Original Article

The relationship between multi-dimensional self-compassion and fetal-maternal attachment in prenatal period in referred women to Mashhad Health Center

Soheila Mohamadirizi, Masoumeh Kordi¹

Department of Midwifery, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, ¹Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran

ABSTRACT

Background: Multi-dimensional self-compassion is one of the important factors predicting fetal-maternal attachment which vary among different cultures and countries. So the aim of this study was to determine the relationship between multi-dimensional, self-compassion, and fetal-maternal attachment in the prenatal period. **Subjects and Methods:** This cross-sectional study was carried on 394 primigravida women to Mashhad Health Care Centers in with two stage sampling method (cluster-convenience) in the year 2014. Demographic/prenatal characteristics, multi-dimensional self-compassion (26Q) with five dimension (including self-kindness, self-judgment, common humanity, isolation items, mindfulness, over-identified), and fatal-maternal attachment (21Q) were completed by the participants. The statistical analysis was performed with various statistical tests such as Pearson correlation coefficient, *t*-test, one-way ANOVA, and linear regression using SPSS statistical software (version 14). **Results:** Based on the findings, the mean (standard deviation) value for multi-dimensional self-compassion was 59.81 (6.4) and for fatal-maternal attachment was 81.63 (9.5). There was a positive correlation between fatal-maternal attachment and total self-compassion ($P = 0.005$, $r = 0.30$) and its dimension including self-kindness ($P = 0.003$, $r = 0.24$), self-judgment ($P = 0.001$, $r = 0.18$), common humanity ($P = 0.004$, $r = 0.28$), isolation items ($P = 0.006$, $r = 0.17$), mindfulness ($P = 0.002$, $r = 0.15$), over-identified ($P = 0.001$, $r = 0.15$). **Conclusions:** There was a correlation between the multi-dimensional self-compassion and fetal-maternal attachment in pregnant women. Hence, educating people like caregivers by community health midwives regarding psychological problems in during pregnancy can be effective in early diagnosing and identifying such disorders.

Key words: Attachment, compassion, Iran, prenatal

INTRODUCTION

Attention to the issues related to pregnancy is one of the main topics of health in any society and is considered as an effective intervention to improve pregnancy outcomes.[1] In this regard, there is abundant evidence about the growing attachment between mother and her fetus during pregnancy which is reflected in the behavior of mothers. The early relationship between mother and fetus before birth is described as the mother-fetus attachment. When a mother-fetus attachment occurs during pregnancy, she is ready to establish an enjoyable relationship after the baby is born.[2]

Address for correspondence: Ms. Masoumeh Kordi,
Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran.
E-mail: kordim@mums.ac.ir

Attachment is a warm, sincere, and lasting relationship between mother and the child which is satisfactory for both of them and facilitates the interaction between mother and child. The researchers have shown that an increase in attachment leads to establishing long-lasting relationships in which reduction of mother's anxiety is very important. Pillitteri believes that the attachment develops from the beginning of pregnancy and gradually increases. Hence, that it reaches its peak in the third quarter and continues after delivery and plays an important role in establishing a successful mother and pregnancy adaptation.[3,4]

There is some evidence that the emergence of maternal attachment to the fetus is a predicting factor of the attitude and performance of the mothers after delivery, infants and interaction with the patterns of the attachment after birth, mother-infant interactions, and attachment patterns after birth. Mothers, who have higher attachment, their interaction with the infants in the postpartum period is also more which in turn it will have a significant impact on the emotional, cognitive, and social interaction of children.[5]

Several studies have been conducted in connection with the maternal attachment to the fetus. The results of a study by Taavoni et al. in Mashhad on 80 nulliparous, third-trimester pregnant women showed that the mean score of maternal-fetal attachment has been 92 which is a high attachment.[6] Furthermore, in Jamshidimanesh et al. study on 400 pregnant women in Tehran, the score of maternal-fetal attachment has been reported 84 which is a high score.[7]

Self-compassion is one of the psychological factors that can be an important predictor in connection with the maternal-fetal attachment after delivery. Self-compassion is recognized as a three-component structure which includes your kindness against your judgment, human commonalities against isolation, and the presence of mind in the face of extreme assimilation. The combination of these three related components is the characteristics of a person who has self-compassion. It is a kind of self-kindness, self-understanding rather than self-judgment, and a kind of making up for their shortcomings and incompetence.[8]

