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Comparison of Perceived Mental Stress Between Working & Non-Working Infertile Women

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Abstract

***Introduction*:** Infertility affects about 15% of reproductive-age couples globally and is a highly stressful experience, especially for women facing psychological, social, and cultural impacts. Employment status may influence how women cope with infertility stress. ***Objective*:** To compare perceived mental stress levels between working and non-working infertile women attending selected infertility centres in Dhaka, Bangladesh, and to identify associated socio-demographic, reproductive, and social factors. ***Materials & Methods*:** This cross-sectional study from January to December 2022 was conducted at Mohammadpur Fertility Services and Training Center and BSMMU, Dhaka. It involved 110 infertile women (55 working, 55 non-working), aged 20-49, with primary infertility, selected via purposive sampling. Data were collected through face-to-face interviews with a pretested semi-structured questionnaire including the PSS-10. Height and weight were measured for BMI. SPSS v25 was used for analysis, employing descriptive stats, t-tests, chi-square, Fisher's exact tests, and regression, with $p<0.05$ as significant. ***Results*:** Working women had higher education (43.6% graduates vs 16.4%, p=0.001) and income (39,845 BDT vs 26,735 BDT, p=0.001), married later (22.16 vs 19.99 years, p=0.011), and shorter infertility duration (4.72 vs 6.05 years, p=0.022). Among working women, 61.8% had moderate stress and 36.4% low stress, while among non-working women, 89.1% had moderate stress and 7.3% had low stress (p=0.001). Marriage duration was linked to stress only among non-working women (p=0.031), with >5 years married experiencing higher stress. Caffeine intake correlated with stress only among non-working women (p=0.041). Social stigma was more common among non-working women (60.0% vs 49.1%). ***Conclusion*:** Non-working infertile women face higher moderate mental stress than working women. Employment acts as a protective factor via financial independence, social identity, and coping resources. Support services should target non-working women, who encounter greater social stigma, longer infertility duration, and fewer coping resources.

Keywords: Infertility, mental stress, working women, non-working women, Perceived Stress Scale, Bangladesh.

INTRODUCTION

Infertility, defined as the failure to achieve pregnancy after 12 months of regular unprotected intercourse, represents a growing global health concern affecting approximately 15% of reproductive-age couples [1]. Beyond its medical dimensions, infertility constitutes a profoundly stressful life experience that significantly diminishes quality of life and psychological well-being [2]. Affected individuals must redefine personal identity and seek meaning to restore a sense of control [2]. Women experiencing infertility are particularly vulnerable to depression, anxiety, marital difficulties, and social problems [3]. Infertility represents a multifaceted crisis encompassing cultural, religious, and social dimensions alongside medical and psychological challenges [4]. Research consistently demonstrates that infertile women experience higher distress levels than their fertile counterparts, with elevated rates of both depression and anxiety [4]. However, standard psychological measures may

inadequately capture the unique distress associated with infertility experiences [5]. Epidemiological data indicate substantial variation in infertility prevalence, affecting approximately 7.1% of married couples in the United States [6] and up to 25% of couples in some European populations [7]. Cross-cultural studies from Iran [8] and Kuwait [9] confirm elevated psychological morbidity among infertile women, with childlessness frequently resulting in social stigmatization. Social support networks, particularly from partners and family, can mitigate distress [10]. Conversely, infertility often compromises relationship quality and sexual satisfaction [10]. Social pressures surrounding motherhood expectations may exacerbate psychological consequences, particularly where family support remains undifferentiated by kinship type [11]. Multiple factors influence infertility severity and associated psychological outcomes. Advanced maternal age adversely affects conception and healthy child development, creating additional psychosocial stress [12]. Research identifies numerous predictors of infertility-specific stress, including infertility duration and type, psychiatric history, coping difficulties, treatment failures, and perceived stigma [13]. Indian studies reveal that infertile women experience poor subjective well-being, significant psychological distress, and coping difficulties, with nearly one-quarter meeting anxiety disorder criteria [14]. Global estimates suggest mental disorder prevalence among infertile populations ranges from 30% to 80%, depending on clinical characteristics [15]. Obesity independently increases infertility risk, affecting pregnancy and abortion rates [16]. Physical activity may improve outcomes through BMI reduction [16]. Despite male factor infertility contributing to approximately half of cases, women disproportionately bear social burden [17]. Infertility diminishes social status and psychological well-being, particularly in developing countries where stigma remains pronounced [17]. Affected women report feelings of inadequacy, social avoidance, and in severe cases, experience marital instability, abandonment, and exclusion from community functions [18]. The relationship between employment and infertility warrants particular attention. Balancing infertility treatment with work presents physical, mental, and financial challenges [19]. Working women frequently experience sleep deprivation, irregular meals, sedentary lifestyles, and occupational stress, contributing to hormonal imbalances and exacerbating infertility-related mental stress [20]. Employment status significantly affects infertility outcomes [20]. Indian research reports stress prevalence of 64.6% among working women [21], who face double burden of home and workplace responsibilities [22]. Non-working infertile women demonstrate significantly poorer mental well-being, though both groups experience elevated distress [23]. Key stressors include financial problems, uncertainty, and for unemployed women, greater dysfunctional attitudes and social adjustment difficulties [24]. Childless women may encounter social exclusion, prohibitions on interacting with newborns, or difficulties at community gatherings [18]. This study aims to compare mental stress between working and non-working infertile women in Bangladesh and identify contributing factors.'

