ORIGINAL ARTICLE

OPEN ACCESS

Association of Antenatal Gender Preference with Perceived Stress among Pregnant Women

Dr. Urooba Hasan[1], Ahad Hasan[2], Hafsa Tahir[3]

National Institute of Child Health[1], College of Physical Therapy, Faculty of Allied Health Sciences, Ziauddin University[2], Dr. Ziauddin Hospital[3]

Corresponding Email: ahad.hasan@zu.edu.pk

Abstract

Background: Antenatal stress is the stress experienced by a pregnant mother as a result of stressful life circumstances. Gender preference for male children and dislike for female children prevails in many regions of the world. Therefore, this study aimed to determine how gender preferences during pregnancy, influenced by cultural and sociodemographic factors, contribute to perceived maternal stress.

Methods: A cross-sectional study was conducted to determine the association between stress and gender preference in pregnant women. A total of 363 healthy pregnant females recruited from tertiary care hospitals of Karachi and Lahore via purposive sampling technique were first interviewed for demographic information. The self-structured questionnaire comprises items based on preferences in pregnancies and antenatal or postnatal psychological health, was then asked to be filled to determine the association between antenatal gender preference and perceived stress among the participants.

Results: Male child preferences were significantly linked to antenatal stress (32.8%, $p<0.05$). Gender scans were performed in around 33.1% and 64.6% of mothers desired male children. The rationale behind it is that a male offspring will be able to support them in their later years.

Conclusion: It was concluded that a significant association was found between male child preferences and antenatal stress. Moreover, antenatal stress was also associated with younger mother age, low self-esteem, low socioeconomic position, and a strong familial desire for sons. Premature birth, low birth weight, and inadequate prenatal care are all possible outcomes of stress during pregnancy.

Keywords

Gender Identity, Pregnancy, Prenatal Care, Psychological Factors.

Cite as: Hasan U, Hasan A, Tahir H. Association of Antenatal Gender Preference with Perceived Stress among Pregnant Women. Allied Med Res J. 2024;2(1):157-166. Available from: https://ojs.amrj.net/index.php/1/article/view/40/51.

DOI: https://doi.org/10.59564/amrj/02.01/018 **Received:** 8th September 2023, **Revised:** 10th November 2023, **Accepted:** 28th December 2023

Introduction

Antenatal stress (or antenatal maternal stress) is the stress that a pregnant woman experiences as a result of stressful life circumstances[1]. Stress is a mental or emotional state of strain or tension caused by difficult or demanding situations, and it is experienced when the demands of life outweigh an individual's adaptation potential[2]. An individual's assessment of a stressful incident can trigger a cascade of stress response mechanisms in the psychological, physiological, and behavioral domains. Mother psychosocial distress, as evaluated by perceived stress, has been linked to high salivary cortisol levels, as well as a high prevalence of maternal depression and anxiety[3]. Predispositions to prenatal stress may be culturally distinctive, thus they should be defined in that context[4]. In most areas of the globe, the birth of a female child is seen as a misfortune with economic and social ramifications[5]. Whereas ownership of a dwelling place influences the sex ratio at birth in favor of men[6]. In comparison to women who live in non-owned households, it has been stated that women who live in owned dwellings have more sons. However, it is still controversial if the ownership status of a dwelling location influences the gender of a child being produced[7]. Gender bias exists in most societies in favor of domineering males who are seen as future leaders. Furthermore, certain traditional communities are particularly gender-sensitive and patriarchal since they desire a male to succeed his father as heir and carry on his family line after his death[8].

The "one-child policy" in China, on the other hand, is regarded to increase the pressure on many families, particularly those in rural regions, to have a male child[9]. Among Chinese women, having a son indicates that nothing can separate her from the family or give her a voice to defend herself inside the family. In the North Indian states, however, societal circumstances like dowry, anxieties about the family name, and looking forward to the son as a breadwinner, all of which contribute to women's poor status, have made the cruel practice of female feticide popular in the middle and upper socioeconomic classes[10]. All of the risk factors listed above have been linked to the development of stress and pressure in pregnant women throughout their prenatal period.