Admitting that all the human beings are flawed, make mistakes and are involved in unhealthy behaviors is a common characteristic of the human beings. The presence of mind in the face of extreme assimilation in self-compassion leads to a balanced and clear understanding of the experiences of the present moment. It also makes people not ignore the painful aspects of an experience.[9]

Self-compassion requires that the person does not be harsh on himself because of failures and failing to reach the standards; this concept does not mean ignoring or not correcting these failures. When the person believes that self-criticism could make him change and improve, and he would be hardly judged because of his mistakes, self-supportive functions act in a way that do not let the person's self-esteem be threatened to hide the shortcomings of self-awareness.[10] Without self-awareness, these weaknesses are being questioned. In contrast, one would create an emotional security through self-compassion and self-pity and, as a result, he can clearly see himself without being afraid of self-criticism. Moreover, he would find the opportunity to understand and modify inconsistent patterns of thought, feelings and behaviors more accurately. In fact, people with high self-compassion have more psychological health as compared to those with low self-compassion because pain is inevitable for them and the feeling of failure that all people experience will not continue by a ruthless self-blame. This protective attitude toward self is correlated with many of the positive psychological consequences such as having more motivation to solve interpersonal conflicts, problem solving, marital life stability, less anxiety, and more life satisfaction.[10,11] In fact, self-compassion is known as one of the aspects of mental health improvement.[12] that can play a key role in improving relations with others during experiencing important life events such as pregnancy and entering into the postpartum period. It can also help the person to improve the relationships, behavior, and attachment to her child during pregnancy. The results of Cohen's study (2010) showed that an increase in the level of self-compassion during pregnancy is associated with increased maternal-fetal attachment in this period.[13] Moreover, in this regard, the results of Woekel and Ebbeck study) at the University of Oregon on 250 women in the postpartum period showed that the mean score of self-compassion in these women has been 3% and 47% of these women had high self-compassion which is correlated with social anxiety and postpartum depression.[14] In addition, Woekel and Ebbeck in a qualitative study on 80 women in the postpartum period showed that the mean score of self-compassion was about 3% that 16.7% of them had low, 44.4% had average, and 38.9% had high self-compassion.[14] The physical and mental health of women is extremely important and considerable, especially during pregnancy, and is considered as one of the responsibilities of health systems.[15,16] It should be mentioned that because preventive medicine is the quickest way to achieve public health[17] and also due to the existing cultural and ethnic differences about the concepts of self-compassion and the mother's attachment to fetus and newborn and also regarding the fact that no study has been reported in Iran in order to determine the relationship between self-compassion and maternal attachment to the fetus during pregnancy, this study was conducted.

SUBJECTS AND METHODS

This cross-sectional study was conducted on 394 nulliparous pregnant women covered by Health Centers in Mashhad in 2014. After conducting a pilot study on 10 women using the correlation coefficient formula, the sample size (z_1 = coefficient of 95% which is 1.96. z_2 = power factor of 80% which is 0.84. r = 0.15 is an estimate of the correlation between the total score of self- compassion and mother-fetus attachment at the beginning of the study) was calculated as 346 people that by considering 15% increase in size due to random sampling, the final sample size 394 was as calculated.

For sampling from Healthcare Centers in Mashhad (1,2,3), a center (cluster) was randomly selected using table of random numbers and the sample size proportional to the population of each center was selected from that healthcare center using convenience sampling. Exclusion criteria included: The incidence of adverse events or significant stress during pregnancy (the first degree relatives death, severe family conflicts, financial problems, major changes in life situation), taking medications affecting mental functioning, history of mental illness over the past year (mental illness diagnosed by a psychiatrist or taking medications that affect mental functioning), and suffering from medical illness. After the study was approved by the University Ethics Committee, it was submitted to the health centers authorities. Moreover, coordination for the time of the tool distribution of the study was performed and after explaining the objectives of the study and satisfaction of pregnant women and obtaining their written consents and considering the ethical codes, we intended to do the research. Hence, the people were consent people and had the inclusion criteria (based on inclusion and exclusion criteria), at the beginning, they completed personal information/pregnancy questionnaire, and the multi-dimensional questionnaire of self-compassion, and mother-fetus attachment. Self-compassion scale includes 26 items, and the r responses fall within a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). This scale measures the three dipole components in the form of six subscales of self-kindness (5 questions), self-judgment (5 questions), the presence of mind (4 questions), against replication (4 questions), extreme sympathy (4 questions), human commonalities (4 questions), and isolation (4 questions). The mean scores of these 6 scale (including reverse scores) also gives a total score of self-compassion.[16] The 26-item questionnaire of self- compassion has been translated by Saeedi (2012) and Abolghasemi (2012), and its content validity has been confirmed in both studies. Its reliability has been confirmed using Cronbach's alpha coefficient (0.84 and 0.81).[10,18]