OBJECTIVES

General Objective:

To compare the difference in perceived mental stress levels between working and non-working infertile women attending selected infertility centers in Dhaka, Bangladesh.

Specific Objectives:

1. To identify the socio-demographic factors associated with mental stress among working and non-working infertile women.
2. To assess and compare the levels of perceived mental stress between working and non-working infertile women.
3. To determine the reproductive and social factors contributing to mental stress among working and non-working infertile women.

MATERIALS & METHODS

This cross-sectional study was designed to comprehensively compare the levels of perceived mental stress between two specific groups of infertile women—those who are employed and those who are not—who are attending particular infertility clinics located in Dhaka, Bangladesh. Conducted over a full year, from January to December of 2022, the research took place in both outpatient and inpatient departments at two prominent medical facilities: Mohammadpur Fertility Services and Training Center, and Bangabandhu Sheikh Mujib Medical University (BSMMU). The study involved a total of 110 women diagnosed with infertility, equally divided into two groups of 55 participants each, categorized as working women and non-working women. These women ranged in age from 20 to 49 years old, all of whom had primary infertility and had been married for at least two years. The selection process employed a purposive sampling technique to ensure the inclusion of relevant participants who met the specific criteria. Women suffering from secondary infertility, or those with chronic medical conditions such as diabetes, hypertension, asthma, or chronic kidney disease, as well as women who had undergone major surgeries recently, were excluded to maintain the study's focus and integrity. The sample size was meticulously calculated using a standard statistical formula, taking into account an 80% statistical power, a 5% significance level, and an estimated 10% non-response rate to ensure robust and reliable results. Data collection was carried out through face-to-face interviews utilizing a pre-tested semi-structured questionnaire. This questionnaire captured critical information on socio-demographic characteristics, reproductive history, social factors, and psychological stress levels measured through the

Perceived Stress Scale (PSS-10). Physical measurements, including height and weight, were recorded to calculate the Body Mass Index (BMI). The questionnaire was originally developed in English, translated into Bangla to ensure cultural and linguistic appropriateness, and pre-tested on ten infertile women to confirm clarity and suitability. Analytical procedures involved using SPSS version 25, applying descriptive statistics such as frequencies, percentages, means, and standard deviations, along with inferential tests like independent samples t-test, chi-square test, Fisher's exact test, and regression analysis. A p-value less than 0.05 was deemed statistically significant, indicating meaningful differences or associations. Ethical approval for the study was secured from the Institutional Review Board (IRB) of the National Institute of Public Health and Medical Research (NIPSOM), and all participants provided written informed consent, with assurances of confidentiality and the right to withdraw from the study at any stage.