Numerous studies have been conducted to perceive the level of stress in pregnant women in their antenatal period regarding gender biases such as a total of 436 women in the second trimester of pregnancy were interviewed in urban India using the Gender Preoccupation Questionnaire and psychosocial risk factor. The relationship of these factors and other sociodemographic and obstetric factors with gender preference was examined. Of the sample,

209 women (47.9%) reported the presence of gender preference either in self or in a family member, of whom 120 (57.4%) preferred a male child[11]. Multipara women (111/220, 50.5%) had a higher rate of gender preference than primiparous women (98/216, 45.37%). Overall, women who expressed a desire for a male child had greater anxiety levels as well as higher stress levels than women who reported a preference for a girl child or had no preference. Furthermore, in a sample of 467 people, the amount of stress associated with gender prejudice is 12.5% in Singapore and 20.6% in China[12]. Previous studies have not focused on several issues that should be recognized as the primary source of stress during the prenatal period, such as the husband's preference for a male child due to unemployment, the association between stress, and high rates of abortion. Furthermore, premature birth and low birth weight are both caused by stress during the prenatal phase of pregnancy. Despite the influence of different events throughout the prenatal period, only a few studies have been undertaken to investigate the link between stresses and pregnancy. Therefore, this study aimed to determine how gender preferences during pregnancy, influenced by cultural and sociodemographic factors, contribute to perceived maternal stress. The linkage will help the healthcare professional in future to conduct interventions for alleviating antenatal stress associated with gender preference, aiming to enhance both prenatal care and maternal mental well-being.

Methods

Study Design and Ethics

This cross-sectional survey was conducted in the tertiary care hospitals in Karachi and Lahore to determine the association between gender preference and reported stress among pregnant women. The study ensured the protection of the rights, privacy and confidentiality of participants under guiding ethical principles approved by the ethical review committee of University of Lahore Teaching Hospital (Reference No#UOLTH-FAHS-14-0995/2018).

Participants Recruitment

Pregnant women attending pre-natal OPD for six months in the tertiary care hospitals of Karachi and Lahore were sorted through the sampling frame and contact for the invitation to participate in the study using the purposive sampling technique. Women aged 18 years or older having healthy pregnancies with no comorbidities or no prior psychiatric problems were included. Pregnant women with a known pre-existing diagnosis of any mental health condition or those who revoked the consent were excluded.

Sample Size

The sample size was calculated using the online software Open EPI, an open-source calculator, version 3.01. Therefore, considering a 100000 population with 50% anticipated frequency, 95% confidence interval and 5% bound of error, a sample size of n=384 was calculated using the the formula: **n = [DEFF*Np (1-p)]/ [(d2/Z21-α/2*(N-1) +p*(1-p)]**

Data Collection Procedure

The participants were first interviewed for demographic information, such as age, marital status, pregnancy, number and gender of children, family structure and past medical and psychological history to determine their eligibility. The self-structured questionnaire comprises items based on preferences in pregnancies, i.e., personal or family, and antenatal or postnatal psychological health, was then asked to be filled to determine the association between antenatal gender preference and perceived stress among the participants. Both the methods of data collection were translated into by the language experts as per the patient sociodemographic background.

Data Analysis Strategies

Data was entered and analyzed on SPSS (Statistical Package for Social Sciences). Participant's demographic details were represented through descriptive statistics through mean and standard deviation, whereas responses were stated as frequency and percentage. A chi-square association test was applied between the antenatal gender and perceived stress variables for any such relation at $p<0.05$ significance.

Results

The questionnaire was completed by 363 out of 384 women. The average age of the participants was 28 years old. More than 70% of the population identified as multigravidas, and came from nuclear families. 82% of them have experienced stress in the past. Furthermore, the gender of the fetus was scanned for 33.1% of the individuals. The details are depicted in Table-1.