The prenatal attachment questionnaire includes 21 items and has been graded based on a 4-point-Likert scale from 4 (almost always) to 1 (almost never). A higher score indicates higher mother-fetus relationship. The minimum achieved scores is 21 and the maximum score is 84.[16] After the English questionnaire was translated into Persian the necessary changes were made, and then both Persian and English questioners were handed into 5 experts for determining face and content validity. After applying the modifications proposed by the professors, the tools were given to two professors for final consideration and approval and after final verification it was used. The reliability of mother-fetus attachment questionnaire was determined 0.96 through test-retest and correlation coefficient (correlation score of both questionnaires at the beginning and 2 weeks after the study on ten pregnant women who were not among the samples). The inclusion criteria included: Informed consent to enter into the study, being Iranian, the first pregnancy, the gestational age of 28 weeks or more. (According to

similar studies and different psychological, each 3 months of pregnancy was considered 28 weeks). The collected data were analyzed by Pearson correlation coefficient and linear regression model through SPSS version 14 [SPSS Inc.: Chicago].

RESULTS

Mean and standard deviation (SD) of age of participants were 26.04 (1.4) years, the body mass index was 23.84 (1.6) kg/m², and a gestational age was 36.54 (1.9) weeks. In addition, 316 people (80%) had average economic and social situation, 354 of mothers (90%), and 366 of husbands (93%) had academic education, and 320 of mothers (2/81%) were housewives.

About 208 (53%) of fetuses were male. In addition, the mean (SD) of total score of self-compassion was 59.81 (6.4), and its dimensions were scored as follows: Self-kindness 15.31 (4.2), its judgment 16.62 (4.5), humanity 12.05 (3.6), isolation 12.49 (4.4), mindfulness 12.71 (4.9), increasing replication 12.43 (4.3), and mother-fetus attachment 81.63 (9.5).

The results of Pearson correlation coefficient test showed that there was a positive correlation between the total score of self-compassion and its dimensions with mother-fetus attachment. So that as the score of self-compassion increased, the mother-fetus attachment score also increased [Table 1].

Among the personal and fertility information, the results of Pearson correlation test showed there was a positive correlation between the maternal age, gestational age, and body mass index with the score of mother-fetus attachment ($r = 0.13$, $P = 0.004$, $r = 0.33$, $P = 0.001$, $P = 0.001$, $r = 0.11$, respectively). As the maternal age, gestational age and body mass index increased, the score of mother-fetus attachment also increased. In addition, the results of one-way ANOVA test also showed that there was a significant correlation between the mother-fetus attachment score and education level of mother ($P = 0.002$). Furthermore, among the personal and fertility information, the results of Pearson correlation coefficient test showed there was not a significant correlation between the maternal age, gestational age, and

Table 1: Correlation between self-compassion and mother-fetus attachment

Self-compassion	Mother-fetus attachment	
	P	Pearson correlation coefficient (r)
Total score of self-compassion	0.005	0.30
Self-kindness	0.003	0.24
Self-judgment	0.001	0.18
Humanity	0.004	0.28
Isolation	0.006	0.17
Mindfulness	0.002	0.15
Increasing replication	0.001	0.15

body mass index with a score of self-compassion. ($P = 0.134$, $P = 0.065$, $P = 0.201$, respectively). In addition, t-test showed that there was no significant correlation between the score of self-compassion and gender and housing ($P = 0.209$, $P = 0.321$, respectively). In addition, one-way ANOVA test showed that there was no significant correlation between the education level of mother and husband and family income with self-compassion score ($P = 0.225$, $P = 0.132$, $P = 0.096$, respectively). To control the effective variables, all variables were entered into the general linear regression model. This means that the effective variables on the score of mother-fetus attachment and self-compassion were considered as independent variables and the main two variables, as dependent variables, were separately entered into general linear regression model in several stages [Table 2].

