

# Empathy: It's Relationship to Prenatal Attachment and Previous Parenting Experience

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**Abstract:** According to Ainsworth (1985), the key to promoting a positive attachment lies in the mother's ability to sensitively interpret and respond to her child's cues. Sensitivity of the mother has been strongly associated with the child's subsequent attachment to her child (Pederson, Gleason, Moran & Bento, 1998). Although directly it is sensitivity that Ainsworth and her contemporaries discuss, empathic ability has been implicated as an important attribute leading to sensitive responding (Quinn, 1991). The purpose of the present paper is to examine the relationship between empathy and prenatal attachment and to determine if that relationship would differ depending on the previous parenting experience of the pregnant woman. Comparisons were made between women expecting their first child, women who are already mothers and expecting a subsequent child, and pregnant women who have a previous child with Down syndrome.

**Zusammenfassung:** Nach Ainsworth (1985) liegt der Schlüssel für eine positive Bindungsbeziehung in der Fähigkeit der Mutter, die Bedürfnisse des Kindes sensibel zu verstehen und entsprechend auf sie zu reagieren. Die Sensibilität der Mutter ist eng verknüpft mit der nach folgenden Bindung (Pederson, Gleason, Moran & Bento, 1998). Obwohl Ainsworth und ihre Mitarbeiter direkt immer nur die Sensibilität diskutieren, ist die Fähigkeit zur Einfühlung dabei ein wichtiger Bestandteil der Fähigkeit zu für ein sensibles Reagieren (Quinn, 1991). Das Ziel dieses Beitrages besteht darin, den Bezug zwischen Einfühlung und pränataler Bindungsbeziehung zu überprüfen und zu erfassen, inwieweit sich diese Bindungsbeziehung danach unterscheidet, welche früheren Elternenerfahrungen die Schwangere gemacht hat. Es wurden Vergleiche zwischen drei Gruppen von Müttern gemacht: Mütter, die ihr erstes Kind erwarteten, Mütter, die bereits Kinder hatten und Schwangeren, die ein früheres Kind mit Downsyndrom hatten.

**Keywords:** Empathy, prenatal attachment, parenting experience

## The Empathy Construct

In the literature, the nature of empathy as a construct has been discussed in terms of four issues: The focus for some theorists is whether empathy is a personality trait or is a situational-specific cognitive affective state (e.g., Duan & Hill, 1996). Other theorists debate whether the nature of the empathy is primarily affective (i.e., responding to the emotions of others) or cognitive (involving an intellectual understanding of the experiences of others, or contains both affective and cognitive components (e.g., Duan & Hill, 1996). A third issue, relating to the empathy, is whether self-oriented reactions to the distress of others can be considered a form of empathy, or empathy is limited to other-oriented reactions (e.g., Perez-Albeniz

& de Paul, 2003). Finally, the complexity of empathy at a behavioural level has been noted (e.g., Brems, 2001).

Definitions of empathy in the literature illustrate some of the different approaches to the construct. Some emphasize the emotional aspect by defining empathy as “a vicarious emotional response to the perceived emotional experiences of others” (Mehrabian & Epstein, 1972). Others have underscored the cognitive aspect, and said that empathy is “an attempt by one self-aware self to comprehend unjudgmentally the positive and negative experiences of another self” (Wispe, 1986, p. 318).

Davis (1994), assumed a model of empathy as a stable trait consisting of both cognitive and emotional components. He stated “Empathy is broadly defined as a set of constructs having to do with the responses of one individual to the experiences of another” (p. 12). He strongly advised the consideration of a multidimensional approach to empathy. According to Davis, and many other theorists, the study of empathy is ill-served by limiting it to either the affective or the cognitive realm, and is best served by both perspectives, providing a holistic and more accurate picture. (Bennett, 1995; Davis, 1983a & b; 1994).

### **Measuring Empathy**

Many scales have been developed to measure the different components of empathy (Davis, 1994), e.g., Hogan’s Empathy Scale (EM; 1969), a measure of cognitive empathy; the Questionnaire Measure of Emotional Empathy (QMEE; Mehrabian & Epstein, 1972); and La Monica’s (1981) Empathy Construct Rating Scale (ECRS) a multidimensional measure.

Davis’ Interpersonal Reactivity Index (IRI; 1983a & b), is unique in its approach, in that it can be used to measure both the cognitive and emotional domains of empathy, as well as the self and other oriented component. It provides a multidimensional perspective of empathy encompassing both cognitive and emotional components (Davis, 1983a & b; Hatcher, Nadeau, Walsh, Reynolds, Galea, and Marz, 1994).