RESULTS

Table 1: Socio-demographic characteristics of working and non-working infertile women (n=110)

Characteristics		Working women (n=55)	Non-working women (n=55)	p-value
Age (years)	15-25	12 (21.8%)	26 (47.3%)	0.086
	26-35	39 (70.9%)	23 (41.8%)	
	>35	4 (7.3%)	6 (10.9%)	
	Mean ± SD	28.58 ± 4.72	27.20 ± 5.78	
Educational status	Primary & below	6 (10.9%)	11 (20.0%)	
	Secondary	14 (25.5%)	20 (36.4%)	
	Higher secondary	11 (20.0%)	15 (27.3%)	
	Graduate & above	24 (43.6%)	9 (16.4%)	
Monthly family income (BDT)	<20,000	12 (21.8%)	28 (50.0%)	**0.001**
	20,000-30,000	12 (21.8%)	19 (34.5%)	
	>30,000	31 (56.4%)	8 (14.5%)	
	Mean ± SD	39845 ± 25555	26735 ± 17324	

Table 1 shows the socio-demographic profile of 110 participants, comparing working and non-working infertile women. Most working women (70.9%) were aged 26-35, while most non-working women (47.3%) were 15-25. The average ages were similar (28.58 vs 27.20 years, p=0.086). Educational status differed: 43.6% of working women were graduates or higher, compared to 16.4% of non-working women; 20.0% of non-working women had primary education or less, versus 10.9% of working women. Family income differed significantly (p=0.001), with 56.4% of working women earning above 30,000 BDT, versus 14.5% of non-working women. The mean family income was higher for working women (39,845 BDT) than non-working women (26,735 BDT).

Table 2: Distribution of Perceived Stress Scale (PSS) levels among respondents (N=110)

PSS Level	Working women (n=55)	Non-working women (n=55)
Low stress (0-13)	20 (36.4%)	4 (7.3%)
Moderate stress (14-26)	34 (61.8%)	49 (89.1%)
High stress (27-40)	1 (1.8%)	2 (3.6%)
Total	**55 (100%)**	**55 (100%)**

Table 2 shows the distribution of perceived mental stress levels among working and non-working infertile women using the PSS-10. Most working women (61.8%) had moderate stress, with 36.4% low and 1.8% high. Among non-working women, 89.1% had moderate stress, 7.3% low, and 3.6% high. Non-working women had a higher proportion of moderate stress, while working women had more in the low stress category.

Table 3: Comparison of key reproductive factors between working and non-working infertile women (N=110)

Variables	Working women (n=55) Mean ± SD	Non-working women (n=55) Mean ± SD	p-value
Age at marriage (years)	22.16 ± 5.55	19.99 ± 4.63	0.011
Duration of marriage (years)	6.47 ± 3.90	7.24 ± 4.24	0.326
Duration of infertility (years)	4.72 ± 3.30	6.05 ± 3.61	0.022
Duration of treatment (years)	3.40 ± 3.12	4.05 ± 3.05	0.137
Physical exercise (minutes/day)	62.15 ± 42.07	52.14 ± 29.52	0.156

Table 3 compares reproductive characteristics between groups with mean values and t-tests. Working women married later (22.16 vs 19.99 years, p=0.011) and had shorter infertility (4.72 vs 6.05 years, p=0.022). Although they had longer marriage (7.24 vs 6.47 years) and treatment durations (4.05 vs 3.40 years), these were not significant. Working women also engaged in slightly more physical activity (62.15 vs 52.14 minutes/day), but this was not significant (p=0.156).

Table 4: Association between the type of respondents and the level of mental stress

Type of respondents	Low stress	Moderate stress	High stress	Total	p-value
Working women	20 (36.4%)	34 (61.8%)	1 (1.8%)	55 (100%)	0.001
Non-working women	4 (7.3%)	49 (89.1%)	2 (3.6%)	55 (100%)	
Total	**24 (21.8%)**	**83 (75.5%)**	**3 (2.7%)**	**110 (100%)**	

Statistical Test: Fisher's Exact Test

Interpretation: Statistically significant association was found between type of respondents and the level of mental stress ($p > 0.05$).

Table 4 analyzes the link between employment status and mental stress using Fisher's exact test. Among working women, 36.4% had low stress, 61.8% moderate, and 1.8% high. Non-working women had 7.3% low, 89.1% moderate, and 3.6% high stress. The association was highly significant (p=0.001), showing non-working women had more moderate stress. Overall, out of 110 respondents, 75.5% had moderate, 21.8% low, and 2.7% high stress.