According to the results of the general linear regression analysis, the only predicting variable on mother-fetus attachment was the score of self-compassion.

DISCUSSION

The results of the present study showed that there was a positive correlation between self-compassion and mother-fetus attachment during pregnancy. In explaining the obtained results, it should be stated that an increase at the level of cognitive self-compassion makes people learn to use their new experiences. This develops more regular activities, such as learning or alternative and more adaptive behaviors. In fact, self-compassion helps people feel more attached and secure. This issue contributes to well-being and better quality of life. In fact, self-compassion increases well-being; because it makes people have access to appropriate care and proper communication and as a result, they will obviously be relaxed emotionally. Also self-compassion is a strong predictor for the severity of symptoms and quality of life and has an important role in predicting mental health, particularly depression and anxiety. Furthermore, the people's ability for being compassionate toward themselves (self-compassion) and having a sense of belonging to others (compassion) are the main reasons for their attachment orientation about mental health.[19-21]

In the same way, the results of Cohen study (2010) at Columbia University on pregnant women showed that there was a positive correlation between the score of self-compassion and a mother-fetus attachment during pregnancy ($P < 0.001$ and $r = 0.18$).[13] In addition, regarding the amount of self-compassion and mother-fetus attachment, the present study showed that the means of these two variables were 59 and 81, respectively, while the results of Cohen study (2010) showed that the means of total score of self-compassion and mother-fetus attachment were 19 and 58, respectively. Although the type of diagnostic tool used in the present study and Cohen's study (2010) have been the same, the difference in mean score of mother-fetus attachment is very high. Differences in culture, society, and especially the religion are the factors affecting the amount of mother-fetus attachment and perhaps are the reasons for the lack of consistency in these two studies.

Another finding of the present study is that it shows significant positive correlation between maternal age and attachment to the fetus. According to Bloom, maternal age is effective on the mental-emotional consistency of pregnancy period and also on the formation of the relationship between mother and the fetus and the baby. When compared to older women, young women may have problems with taking on the role and responsibilities of motherhood or they may have poorer acceptance. In young women, the probability of maternal attachment behavior, such as touching, talking, and embracing baby is also less which is perhaps due to their immaturity. They think that realistic expectations of their children at this period are low. In addition, score of attachment in mothers with lower education was lower. This finding is consistent with the studies of Jamshidimanesh *et al.* and Ustunsoz *et al.* They reported that the higher education of mothers is associated with increased attachment behaviors.[2,7] Regarding the relationship between fertility factors with attachment behaviors to the fetus, there was a significant correlation between gestational age and maternal-fetal attachment. Most researchers believe that attachment behavior starts from early pregnancy and it gradually increases, especially as the mother feels the fetal movement so that maximum attachment behaviors can be seen during the third quarter.

The limitations of this study can be noted as follows: Although the researcher assured each participant's confidentiality, in some cases people may not answer truly to the questions. Using correlational research design that does not provide the possibility to extract causal results is another limitation.

CONCLUSION

The results of this study showed that there is a relationship between psychological self-compassion and mother-fetus attachment.

Due to the existence relationship between these two variables among the research units, the importance of psychological care during pregnancy along with their physical care has been

Table 2: Linear regression between predictor variables (self-compassion, maternal BMI and age, fetal gender) and dependent variable (maternal-fetal attachment)

Predictor variables	Coefficients[a]				
	Unstandardized coefficients		Standardized coefficients	t	Significant
	B	SE	β		
Self-compassion	0.081	0.031	0.133	2.602	0.010
Mothers weight	0.099	0.056	0.091	1.780	0.076
Mothers age	0.224	0.086	0.138	2.621	0.609
Mother BMI	−0.023	0.104	−0.012	−0.225	0.822
Fetal gender	0.050	0.867	0.003	0.058	0.954