Table-1 Demographic Characteristics of Participants

Variables	Values
Age (Years)	28±4.5
Pregnancy Status	
Primigravida	26% (94)
Multigravida	74% (269)
Number of Children	2±1.2
Family Structure	
Nuclear	70% (254)
Extended	30% (109)
Past Medical History	
Hypertension	15% (54)
Gestational Diabetes	8% (29)

Other	77% (280)
Past Psychological History	
Anxiety	12% (44)
Postpartum Depression	6% (22)
Stress	82% (297)
Scanned Fetus Gender	
Yes	33.1% (120)
No	66.9% (243)

Frequency (Percentage)
Mean ± Standard Deviation

Furthermore, over half of the respondents (64.6%) expressed a preference for a male child. The reasons include that male children will support them in their old age (24.8%), in-laws would want to know the sex of the child (39.4%), and female children would be harshly mistreated (16.3%). In addition, (35.8%) women believed that having a male child would elevate their position in the family, while (23.5%) tried various methods throughout their pregnancy to conceive a male child (Table-2).

Table-2 Participants Responses on Questionnaire

Items	Responses	*n* (%)
Have you done with your child's gender scan?	Yes	120 (33.1%)
	No	241 (66.4%)
If you prefer a male child specify the reason?	Son is required to preserve the tradition and values of family	54 (14.9%)
	Son will provide you with the old age support	116 (32%)
	Bringing up a male child is easier and economic	20 (5.5%)
	Daughter is a burden both socially and economically	7 (1.9%)
	Any other reason	36 (9.9%)
	No preference	130 (35.8%)
Did your partner and in-laws wanted to know the sex of your child?	Yes	143 (39.4%)
	No	195 (53.7%)

If gender of your child is female how will your in-laws respond to it?	They will be happy	255 (70.2%)
	They will behave harshly	59 (16.3%)
	Do not accept the female child	5 (1.4%)
	Any other reason	41 (11.3%)
	No	3 (0.8%)
Have you tried any tactics to help you conceive a boy?	Yes	85 (23.4%)
	No	278 (76.6%)
Are you feeling any stress regarding child's gender?	Yes	119 (32.8%)*
	No	244 (67.2%)
Do you or your in-laws prefer to go for feticide if the female fetus is conceived?	Yes	61(16.8%)
	No	302 (83.2%)
Do you feel aggression or irritability?	Yes	115 (31.7%)
	No	248 (68.3%)
Are you neglecting your previous children due to such stress?	Yes	88 (24.2%)
	No	275 (75.8%)

n= Frequency
%=Percentage

Most of the females (32.8 %) were found to have a strong association with perceived stress over the gender of their child throughout the antenatal period (Table-3). Due to their stress, (16.8%) women intended to commit feticide, (31.7%) felt aggressive, (24.2%) neglected their prior children, and (29.2%) did not get the appropriate rest they needed during pregnancy, putting their health at risk.

Table-3 Association of Gender Preference with Perceived Stress among Pregnant Women

Gender Preference* Perceived Stress	Value	Df	Asymptotic (Sig)
Pearson Chi-Square	21.448[a]	2	*0.000
Likelihood Ratio	23.863	2	0.000

**Significant association p<0.05*

Discussion

Gender preference in children is a significant issue in some cultures and has been identified as a risk factor for antenatal anxiety in investigations across several regions despite being understudied[13-14]. To date, findings have tended to come from civilizations where there are clear differences in the consequences of having a male or female kid, and the topic has gotten less attention in western contexts where preferences, if there, are thought not to have a substantial influence. As a result, we conducted cross-sectional research to evaluate the issue among pregnant women. In this study, 64.2% of 363 expecting mothers from a tertiary care hospital's gynecologists OPD wanted male children. Gender preference in children is not a monolithic concept; rather, it may represent a range of viewpoints from key members of the family[15]. Our survey looked at sociodemographic aspects as well as certain potential risk factors, such as the mother's impression of male child preference in the household as they will assist them in their old age, according to 24.8% of women. In addition, 35.8% of women believed that having male offspring would elevate their position in the family, and 23.4 % tried various methods throughout their pregnancies to conceive a male child. Further, 39.4% of in-laws desire to know the gender of the baby, while 16.3% react negatively if the child is female.