Table 5: Association between duration of marriage and level of mental stress

Type of respondents	Duration of marriage	Low stress	Moderate stress	High stress	Total	p-value
Working women	≤5 years	11 (42.3%)	15 (57.7%)	0 (0.0%)	26 (100%)	0.575
	>5 years	9 (31.0%)	19 (65.5%)	1 (3.4%)	29 (100%)	
Non-working women	≤5 years	4 (16.7%)	19 (79.2%)	1 (4.2%)	24 (100%)	0.031
	>5 years	0 (0.0%)	30 (96.8%)	1 (3.2%)	31 (100%)	

Statistical Test: Fisher's Exact Test

Interpretation: No statistically significant association was found between duration of marriage and the level of mental stress ($p > 0.05$).

Table 5 shows the link between marriage length and mental stress in women, split by employment. For working women with marriages ≤5 years, 42.3% had low stress, 57.7% moderate. Over 5 years, 31.0% had low, 65.5% moderate, 3.4% high stress. No significant link (p=0.575). Non-working women showed a significant link (p=0.031). Over 5 years, none had low stress, 96.8% moderate, 3.2% high. Longer marriage relates to higher stress, especially for non-working infertile women.

Table 6: Association between caffeine intake and level of mental stress

Type of respondents	Caffeine intake	Low stress	Moderate stress	High stress	Total	p-value
Working women	Yes	8 (36.4%)	14 (63.6%)	0 (0.0%)	22 (100%)	1
	No	12 (36.4%)	20 (60.6%)	1 (3.0%)	33 (100%)	
Non-working women	Yes	3 (20.0%)	11 (73.3%)	1 (6.7%)	15 (100%)	0.041
	No	1 (2.5%)	38 (95.0%)	1 (2.5%)	40 (100%)	

Statistical Test: Fisher's Exact Test

Interpretation: No statistically significant association was found between caffeine intake and the level of mental stress ($p > 0.05$).

Table 6 examines caffeine intake and stress in both groups. Among working women, 40.0% drank caffeine regularly, but stress levels showed no significant difference between consumers and non-consumers (p=1.000). For non-working women, a significant link was found (p=0.041). Non-working caffeine consumers had 20.0% low, 73.3% moderate, and 6.7% high stress, while non-consumers had 2.5% low, 95.0% moderate, and 2.5% high. Caffeine intake was thus significantly associated with stress levels in non-working women, with consumers experiencing a slightly better stress distribution.

DISCUSSION

This study compared perceived mental stress between working and non-working infertile women at Dhaka infertility centers. Results showed significant differences in stress levels and related factors, emphasizing the complex link between employment, socio-demographics, reproductive factors, and mental health. The socio-demographic profile of participants

