

ORIGINAL RESEARCH

Medicine Science 2018;7(3):499-502

The correlation of the gender of the fetus with prenatal attachment and perceived social support level

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Received 12 January 2018; Accepted 08 February 2018
Available online 08.04.2018 with doi: 10.5455/medscience.2018.07.8768

Abstract

Gender preferences that are based on the traditions or expectations of the geography are inevitable in Turkey, as in other countries. This study aimed to determine the correlation of the gender of the fetus with prenatal attachment and perceived social support level. The cross-sectional study was conducted between August 2015 and June 2016 in family health centers in Malatya, Turkey. A power analysis was performed, and the sample size was estimated as 265 pregnant women. The data were obtained "Pregnant Introduction Form," "Prenatal Attachment Inventory," and "Multidimensional Scale of Perceived Social Support." The data were analyzed using descriptive statistics, Mann-Whitney U tests, independent-samples t test, and Cronbach's alpha reliability analysis test. PAI total mean score was found to be 61.67 ± 8.58 for the primigravida women bearing a female child, and 57.74 ± 8.97 for the primigravida women bearing a male child ($p < 0.05$). The mean total score of PAI and MSPSS in multigravida women was determined in favor of males ($p < 0.05$). Although the female gender of the fetus in primigravida women positively affected prenatal attachment, male gender of the fetus or having only male children in multigravida women enhanced both prenatal attachment and perceived social support level. The association among fetal gender, prenatal attachment and perceived social support indicates the impact of gender preference in pregnancy.

Keywords: Gender of the fetus, prenatal attachment, social support, gender

Introduction

Mankind has always focused on gender preference and having a child with a preferred gender [1]. People have always estimated the gender of a fetus by observing the physical appearance and behaviors of a woman during her pregnancy, and the position and movements of the baby in mother's womb [2]. Thanks to the available three- and four-dimensional (3D and 4D) monitoring technology and developments in the medical ultrasound devices, now it is possible to determine the gender of the fetus in the early pregnancy period. These methods are routinely used for the prenatal care services [3,4].

Gender preferences that are based on the traditions or expectations of the geography are inevitable in Turkey, as in other countries [5,6]. It is clear that the gender of the fetus is culturally important in many countries of the world, and the universal gender preference in both developed and developing countries is for males [7,8]. Studies conducted in China, India, Bangladesh, and South Korea, which constitute half of the world's population, indicated that the gender preference was for males [9]. When more than two children

are planned, parents in USA prefer having more male children [10]. Parents in Canada and England stated that they wanted their first child to be a male and preferred having at least one child of each gender. However, the majority of Germans do not care about the gender of their children [8]. Preferring, expecting, or desiring to have a male child is still common among the Turkish families living in rural areas, although Turkish parents have started expecting a healthy child instead of preferring a specific gender in the last few years [11]. Also, having a male child still strengthens the position of women in many regions of Turkey was considered to be a factor that enhancing their status [12]. This situation may negatively affect the prenatal attachment and perceived social support level. This subject has gained significance considering that the maternal role and, most importantly, prenatal attachment are highlighted in the prenatal period in which the gender of the fetus is determined [13,14], and prenatal social support positively affects pregnancy and adaption to maternity [15-17]. Moreover, pregnant women face immense pressure to deliver a male child, which spreads from the family to the society in the traditional Turkish culture [1]. This pressure is regarded as insufficient social support, negatively affects prenatal attachment, and leads to greater health issues for women and their families in the long term.

The aim of this study was to determine the correlation of the gender of the fetus with prenatal attachment and perceived social support level.

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Material and Method

Type of the study

This study was a cross-sectional study.

Place and time of the study

The study was conducted between August 2015 and June 2016 in FHCs of “Sıtmapınarı, Fırat, Özalper, Mücelli, Çarmuzu, Adaflı I, Vahit-Nezahat Bozatlı, and Karakavak,” each of which having a population of more than 18,000 people and affiliated to the community health center in Malatya. Sıtmapınarı FHC has 11, Fırat FHC has 9, Özalper FHC has 8, Mücelli FHC has 7, Çarmuzu FHC has 6, and Adaflı II, Vahit-Nezahat Bozatlı, and Karakavak FHCs have 5 family physicians. Each physician works with a midwife/nurse. Fetal sex determination is not performed in these FHCs, but prenatal care is provided.