### **Parenting and Empathy**

Although few studies have examined directly the relationship between empathy and attachment (Quinn, 1991), the ability to be empathic has been consistently implicated in the literature on parenting (Belsky, 1984; Perez-Albeniz & de Paul, 2003; Quinn, 1991). Also, several recent studies have examined the relationship between empathy and behaviours related to attachment, e.g., dimensions of attachment interpersonal relationships and style (Brems, 2001; Joireman, Needham & Cummings, 2001); adult attachment (Britton & Fuendeling, 2005); parenting strategies (Brems & Sohl, 1995); attachment style (Wayment, 2006) and friendship quality (Soenens, Duriez, Vansteenkiste, & Goossens, 2007). In addition, theories of parenting repeatedly emphasize the importance of correctly interpreting a child’s cues and having to be sensitive to a child’s needs. The desired parenting behaviour is sensitive responsiveness, while empathic ability to perceive and correctly interpret the child’s cues is the precursor, or pre-requisite, characteristic

(Winnicott, 1965; Mahler, Pine, & Bergman, 1975). Hannush (2002), in his book *Becoming Good Parents*, unhesitatingly highlights the importance of empathy, or affective attunement, of the parents to the emotional development of children. According to Hannush, "This kind of attunement validates the subjective experience of children. It affirms the rightness of their perceptions of themselves and the world" (p. 36).

Quinn (1991) examined the attachment patterns of youngsters with Down syndrome and related them to their mothers' empathic ability, as well as their perceived social support. She asserted, that a child with special needs brings out additional empathic resources in the parent due to the extra attention they command. Quinn (1991) found a significant positive correlation between mothers' empathy and the dyadic attachment patterns.

More directly related to the topic of the present article, Doan, Zimerman, and Howell (1997) and Doan, Howell, and Zimerman (1998) used the IRI to examine the relationship among empathy, fetal attachment (using the Maternal and Paternal Fetal Attachment Scale, Cranley, 1981b), attitudes towards pregnancy (using The Prenatal Self-Evaluation Questionnaire, Lederman, 1984), and sex-role identification (The Bem Sex-Role Inventory, Bem, 1974), in a group of male and female, non-parent, non-pregnant undergraduate students. In these studies, undergraduate students, both male and female, who were not parents and not expecting a child, had no difficulty imagining a pregnancy and were able to express their feelings about an imagined pregnancy. As well, the empathic concern subscale was found to be significantly correlated with imagined fetal attachment but negatively correlated to the measure of attitudes towards (an imagined) pregnancy, in both males and females. These findings lend support to the importance of further study into the relationship between empathy and prenatal attachment during pregnancy.

### **Prenatal attachment\* and Its Measurement**

Although there has been some consensus and

overlap in the literature, about the definition of prenatal attachment, there have been differences in the focus of the definitions. For example, Cranley (1981) emphasized the behaviours that represent "affiliation and interaction with their unborn child" (Cranley, 1981a, p. 282). Muller (1993), on the other hand, stressed "the unique, affectionate relationship that develops between a woman and her fetus" (p. 201). Condon (1993) focused on "the emotional tie or bond, which normally develops between the pregnant woman and her unborn infant" (p. 359). Finally, to represent the multidimensionality of the concept of prenatal attachment, Doan and Zimerman's (2002) definition included: "An abstract concept, representing the affiliative relationship between a parent and a fetus, which is potentially present before pregnancy, is related to cognitive and emotional abilities to conceptualize another human being, and develops in an ecological system" (p. 185).

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\* Prenatal attachment has also been termed, Antenatal attachment, Fetal attachment, maternal or paternal fetal attachment.

While there are similarities in the definitions, they each emphasize specific aspects of the relationship a parent has with their fetus. Cranley referred to affiliation, but stressed behaviour in her definition, while Muller described the relationship in terms of its affectionate flavour, the uniqueness of it, and its developmental essence. Condon, as well, emphasized the affectionate aspect of the relationship, but he also made reference to the normative and developmental nature of prenatal attachment. The Doan and Zimmerman definition focused not only on the affectionate nature of the relationship and its developmental nature, but also on the parents' characteristics, and the context of the relationship. In addition, the first three definitions (Cranley's, Muller's and Condon's) are closely related to the measures they each developed (i.e., Cranley's Maternal Fetal Attachment Scale (MFAS), 1981; Condon's Antenatal Attachment Scale, 1993; and Muller's Prenatal Attachment Inventory, 1993).