Obstetric ultrasonography is a well-known prenatal diagnostic that allow doctors to see and assess the health of a pregnant mother and her fetus[16]. Besides therapeutic diagnostics, obstetric ultrasonography is frequently used to detect a fetus' gender. 33.1% of women in our study had their ultrasonography scanned. An expecting woman is exposed to stress and anxiety as a result of stressful life experiences during her pregnancy[17]. Many nations consider the birth of a female child to be a misfortune. According to our survey, 32.8% of females were found to be anxious about the gender of their child during the pregnancy period, similar to that reported in China (74%), Northern India (60%), and Africa (58.6%). Anxiety symptoms during pregnancy vary based upon the condition, such as generalized anxiety disorder, obsessive-compulsive disorder, or panic disorder[18]. Due to stress, 31.7% of mothers experience aggressiveness, 24.2 % neglect their older children, and 29.2 % don't get much sleep. Cultural preferences and culture-specific difficulties surrounding child gender in the development of psychological discomfort during pregnancy have also been explored.

"Some of the symptoms, such as changes in appetite, activity levels, concentration, or sleep, might coincide with signs of pregnancy, also it is natural to be concerned about the pregnancy's wellbeing", adds Dr. Smith[19]. However, pregnant women must get treatment if experiencing chronic symptoms of despair or anxiety, particularly if unable to function properly. In addition, symptoms of depression in pregnancy may also include being in a gloomy mood for at least two weeks, no longer enjoying things one used to like, lost interest in the world around, guilt, a sense of worthlessness, loss of energy, poor concentration, appetite alterations, feeling hopeless, suicidal thoughts, getting too much or not enough sleep, excessive concern that is difficult to manage, impatience, stress, muscular pains, and a disrupted sleep pattern[20]. According to a study, about 25% of instances of postpartum stress in women begin during pregnancy that may surge at that period[21]. Depressed mood; loss of enjoyment; feelings of worthlessness, hopelessness, and helplessness; thoughts of death or suicide; or thoughts of injuring someone

else are only a few of the signs of psychological stress[22]. Moreover, stress levels were highest during the eighth month of pregnancy and lowest eight months following delivery, however, some women also experience prenatal anxiety about the gender of their child[23]. Thus, stress may be detrimental for both the mother and the child if it is ignored during pregnancy. Women who are stressed are more likely to neglect their health. Premature birth, low birth weight, and inadequate prenatal care are all possible outcomes of stress during pregnancy[24]. Even though both men and women face a variety of potentially stressful experiences during their reproductive years, the gender gap in stress prevalence rates continues[25]. So far, the most severe types of psychological illness associated with delivery have only been documented in women. This study has some strengths, i.e. it targets the population in which the issue of gender preference and psychological health is prevalent. For the first time, the study has been conducted to evaluate the association between these variables, to the author's knowledge. Also, the survey was delivered in English and local language, which is the local language, which is essential considering the likely low levels of literacy in the region. However, due to the cross-sectional nature of the study, there might be a susceptibility to biases. Moreover, the sample size was relatively small, so the results cannot be generalized to the whole population. Therefore, more surveys of longitudinal design or retrospective studies would also be valuable in determining the causality between prenatal and psychological variables among women.

To summarize, the stress in pregnant women is frequently neglected, owing in part to a prevalent misunderstanding that pregnancy protects against mental problems. As a result, more research should be conducted to safeguard mothers from developing prenatal tension about their child's gender, and society must play a highly hopeful role.

Acknowledgment
We extend our gratitude to pregnant women for sharing their personal experiences and insights for this research.

Conflict of Interest
None.

Grant Support and Funding Disclosure
None.

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AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design: Hasan U

Acquisition, Analysis or Interpretation of Data: Hasan U, Hasan A

Manuscript Writing & Approval: Tahir H

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.