revealed clear differences between working and non-working infertile women. Most working women (70.9%) were aged 26-35, whereas nearly half of the non-working women (47.3%) were younger (15-25 years). Despite these differences, the average ages were not significantly different (28.58 vs 27.20 years, p=0.086). This age pattern indicates a trend of delayed childbearing among working women who prioritize careers before starting a family. Ding et al. noted that increased delayed childbearing significantly affects adverse maternal and perinatal outcomes globally [25]. Similarly, Ahmad *et al*. reviewed how advanced maternal age is linked to psychological impacts on mothers, infants, and their relationships, highlighting that age-related fertility concerns cause psychological distress [26]. Educational attainment varied notably, with 43.6% of working women being graduates or higher versus 16.4% of non-working women, while 20.0% of non-working women had only primary education or less. This gap likely affects health literacy, access to infertility services, and coping resources. Bagade *et al*.'s systematic review found lower education linked to poorer mental health in women with infertility [27]. Monthly family income was significantly higher for working women (39,845 BDT) than non-working women (26,735 BDT), possibly giving them better access to healthcare and less financial stress during infertility treatment. Pathak *et al*. found that financial constraints increased psychological distress among women with delayed conception in Delhi's low- to mid-socioeconomic areas [28]. The Perceived Stress Scale (PSS-10) showed differences in mental stress between groups. Among working women, 61.8% had moderate stress, 36.4% low, and 1.8% high. Non-working women had 89.1% moderate, 7.3% low, and 3.6% high stress. The link between employment status and stress was significant (p=0.001), with non-working women experiencing more moderate stress. Kunwar et al. studied mental health among women with fertility issues in Nepal and linked unemployment to higher distress, supporting our findings [29]. Wang *et al*. examined work stress and reproductive health in urban women, highlighting how employment can cause stress but also offer protection [30]. 36.4% of working women experienced low stress, compared to 7.3% of non-working women, indicating employment may reduce infertility-related stress. Dehkordi et al.'s review found job stress can impact fertility physiologically, but employment offers financial independence, social interaction, and professional identity that may buffer infertility distress [31]. Working women married later (22.16 vs 19.99 years, p=0.011) and had shorter infertility duration (4.72 vs 6.05 years, p=0.022) than non-working women. Their later marriage age reflects delayed childbearing due to career, aligned with global fertility trends. Fauser et al. discussed how delayed childbearing impacts reproductive outcomes [32]. Non-working women faced longer infertility (6.05 vs. 4.72 years), likely raising stress through cumulative burden and fatigue. Kamboj *et al*.'s cross-sectional study in North India linked longer infertility to higher depression and anxiety risk [33]. Shen *et al*. found that prolonged infertility increases disability-adjusted life-years, indicating cumulative psychological and physical effects [34]. Working women engaged in slightly longer physical exercise sessions (62.15 vs 52.14 minutes per day), although this difference was not statistically significant (p=0.156). Kaur *et al*. highlighted that lifestyle factors, including physical activity, influence reproductive health, with moderate to severe physical exercise often serving as a protective factor against infertility [35]. The link between marriage duration and stress varies. Among working women, no significant link (p=0.575) was found, with stress levels stable over time. Non-working women, however, showed a significant link (p=0.031). Those married over five years experienced higher stress; none beyond five years had low stress, and 96.8% had moderate stress. This finding indicates that extended marriage without conception tends to lead to increased stress for women who are not employed, potentially due to heightened social expectations and mounting desperation. Ganaie *et al*. explored infertility stigma and its connection to depressive symptoms, finding that stigma was a significant predictor of psychological distress, with women feeling more social pressure as marriage duration lengthened [36]. Conversely, Heidarieh *et al*. investigated factors influencing IVF success in infertility treatment and highlighted the vital roles of infertility stigma, perceived social support, and mindfulness in shaping psychological outcomes [37]. The link between caffeine and stress varied by group. No significant link was seen in working women (p=1.000). In non-working women, a significant link was found (p=0.041), with caffeine consumers having a more favorable stress distribution (20.0% low stress vs 2.5%). Kaur *et al*. noted caffeine affects reproductive health, especially in mental health patients [35]. The pattern differences between working and non-working women may reflect varied caffeine consumption contexts or suggest that less stressed women are more likely to socialize with caffeine. Social stigma was more prevalent among non-working women (60.0%) compared to working women (49.1%). Al Sabbah *et al*. indicated that perceived social support can lessen the negative impact of infertility stigma on quality of life, highlighting the role of emotional and social resources in reducing distress [38]. The higher stigma experienced by non-working women may be due to their domestic roles, where fertility is often under scrutiny, whereas working women might have greater social engagement. Ganaie *et al*. found infertility stigma and openness with others were significantly related to depressive symptoms and meaning in life among individuals with infertility, highlighting the need for stigma-reduction interventions [36]. Non-working women experienced more moderate stress (89.1%) than working women (61.8%), while working women had more low stress (36.4% vs 7.3%). The difference was highly significant (p=0.001), highlighting employment status as a key factor in infertility-related stress. Wang *et al*. found mindfulness

interventions improve mental health in women with infertility, especially non-working women [39]. Bagade *et al*. stressed addressing social determinants like employment in infertility care to boost mental health [27].

Limitations of the Study

This study had several limitations. First, with only 110 respondents, it may not reflect the broader population of infertile women in Bangladesh. Second, being limited to government hospitals in Dhaka restricts its applicability to rural areas and private healthcare. Third, using self-reported data may introduce recall bias, especially on sensitive topics like marital relationships and stigma. Fourth, the cross-sectional design captures stress at a single point, preventing causal conclusions between employment and mental stress.

CONCLUSION

This study finds both working and non-working infertile women face significant mental stress, with non-working women experiencing higher levels of moderate stress. Differences included education, income, age at marriage, and infertility duration. Employment status correlates with stress levels, particularly protecting against stress over longer marriage periods. Non-working women face more social stigma, longer infertility, and fewer resources. These results highlight the need for tailored support services, especially for non-working women, to provide social and psychological assistance.

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