Population and sampling of the study

The study population consisted of 847 pregnant women who were in the last trimester of their pregnancy and monitored in the aforementioned FHCs. A power analysis was performed, and the sample size was estimated as 265 pregnant women at a confidence interval of 95% and a significance level of 0.05. The pregnant women who applied to FHC and met inclusion criteria of the study were selected using an improbable accidental sampling method.

- Inclusion criteria
- Planned pregnancy
- Singleton pregnancy
- Awareness of the sex of the fetus
- No health issue diagnosed during pregnancy
- No history of abortus/stillbirth/perinatal death

Data collection tools

“Pregnant Introduction Form,” “Prenatal Attachment Inventory,” and “Multidimensional Scale of Perceived Social Support” were used to collect data.

Pregnant introduction form

This form, developed by the researcher, included nine items including sociodemographic (age, educational and professional status, income, and so on) and fertility (fetal gender, pregnancy, and gender of the born children) characteristics of the pregnant women.

Prenatal attachment inventory

It was developed by Mary Muller in 1993 for explaining women’s emotions and ideas during pregnancy and determining the prenatal attachment of pregnant women. Prenatal Attachment Inventory (PAI), adapted to Turkish by Yılmaz and Beji, had 21 items. Each item was 4-point Likert-type and could be scored with points ranging from one to four. The minimum and maximum scores to be obtained from the scale were 21 and 84, respectively. An increase in pregnant women’s scores meant an increase in the attachment level. The scoring system was as follows: 1, never; 2, occasionally; 3, frequently; 4, always. Cronbach’s alpha coefficient for PAI was found to be 0.84 [18]. Cronbach’s alpha coefficient for PAI in this study was found to be 0.82.

Multidimensional scale of perceived social support

Turkish validity and reliability study of the multidimensional

scale of perceived social support (MSPSS), which was developed by Zimet et al. in 1988, was conducted by Eker et al. in 1995. MSPSS was a scale consisting of 12 items. The minimum score to be obtained from the scale was 12. The maximum was 84. This scale had no breakpoint. The fact that the score obtained from the scale was high meant that the perceived social support was high, too. Cronbach’s alpha coefficient of the MSPSS for all samples was found to be 0.89 [19]. Cronbach’s alpha coefficient in this study was found to be 0.78.

Data collection

The data were obtained between August 2015 and March 2016 by the researcher through a face-to-face interview method. The pregnant women who applied to relevant FHCs every weekday for their prenatal examinations were selected using an improbable accidental sampling method. The questions were read aloud by the researcher, and participants’ answers were recorded. These interviews lasted 5–10 min on average.

Data evaluation

The data were evaluated using SPSS 16.0 package software (SPSS Inc., IL, USA) on a computer. Statistical significance was accepted as $p < 0.05$. The data were analyzed by using descriptive statistics, Mann Whitney U tests, independent samples t test, and Cronbach alpha reliability analysis test.

Ethical dimension of the research

Before conducting the study, written permission was obtained from the Public Health Agency of Turkey and Malatya Ethics Committee for Clinical Researches (Decision no: 2015/5 - 4). Also, another written permission was obtained from the people who conducted the validity and reliability study of these scales. The informed consent form and written consent were obtained from the participants.

Results

In this study, 54.4% of the pregnant women, mean age 28.43 ± 5.34 , were elementary school graduates, and 84.5% were housewives. The rate of those who stated that their incomes were equal to their expenses was 69%. Also, 67.9% of the pregnant women were found to be multigravid, and 54.7% of the fetal gender was males during their pregnancies. Moreover, husbands of 45.7% of the women were elementary school graduates, and 47.9% stated that their husbands were industrial workers.

Table 1 presents the PAI and MSPSS total mean scores regarding the fetal gender in pregnant women. There was statistically insignificant difference between the groups when the PAI and MSPSS total mean scores were compared between women bearing female child and women bearing male child ($p > 0.05$).