### **A Study of the Relationship Between Empathy and Maternal-fetal Attachment**

Based on previous research that demonstrated a significant correlation between parental empathy and attachment (Quinn, 1991), and imagined prenatal attachment and empathy (Doan, Zimmerman & Howell, 1997; Doan, Howell & Zimmerman, 1998), the purpose of the present study was to examine the relationship between empathy and prenatal attachment. It was of interest in the present study to further examine if the relationship between empathy and prenatal attachment would be different based on parenting experience, e.g. women expecting their first child, women who are already mothers and expecting a subsequent child, and, pregnant mothers of a child with Down syndrome.

The questions guiding the present study were:

1. Do pregnant women who are already mothers have higher empathy scores than women expecting their first child, implying that empathy was learned or enhanced, through parenting?
2. Do pregnant women who are the mothers of a child with Down syndrome have higher levels of measured empathy than women expecting their first child, or mothers of a typically developing child, implying that mothering a child with developmental disabilities brings out and enhances the empathic abilities of the mother even more than parenting a typically developing child?
3. Do pregnant women who have higher empathic abilities also have higher prenatal attachment, implying that empathic abilities contribute to the affectionate relationship one has with her preborn child?

#### *Participants*

The participants consisted of 171 women expecting their first child; 50 women who were already mothers and expecting a subsequent child, and 15 pregnant mothers who had a child with Down syndrome and were now expecting another child. The mothers in all groups were similar in the demographic variables of education and income, but the group of women expecting their first child was significantly younger than the women who were already mothers.

### *Instruments*

The instruments used were the Davis' measure of empathy (i.e., the Interpersonal Reactivity Index) and Condon's (1993) Maternal Antenatal Attachment Scale (MAAS).

The Interpersonal Reactivity Index (IRI) is a well-validated instrument comprised of four subscales. As their respective names imply, they reflect the following: Perspective taking scale (PT), Fantasy scale (FS), Empathic Concern scale (EC), and, Personal Distress scale (PD). The PT subscale is described by Davis as "the tendency to spontaneously adopt the psychological point of view of others" (Davis, 1983b, pp. 113–114). An item exemplifying this subscale is "I sometimes try to understand my friends better by imagining how things look from their perspective". The FS subscale is described as the "respondents' tendencies to transpose themselves into the feelings and actions of fictitious characters in books, movies, and plays" (Davis, 1983b, p. 114). An example of an item from the FS is "I really get involved with the feelings of characters in a novel". The EC scale describes feelings and concerns which are "other oriented" (p. 114). An example from this subscale is "When I see someone being taken advantage of, I feel kind of protective towards them". And the PD scale measures one's own feelings of "anxiety and unease in tense interpersonal situations" (p. 114). An example from the PD subscale is "Being in intense emotional situations scares me". The subscales are considered to be as follows: EC and PD are emotionally based, while the PT and FS are cognitively based.

The MAAS is comprised of a global prenatal attachment score and two subscales – the Quality of attachment, and the Frequency or intensity of attachment. The subscale Quality of attachment includes experiences such as closeness/distance, tenderness/ irritation, positive/negative thoughts and feelings, as well as representations of the fetus on a continuum from 'real person' to 'living thing'. An example of an item on the Quality subscale is "Over the past two weeks my feelings about the baby inside me have been." (responses ranging from (a) very weak or non-existent, to (e) very strong).

Items measuring the frequency and/or the intensity of the preoccupation with the fetus represent the subscale Frequency. It uses ratings of frequent/infrequent, and strong/weak that do not refer to the 'quality' of the feelings, thoughts, or behaviours in question. An example of an item on the Frequency scale is "Over the past two weeks I have been preoccupied with the baby inside me." (responses ranging from (a) all of the time, to (e) never).

### *The Results*

One-way analyses of variance were conducted to examine the group comparisons on scores of empathy and attachment. These analyses revealed:

- no significant mean group differences on any of the empathy measures, i.e., the empathy global score, and the four subscales.
- significant group differences on the Global attachment score (MAAS), and the Frequency subscale (MAAS,  $F(2, 233) = 7.993, p < .001$ ; FREQ.  $F(2, 233) = 16.762, p < .001$ ). Post-Hoc multiple comparisons, using the Bonferroni and Least Square Difference test, revealed the group of pregnant women who were

already mothers of a typically developing child or children, scored significantly lower on both scores.