[a]Dependent variable: Maternal fetal attachment. BMI=Body mass index, SE=Standard error

confirmed to improve the quality of their lives. In other words, considering the psychological issues, including mother-fetus attachment and also self-compassion during pregnancy, is a good predictor for these issues after childbirth. Therefore, pregnancy period is a desirable time for the relevant screening and diagnosis. Moreover, it is necessary for all health care staff to do timely interventions and provide guidance to help pregnant women. The staff should also try to maintain mental health of pregnant woman and improve their quality of lives through holding self-compassion-based programs in order to improve mother-fetus attachment; because all these actions eventually lead to the promotion of public health.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Mohamadirizi S, Bahadoran P, Fahami F. Effect of E-learning on primigravida women's satisfaction and awareness concerning prenatal care. J Educ Health Promot 2014;3:13.
2. Ustunsoz A, Guvenc G, Akyuz A, Oflaz F. Comparison of maternal-and paternal-fetal attachment in Turkish couples. Midwifery 2010;26:e1-9.
3. Saastad E, Ahlborg T, Frøen JF. Low maternal awareness of fetal movement is associated with small for gestational age infants. J Midwifery Womens Health 2008;53:345-52.
4. Pillitteri A. Maternal & Child Health Nursing: Care of the Childbearing and Childrearing Family. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2003. p. 201-26.
5. Seimyr L, Sjögren B, Welles-Nyström B, Nissen E. Antenatal maternal depressive mood and parental-fetal attachment at the end of pregnancy. Arch Womens Ment Health 2009;12:269-79.
6. Taavoni S, Ahadi M, Ganji T, Hosseini F. Comparison of maternal fetal attachment between primgravidas and multigravidas women with past history of fetal or neonatal death. Iran J Nurs 2008;21:52-61.
7. Jamshidimanesh M, Astaraki L, Behboodi Z, Taghizadeh Z, Haghani H. Maternal-fetal attachment and its associated factors. Hayat 2012;18:33-45.
8. Neff KD. Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. Self Identity 2003;2:85-101.
9. Neff KD. The role of self-compassion in development: A healthier way to relate to oneself. Hum Dev 2009;52:211-4.
10. Saeedi Z, Ghorbani N, Sarafraz MR. The effect of inducing self-compassion and self-esteem on the level of the experience of shame and guilt. Contemp Psychol 2013;8:91-102.
11. Ghorbani N, Watson PJ, Zhuo C, Norballa F. Self-compassion in Iranian Muslims: Relationships with integrative self-knowledge, mental health, and religious orientation. Int J Psychol Relig 2012;22:106-18.
12. Neff KD, Kirkpatrick KL, Rude SS. Self-compassion and adaptive psycho ogical functioning. J Res Pers 2007;41:139-54.
13. Cohen J. Mindfulness and Self-compassion in the Transition to Motherhood: A Prospective Study of Postnatal Mood and Attachment. [PhD Dissertation]; Columbia University; 2010.
14. Woekel E, Ebbeck V. Self-compassion and Associated Cluster Profiles with Postpartum Women in Relation to the Physical Self. [PhD Dissertation]; Oregon State University; 2011.
15. Bahadoran P, Mohamadirizi S. Relationship between physical activity and quality of life in pregnant women. Iranian journal of nursing and midwifery research. 2015;20 (2):282.
16. Mohamadirizi S, Fahami F, Bahadoran P. Comparison of the effect of multimedia and illustrated booklet educational methods on women's knowledge of prenatal care. Iran J Nurs Midwifery Res 2014;19:127-31.
17. Mohamadirizi S, Bahadoran P, Fahami F. Comparsion between the impacts of e-learning and booklet education on primigravida women's satisfaction about postpartum care. IJOGI 2013;16:1-8.
18. Abolghasemi A, Taghipour M, Narimani M. The relationship of type "D" personality, self-compassion and social support with health behaviors in patients with coronary heart disease. Health Psychol 2012;1:5-19.
19. Raque-Bogdan TL, Ericson SK, Jackson J, Martin HM, Bryan NA. Attachment and mental and physical health: Self-compassion and mattering as mediators. J Couns Psychol 2011;58:272-8.
20. Akin A. Self-compassion and loneliness. Int Online J Educ Sci 2010;2:702-18.
21. Golpour R, Abolghasemi A, Ahadi B, Narimani M. The effectiveness of cognitive self-compassion training and emotion-focused therapy on quality of life with depression disorder. Journal of clinical psychology 2014;6:53-64.