Table 2 presents the comparison of PAI and MSPSS total mean scores of primigravid women regarding the gender of the fetus. PAI total mean score was found to be 61.67 ± 8.58 for the primigravid women bearing a female child, and 57.74 ± 8.97 for the primigravid women bearing a male child. The difference between the total mean scores was found to be statistically significant ($p < 0.05$). MSPSS total mean score was found to be 52.85 ± 13.24 for the primigravid women bearing a female child, and 51.86 ± 11.13 for the primigravid women bearing a male child.

The difference between the total mean scores was found to be statistically insignificant ($p>0.05$).

Table 3 presents the comparison of PAI and MSPSS total mean scores of the multigravida women who bearing female fetus and having only female child and those bearing male fetus and having only male child. PAI total mean score was found to be 53.58 ± 8.58 for the multigravida women having a female fetus and only a female child, and 61.35 ± 4.47 for the multigravida women having a male fetus and only a male child. The difference between the total mean scores was found to be statistically significant ($p<0.001$). MSPSS total mean score was found to be 54.87 ± 11.41 for the multigravida women having a female fetus and only a female child, and 61.85 ± 6.52 for the multigravida women having a male fetus and only a male child. The difference between the total mean scores was found to be statistically significant ($p<0.05$).

Table 1. The comparison of PAI and MSPSS total mean scores regarding the fetal gender in pregnant women ($n = 265$)

Scores	Gender of the Fetus		Test
	Female ($n = 120$)	Male ($n = 145$)	
Scale	$\bar{X} \pm SD$	$\bar{X} \pm SD$	
PAI	54.00 ± 11.31	55.82 ± 11.13	$t = -1.315$ $p = 0.190$
MSPSS	52.33 ± 13.01	52.35 ± 13.64	$t = -0.015$ $p = 0.998$

$p>0.05$.

Table 2. The comparison of PAI and MSPSS total mean scores of primigravid women regarding the gender of the fetus ($n = 85$)

Scores	Gender of the Fetus		Test
	Female ($n = 34$)	Male ($n = 51$)	
Scale	$\bar{X} \pm SD$	$\bar{X} \pm SD$	
PAI	54.00 ± 11.31	55.82 ± 11.13	$t = 2.013$ $p = 0.047^*$
MSPSS	52.33 ± 13.01	52.35 ± 13.64	$t = 0.372$ $p = 0.711$

$p>0.05$

Table 3. The comparison of PAI and MSPSS total mean scores of the multigravid women who bearing female fetus and having only female child and those bearing male fetus and having only male child ($n = 58$)

Scores	Gender of the Fetus and Born Children		Test
	Female ($n = 24$)	Male ($n = 34$)	
Scale	$\bar{X} \pm SD$	$\bar{X} \pm SD$	
PAI	53.58 ± 8.58	61.35 ± 4.47	$M-WU = 174.000$ $p = 0.000^*$
MSPSS	54.87 ± 11.41	61.85 ± 6.52	$M-WU = 257.000$ $p = 0.017^{**}$

* $p<0.001$; ** $p<0.05$

Discussion

The difference between the mean scores was found to be statistically insignificant on comparing the PAI total mean scores of the women regarding the fetal gender ($p>0.05$, Table 1). The study by Janbakhshov [20] in which the gender of the fetus did not affect the prenatal attachment, supported the present findings. One of the main reasons why fetal gender made no difference in terms of prenatal attachment was that families cared about the well-being of the fetus more than they did about the gender [11]. Also, the

difference between the mean scores was found to be statistically insignificant on comparing the MSPSS total mean scores of the women regarding the fetal gender ($p>0.05$, Table 1). Koyun and Demir's study [21] in which the rate of the pregnant women who stated that the fetal gender did not affect the behavior of their husbands and acquaintances toward them was 90.8%, supported the present study.