Significant correlations between the measures of empathy and attachment and their subscales were found:

- For the groups of women expecting their first child (FT) and women who have a typically developing child or children and are pregnant now (TS), the participants who reported higher global empathy scores, also reported higher global attachment scores and higher scores on the Frequency subscale of the attachment scale (FT Moms: IRI & MAAS:  $r = .206$ ,  $p > .01$ ; IRI & Frequency:  $r = .241$ ,  $p > .01$ ; TS Moms: IRI & MAAS:  $r = .320$ ,  $p > .05$ ; IRI & Frequency:  $r = .425$ ,  $p < .01$ ).
- In all three groups, the higher the empathy subscale Perspective taking, the higher the attachment subscale Frequency. A much larger correlation was observed for the DS Moms group (DS Moms:  $r = .580$ ,  $p < .05$ ; FT Moms:  $r = .150$ ,  $p < .05$ ; TS Moms:  $r = .285$ ,  $p < .05$ ).
- For the FT Moms, the empathy subscale Empathic concern (Concern), was significantly correlated with the global attachment score, as well as with both attachment subscales (MAAS:  $r = .323$ ,  $p < .01$ ; Quality:  $r = .264$ ,  $p < .01$ ; and Frequency:  $r = .292$ ,  $p < .01$ ); and for the DS Moms, with the global attachment score as well as with the Quality subscale (MAAS:  $r = .568$ ;  $p < .05$ ; Quality:  $r = .562$ ;  $p < .05$ ).
- For the TS Moms, no correlations were observed between the Empathic concern subscale and any of the attachment scores.
- The empathy subscale Fantasy was significantly correlated with the attachment subscale Frequency for the FT Moms and for the TS Moms, but not for the DS Moms (FT Moms:  $r = .164$ ,  $p < .05$ ; TS Moms:  $r = .284$ ,  $p < .05$ ).
- Significant correlations were observed for the empathy subscale Personal distress (Distress) with the attachment subscale Frequency, for the two subsequent groups (TS Moms:  $r = .489$ ;  $p < .01$ ; DS Moms:  $r = -.585$ ,  $p < .05$ ). For the TS Moms, the correlation was positive and for the DS Moms, negative.
- The empathy subscale Distress was also negatively correlated with the global attachment score, but only for the DS Moms group ( $r = -.597$ ,  $p < .05$ ).

## Discussion

### *Group Differences in Empathy*

There were no significant group differences on any of the global or subscales of the empathy measure. Two explanations were entertained: the first that the experience of mothering, either a 'typical' child or a child with DS, does not render one more or less empathic. And the second possibility is that the IRI is not a sensitive enough instrument to differentiate parenting-related empathic traits. However, for all groups, there were individual differences in the scores obtained on the IRI and each of the four subscales. For example, on the overall score, the FT group had a range of scores from 31–94; the TS group from 32–101; and the DS group from 53–75 (possible range 0–112). Therefore, some women, particularly in the

FT and TS groups, demonstrated low empathy scores. The implications, for those with low scores, needs further investigation.

### *Group Differences in Prenatal Attachment*

The result of a significantly lower Frequency score, for the TS mothers, came as no surprise. As Condon (1993) noted, once a woman has to look after a child, she might have less time in her subsequent pregnancy, to spend in prenatal attachment mode. However, the reduced Frequency of time spent in prenatal attachment mode, as demonstrated by the mothers of a typically developing child, was not correlated with the Quality of her prenatal attachment, which they were for the other two groups.

The variability of scores on all three of the prenatal attachment measures, i.e., MAAS, Quality and Frequency scores, was also apparent for each of the groups. For example, on the MAAS measure, for the FT, TS, and DS groups respectively, their scores ranged from 36–70; 33–68; and 42–66 (possible range 0–76). This variability of scores is consistent with previous research, e.g., Doan and Zimmerman, (2002) and suggests some of the women in all groups had relatively low attachment scores.

### *Empathy and Prenatal Attachment*

For the FT and TS groups, there was a significant relationship between the measure of empathy and prenatal attachment, i.e., the higher the level of empathy, the higher the scores on both the Global and Frequency scores of the attachment measure. The correlations were not significant for the DS group. To understand the lack of correlation with the DS group, the subscales of the empathy and attachment measures were examined.

