way of sharing love is cruel. She hits her young sister."

The findings also revealed that mothers of children aged 2–4 years used behavioral attributes such as "naughty", "aggressive", "active", "talkative", "obedient", and "sensitive", whereas mothers of children aged between 4–6 years used behavioral attributes such as "compromising", "social", "good-natured", "friendly", "expressive", "respectful", "patient", "sharing", and "compromising".

From the qualitative analysis of descriptions, no major differences were found among the behavioral attributes described by working mothers and those described by nonworking mothers. Therefore, we can conclude that mothers are aware of their child's behaviors at all preschool stages and tend to pay attention to them.

Physical Attributes

These include physical attributes of the child, such as physical appearance, birth order, age, height, etc. The analysis of the results revealed a small proportion of physical comments in all the descriptions made by the mothers. The nature of most physical comments was related to the age of the child, birth order and physical appearance. Some mothers also commented on the diet of the child, which can be coded as physical. Some physical descriptions include

- "She is youngest in the house"
- "being a child she is very adorable, very cute"
- "She is my youngest one."
- "She eats healthy."

We do not find much information about what the physical descriptions account for in the parent–child interaction context of MM in the literature; therefore, nothing can be concluded on the basis of these attributes. In terms of proportion, the physical attributes did not account for more than 5% of the whole description, with most of them being 0–3%.

Self-Referential

This category involves comments in which the primary focus is self rather than describing the child. A relatively small proportion of the comments made by a few mothers involved self-referential attributes. Some examples are as follows:

- "...he feels secure with me"
- "I sometimes fear about her."
- "I sometimes get irritated from his questions."
- "Sometimes I feel I haven't given him enough attention."
- "...However, when he is with me, I can control him; however, I like."

Discussion

Mind-mindedness, a measure of how mothers view their young children as individuals with their own minds, rather than just fulfilling their needs, has been studied through interviews with mothers of 2- to 6-year-olds. These interviews revealed the complexity of the mother-child relationship and the challenge of describing their children accurately. Notably, some mothers struggled to articulate their perceptions of their children, possibly because of the evolving nature of a child's personality, subjective maternal perceptions, and limited access to psychological terminology. Some mothers mainly saw their children through the lens of caregiving, focusing on observable behaviors, which may not encompass their full psychological attributes. This suggests a potential gap between maternal perception and a child's psychological complexity. Additionally, there were differences in mothers' understanding of mother-child interaction variables, which were likely influenced by exposure to psychological theories and personal experiences.

However, this study did not assess any differences among demographic characteristics or maternal variables or whether they are associated with maternal mind-mindedness. However, previous studies have shown that maternal education, socioeconomic level, number of previous children, or child temperament are not associated with mind-mindedness. Individual differences in maternal mentalization are associated with mothers' ability to integrate their own childhood attachment experiences, allowing mothers to accurately reflect on their infants' emotional experiences [20]. Thus, mind-mindedness, as a measure of maternal mentalization, may tap into internal maternal characteristics that are indescribable. However, it is arguably based on cultural and individual differences; therefore, the extension of this study may include the assessment of these demographic variables or child and maternal characteristics. This study has limitations, including sample size, demographics, reliance on self-reports, and the lack of a standardized framework for describing children's attributes. Future research should explore how cultural, socioeconomic, and educational factors affect maternal mind-mindedness and incorporate naturalistic observations of mother-child interactions.

Conclusion for Practice

In conclusion, this study underscores the need for a deeper understanding of the factors shaping mothers' perceptions of their children. These insights enrich our understanding of mother-child interactions during early childhood development. Our findings support previous research indicating that mind-mindedness persists, irrespective of demographic factors, in both parents and children [21' 22]. The findings of this study can help educate

mothers, fathers, and educators about the importance of accurately responding to a child's cues. This can help mothers become more perceptive and attentive to their child's needs, reduce their stress and improve their relationship with their children by considering their children's emotions, thoughts, and perspectives [23].

Declarations

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This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of Interest

There are no conflicts of interest to disclose.

Consent

Informed consent was obtained from all individual participants involved in the study.

Consent for Publication

Not applicable

Availability of Data and Material

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Code Availability

Not applicable

Authors' Contributions

Not applicable

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