Women generally wish to know the gender of the fetus for several reasons such as specifying the plan for future pregnancies, selecting the model and color of the clothes to be purchased, eliminating the curiosity, and creating an emotional connection between themselves and the fetus by developing proper mindsets [22,23]. The fact that PAI total mean score of primigravid women who were pregnant for the first time and learned that they would have a female child was significantly higher compared to those bearing a male child needs attention. The discrimination between female and male children is clear when the perception of having a child and gender preference are considered. Preference for having a male child exists, but having a female child is also desired [24]. The reasons for desiring a female child in the first pregnancy are the characteristics of daughters such as thoughtfulness and kindness, and functional characteristics such as being closer to their mothers, helping their mothers in house works, and helping their mother's when they are old [25,26]. Also, MSPSS total mean score was found to be 52.85 ± 13.24 for the primigravid women bearing a female child, and 51.86 ± 11.13 for the primigravid women bearing a male child. The difference between the total mean scores was found to be statistically insignificant ($p>0.05$, Table 2). One of the main purposes and indicators of having a family in traditional societies, particularly Turkish culture, is to have a child [24]. Being a mother is a priority for primigravid women, as culturally expected from them, and social support level perceived by the women bearing a female or male child does not make a difference in their first pregnancies.

When multigravida women were evaluated for prenatal attachment and perceived social support levels, PAI total mean score was found to be 53.58 ± 8.5 for the multigravida women bearing a female fetus and having only female child, and 61.35 ± 4.47 for the multigravida women who bearing male fetus and having only male child. Similarly, MSPSS total mean score was found to be 54.87 ± 11.41 for the multigravida women bearing female fetus and having only female child, and 61.85 ± 6.52 for the multigravida women bearing male fetus and having only male child. These findings indicated that the PAI and MSPSS total mean scores were significantly lower for the female children ($p<0.05$). The literature shows that high prenatal attachment is related to sufficient family support and healthy psychological mood [27,28]. The present findings also demonstrated that the PAI and MSPSS (Table 3) mean scores of multigravida women bearing or having a male child were significantly higher, indicating that gender preference was in favor of males, as it is in the countries with patriarchal societies. Considering the perceptions toward female and male children in a family, it is possible to mention that superiority is attributed to male children [24]. Üstünsöz et al. [17] implied in their studies that people in the rural areas of Turkey preferred having a male child, and delivering a male child enhanced the status of women on evaluating the maternal and paternal attachment. Similarly, Gipson and Hindin [29] stated in their studies that women's status enhanced following the birth of a male child. Women considered a male child as an assurance in their old ages and preferred males more because of their economic contributions to the family. The belief that male children maintain the lineage and are deemed responsible for taking care of their aged mothers and fathers

[30], and also the preference of other family members such as mother- and fathers-in-law for male children, negatively affect the social support perceived by the women [25]. Also, a fetus with an undesired gender is thought to affect mother's health in the later stages of pregnancy [27]. A study conducted by Loo et al. [31] in a rural Chinese area indicated that a family's expectation to have a male child caused prenatal anxiety for the pregnant women, and social support was higher for a woman with a male child. Kamel et al. [27] found in their studies that women who desired to have a male child displayed significantly more depressive symptoms compared to the women who wanted to have a female child. A study conducted in 17 antenatal units in Finland suggested that 46.9% of the participants had negative feelings and disappointment after fetal gender was detected, and hence determination of fetal gender positively or negatively affected the fetal-maternal attachment. Also, this was found to be more common among multigravid women [32]. The present findings were similar to the findings reported in the literature.

Conclusion

The female gender of the fetus in primigravid women positively affected prenatal attachment, males gender of the fetus in multigravida women enhanced both prenatal attachment and perceived social support level.

The research was accepted as a Master Thesis by the institute of health sciences at İnönü University in September 2016 with the name of "Determination of the Correlation of the Gender of the Fetus with Prenatal Attachment and Perceived Social Support Level".

This research presented as oral presentation in I. International II. National Congress on Gynecological Diseases and Mother and Child Health, Ege University, 07-08 October 2016, Tepekule Congress Center/ Izmir.

Competing interests

The authors declare that they have no competing interest

Financial Disclosure

The financial support for this study was provided by the investigators themselves.

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