The Perspective taking subscale of the empathy measure and the Frequency subscale of the prenatal attachment scale were significantly positively correlated in all three groups. These correlations were highest for the DS Moms. The Perspective taking subscale is said to be most representative of cognitive empathy (Carey, Fox and Spraggins, 1988; Davis, 1983b). The PT empathy subscale is comprised of statements that reflect an understanding of the experience of others. This is the subscale most typical of “putting oneself in another’s shoes”.

Although not previously stated in the literature, the Frequency subscale can be seen as the more cognitively based domain of the two attachment subscales. The Frequency subscale represents an awareness of the amount of time and intensity, of engaging in attachment mode. The positive correlation between the Frequency prenatal attachment subscale and PT empathy subscale highlights the connection between cognitive empathy and the conscious awareness of one’s fetus. Interestingly, despite the small group size, the DS Moms’ correlation was significant. Possibly, mothers of a child with DS, who had to respond to the special needs of a child who may not be emitting cues at the same rate or intensity as a typically developing child (Ganiban, Barnett, & Cicchetti, 2000), have sharply tuned their empathic skills to respond to specific areas. In particular, it appears that the mother of a child with DS who understands the general experience of others, also spends more time thinking about her fetus and his or her experience.

The Empathic concern subscale of the empathy measure and the Quality subscale of the attachment scale were significantly correlated for the FT Moms and DS Moms groups. For the FT Moms, Empathic concern was also significantly correlated with the Frequency attachment score. Curiously, for the TS Moms, there was no significant correlation between these two variables. The Empathic concern subscale is said to be the closest one to representing the emotional aspect of empathy (Davis, 1983b). The Quality subscale represents the affective aspect of prenatal attachment (Condon, 1993). The only significant correlation with the Quality attachment measure, was the Empathic concern subscale. The Frequency subscale seems generally to be more sensitive to variations in the different subscales of the empathy measure and to the different groups of mothers-to-be.

The relationship between the subscales of empathic concern and quality of attachment would highlight the relevance to parenting, of the ability to feel for the experience of another being who is in a vulnerable position. The more the FT Mom cares and feels for the less fortunate and/or vulnerable (the EC subscale), the stronger the specific affection, and affiliative feelings towards her preborn child. Women expecting their first child may have heightened associations between two affective states – the one, representing general emotional empathy, and the other, the specific feelings towards the preborn child. For mothers of a child with DS, meeting the needs of their child (with DS) may be highly associated with their affection and protective feelings towards that child. Possibly, this extends to their subsequent child even before its born, as can be seen in the results of the present study.

For the TS group, none of the subscales of the empathy measure were correlated with the Quality of their attachment. This finding sets the TS Moms group apart from the other two groups. Interpreting this result presents a challenge. However, other cross-sectional designs with special attention to variables such as empathy, sensitivity, attachment, etc., would confirm or refute the present findings, and further elucidate the connection between emotional empathy and the quality of prenatal attachment.

The interesting result of the DS Moms' moderately high correlation ( $r = .562$ ) between Empathic concern and Quality of prenatal attachment, raises the possibility of a process of parenting, which is different for a parent of a child with a developmental disability. In their theory of Transformed Parenting, Seideman and Kleine (1995) describe the stages of adaptation, coping, and functioning of parents of children with a developmental disability, such as Down syndrome. They posit in one of the stages, that parents become advocates for their own child and at times, also for others in a similar situation. They become in a way "super parents" (p. 43). They strive to become experts on their child's condition and needs, and seek information to that end. In the present study the mothers of child with DS have proceeded to become pregnant subsequently. Possibly, if the theory of Transformed Parenting is considered, the need to advocate on behalf of a their vulnerable child, who does not necessarily express his or her needs in an easily interpretable way, highlights the mother's empathic characteristics as they relate to the commitment they feel towards their child. Possibly, the results of this study indicate that the connection between a mother's empathy, and her commitment

to her child with DS, is generalized to her next fetus, as reflected in the Quality subscale of prenatal attachment.

A surprising finding was the group difference in the correlations between the Personal distress (PD) subscale of empathy, and the Frequency subscale of attachment. In essence, for FT Moms, the PD subscale was not correlated with any MAAS subscale. However, for the TS Moms, there was a moderately high significant positive correlation, while for the DS Moms, there was a moderately high significant negative correlation.

