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Re-Evaluation of the Psychometric Properties of the Maternal–Fetal Attachment Scale in a Hungarian Sample

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ABSTRACT

Objective: To explore the factor structure of the Maternal–Fetal Attachment Scale (MFAS) and to investigate its psychosocial and demographic correlates in a Hungarian sample.   Q2

Design: Cross-sectional survey.

Setting: A sonography clinic in a metropolitan area.

Participants: One hundred fourteen primiparous and multiparous women over the age of 18 years in the second or third trimesters of pregnancy.

Methods: Participants completed the Hungarian version of the MFAS and provided information on demographic, socioeconomic, and pregnancy-related factors.

Results: The internal consistency of the MFAS total scale was acceptable (Cronbach's alpha coefficient = .87). However, the reliability of the five subscales was low (alpha coefficients between .57 and .74), and the original five-factor model was not supported by the factor analyses. Married mothers had higher scores on the MFAS than participants who were unmarried, and uncertainty about the sex of the fetus was associated with lower attachment scores. Furthermore, gestational age showed a positive correlation with MFAS scores. No significant association was found between the total score on the MFAS and such factors as age, income, or education of the parents; whether the pregnancy was planned; method of conception; number of children born previously; prior perinatal losses; and circumstances of the mother's own birth.

Conclusion: Our study showed that marital status, uncertainty about the sex of the fetus, and gestational age were associated with maternal–fetal attachment; however, more detailed analysis was not possible because of the instability of the subscales of the instrument. Further research is warranted on the underlying factors related to maternal–fetal attachment.

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Ever since John Bowlby's pioneering work, human attachment in different key stages of life has been the focus of attention in research and clinical practice (Bowlby, 1969). Research results from the past four decades indicated that the attachment of mother and child begins as early as pregnancy because of the dynamics of interaction between the mother and fetus (Alhusen, 2008; Brandon, Pitts, Denton, Stringer, & Evans, 2009; Canella, 2005; Erikson, 1996). Earlier researchers found a correlation between prenatal and postnatal attachment and found that mothers with more intense prenatal attachment provided more proximal nurturing stimuli to their children after birth (Müller, 1996; Siddiqui & Haegglöf, 2000). Women who reported higher maternal–fetal attachment during pregnancy had more secure attachment styles, and their children had more optimal early childhood development (Alhusen, Hayat, & Gross, 2013). These results indicated continuity between prenatal and postnatal attachment and confirmed the importance of research in mother–fetal attachment.

A frequently used measure of prenatal attachment is the Maternal–Fetal Attachment Scale (MFAS; Cranley, 1981). The 24-item questionnaire is used to measure the behaviors and attitudes of

> **The predictors and underlying structure of maternal–fetal attachment need further assessment, and studies should be extended to different areas, such as Central Europe.**

pregnant women toward their pregnancies and their developing fetuses. Although the MFAS has five subscales, Role Taking, Differentiation, Interaction, Attribution, and Giving of Self, the psychometric properties of the subscales were shown to be poor in previous studies (Doan et al., 2003). The MFAS inspired many researchers to conduct studies in the field of mother–fetal attachment and led to the development of new instruments to assess different aspects of prenatal bonding such as the Prenatal Attachment Inventory (Müller, 1993) and the Antenatal Attachment Scale (Condon, 1993). Despite the critiques and the spread of new measures developed to address the limitations of Cranley's measure, the MFAS remains the most commonly used scale to measure maternal–fetal attachment and has been translated into several languages (Alhusen, 2008; Beck, 1999). Furthermore, despite construct concerns, in a recent comparative study, the MFAS was listed among the three most useful measures of maternal–fetal attachment because of its good reliability.

Given the importance of prenatal attachment in connection with postnatal maternal behavior, there has been great interest in comprehension of the predictors and potential moderating factors related to maternal–fetal attachment. In their 2009 meta-analysis, Yarcheski, Mahon, Yarcheski, Hanks, and Cannella identified 183 studies in which authors explored the predictors of maternal–fetal attachment. Their findings indicated that gestational age, social support, and prenatal testing had the most substantial effect on prenatal attachment, but anxiety, self-esteem, depression, planned pregnancy, age, parity, ethnicity, marital status, income, and education were also predictors to a lesser degree. The authors of this systematic review concluded that more studies were needed to explore potential cultural differences in maternal–fetal attachment. Previous reports also showed marital status as a significant predictor for maternal–fetal attachment, but age and socioeconomic status did not influence attachment to the fetus (Canella, 2005; Cranley, 1981; Doan, Cox, & Zimmerman, 2003; Grace, 1989; Lindgren, 2001). The mode of conception, that is, conception through natural or assisted reproduction, and history of miscarriage

were also found to be unrelated to maternal–fetal attachment (Armstrong, 2002; Hjelmstedt, Wildström, & Collins, 2006), and some reports indicated that initially feeling fetal movement helped significantly deepen maternal attachment (Doan et al., 2003; Heidrich & Cranley, 1989).

There are cultural differences in the time of acknowledgement of the fetus as a separate person, which might drive cultural dissimilarities in maternal–fetal attachment as well. The knowledge that the fetus is a separate person is deeply rooted in the Hungarian culture. This is well reflected by the folk superstition that if the mother is frightened by something, she has to say "we saw this together" to protect the child from harm. Today, the attitude toward the fetus as a separate entity is ambivalent: the misconception that the pregnant mother has to "eat for two" is very popular; on the other hand, artificial abortion can be conducted until the 24th week of gestation. The fetus's right for life starts only with the 25th week.

Furthermore, medical guidelines and laws are different from country to country, which might indirectly influence attachment by enabling or restricting certain behaviors, such as seeking information or medical care. In Hungary, pregnancy care is free for every pregnant mother with health insurance. After the medical confirmation of the pregnancy, the pregnant mother is taken into the care of the regional health visitor. The national health visitor system has been in place in Hungary since 1915. The duty of the health visitor is to protect the health of, to prevent harm to, and to provide care for the childbearing mother and the child. According to Hungarian medical guidelines, every pregnant woman is entitled to a free medical visit at least one time with a general practitioner, at least one time per trimester with a health visitor, and at least one time per trimester with an obstetrician-gynecologist. (This last visit may include laboratory work, ultrasonographic examination, cardiotocography, gestational diabetes testing, etc.) This system is notably different from that found in the United States, where most studies of MFAS originate.

The purpose of our study was to explore the internal consistency and the factor structure of the MFAS questionnaire on a Hungarian sample. Additionally, we also aimed to investigate the demographic and psychosocial factors that are associated with maternal–fetal attachment in this population. The examination of the factor

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