Several studies have mentioned that the PD, one of the two emotional subscales of the IRI, is contradictory to the traditional intention of emotional empathy, which is primarily feeling what others may be experiencing emotionally (Lawrence, Shaw, Baker, Baron-Cohen, & David, 2004; Perez-Albeniz & de Paul, 2003). Rather, the PD subscale measures “the individual’s own fear, feelings of apprehension and discomfort at witnessing the negative experiences of others” (Davis, 1980, p. 4). Some researchers describe the Personal distress subscale as “not considered as a genuine form of empathy” (Batson, Fultz, & Schoenrade, 1987; Perez-Albeniz & de Paul, 2003). In the present study, there seem to be three patterns of associations between the PD and the Frequency subscale of prenatal attachment: 1. Women whose self-oriented reactions to others’ negative experiences, are not related to their prenatal attachment; 2. Women who, when they are particularly sensitive to their own reactions of distress at others’ negative experiences, are likely to engage in prenatal attachment mode more frequently and with higher intensity; and 3. Women who, when they are likely to experience self-oriented reactions to the distress of others, tend to engage in prenatal attachment mode much less frequently, and with less intensity. However, in the present study, these three patterns of association are also related to the women’s previous parenting experience. The first pattern, consisting of no associations between the PD empathy subscale and Frequency of prenatal attachment, is found in the group FT Moms; the second pattern, where the PD empathy subscale is positively correlated with the MAAS Frequency subscale is occurring in the TS Moms’ group; and finally, the pattern where there is a negative correlation between the PD empathy subscale and the Frequency MAAS subscale is found in the DS Moms’ group.

While for women who are mothers of a child with DS, a high score on the Frequency subscale of prenatal attachment is incompatible with the tendency to think first about themselves at the distress of others (a high score on the PD subscale of empathy), for mothers of a typically developing child, it is the opposite. One possible explanation may be that mothers of a child with DS, are likely to experience more intense caregiving, and perhaps more worrying about their child than if the child had no special needs (Atkinson, Scott, Chisholm, Blackwell, Dickens, Tam, & Goldberg, 1995; Cahil, & Masters Glidden, 1996). It may become clear to mothers of a child with DS, that when their initial reaction to the distress of others is a self-oriented one, they are not as effective in dealing with the issues (involving the child with DS) that they must take care of. The mother of a child who is typically developing has not faced having to deal with the additional demands of ensuring the physical and mental development of a child with a developmental disability. The TS Mom, whose child has less intense and urgent needs, may have had less opportunity to associate self-oriented feelings, with insufficient care. In

fact, as the results of this study show for the mother of a typically developing child, the self-oriented reactions at the distress of others are positively related to the frequency of her thoughts and behaviours she has developed towards the subsequent baby she is presently carrying.

The conceptual difference between self- vs. other oriented empathy poses at least two questions in the area of parenting. First, what are the individual differences on these two conceptually different aspects of empathy, and how do they correspond to parenting status (first timers, parents of two or more children, parents of a child with disabilities, etc). The second question is what is the relationship of these two orientations of empathy with actual helping, or caregiving, behaviour. The results, of group differences in the correlational pattern with prenatal attachment, suggest that this is an area well worth investigating.

### **Conclusions and Future Directions**

The results of the present study suggest that there is a relationship between empathy and prenatal attachment. Further longitudinal research could help to clarify not only the relationship of empathy and prenatal attachment but also their implications to the future relationship of the mother and her child. As well, the importance of understanding how different levels of empathy and prenatal attachment actually impact on behaviours during pregnancy must be underscored. For example, previous research has reported that women who engaged in behaviours that endangered the fetus (termed fetal abuse) were also found to have low levels of, or lack of, prenatal attachment (Pollock & Percy, 1999).

The variability of scores both within and between groups of pregnant women, suggest that the women with low empathy and/or low prenatal attachment need to be identified and programmes developed to augment their level of prenatal attachment. The differences found among the three groups of pregnant women, in the present study, demonstrate a need for health workers to clearly identify the needs of each group and suggest that researchers should separate out the groups in their research.

It is not possible from correlational data to know whether empathy is a trait, and an antecedent condition for the development of prenatal attachment or whether the parenting experience becomes a specific situation that elicits empathic responses. However, even if empathy is a trait, and would, therefore, be difficult to teach, it would not be impossible to teach behaviours, which indicate sensitivity and understanding of others. As well, active listening can also be taught.

The present study has illustrated that it is important to understand situational factors, such as, whether the woman is expecting her first child, or is already a mother of a 'typical' child, or, whether she is the mother of a child with a disability, when studying psychological processes during pregnancy. As well, this study illuminated the connection between a personality aspect – namely empathy, and a specific area of parenting – that of the prenatal child.

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