

**ASSOCIATION BETWEEN PERCEIVED QUALITY OF LIFE AND PARENTAL STRESS IN WORKING MOTHERS DURING COVID -19 PANDEMIC IN DHAKA, BANGLADESH**

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**ABSTRACT**

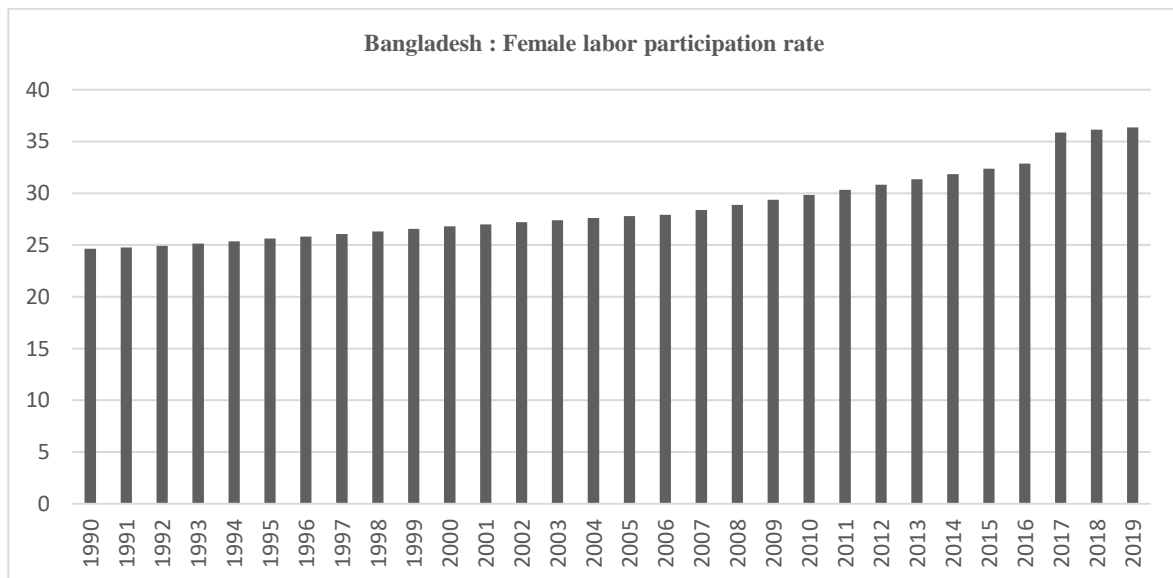
The objective of the current study is to assess the associations between perceived quality of life and parental stress and to investigate if physical activity has an impact on the parenting stress to affect the quality of life in this sample of working mothers. Participants in this cross-sectional study were 108 full-time working mothers residing in Dhaka city (mean age = 35.21 years) who have to work full-time during the COVID-19 pandemic. Participants were randomly selected from different occupations and they completed International Physical Activity Questionnaire Short-Form, the World Health Organization Quality of Life Scale-Brief Version, the Parental Stress Scale, and a demographic questionnaire. Pearson’s Bivariate Correlations and Multiple linear regression analysis were conducted to understand whether parental stress can be predicted based on different domains of quality of life and extent of physical activity carried out by the working mothers. There was a moderate, positive correlation between level of physical and psychological health with parental stress, which were statistically significant. In addition to that, there was also positive correlation seen between social relationships and environmental health with parental stress. In the case of physical activity there was a negative correlation observed with parenting stress and positive association seen with total quality of life of the participants. The study indicated that perceived higher quality of life was associated with greater parenting stress and any kind of physical activity may reduce the negative impact of parenting stress during the time of COVID-19.

Keywords: COVID-19, Parenting Stress, Quality of life, Physical activity and Working mothers.

**INTRODUCTION**

Bangladesh being a developing country has been experiencing rise in their female labor participation rate over the years. Table 1 below shows the labor force participation indicator, showing the data for Bangladesh from 1990 to 2019. The average value for Bangladesh during that period was 28.71 percent with a minimum of 24.65 percent in the year 1990 and a maximum of 36.37 percent in the year 2019. Women are working not only in agricultural sector but also in readymade garments sector, hotels and restaurants, transportation, real estate services, telecommunications, banking and insurance sectors, schools and universities, airline services, army, police services, government services, entrepreneurs and many more. Given the Covid 19 hitting us and the entire world, it has been associated with challenges in keeping the economy running.

**Table 1: Female labour participation rate (1990 -2019)**



Data Source: <http://wits.worldbank.org>

The spread of the pandemic COVID-19 in Bangladesh from February 2020 and the subsequent health emergency led to several restrictive measures taken by the government. Schools and universities have been closed at the end of March, and starting from March 26th, 2020, a quarantine measure became necessary leading to a general closure of almost all public businesses and work activities. Due to pandemic whole structure of the working environment was shaken initially during full and partial lockdown.

Both the male and female workers had to adjust their working pattern during the pandemic. The COVID-19 pandemic led many companies and agencies to allow their workers to work from home (WFH) and thus work from home policy was implemented. In lock down situation this policy made workers feel safe at home with their family at all times, especially in uncertain and difficult situations.

Working women's are contributing a lot in the economic growth of Bangladesh and a large part of economic activities are undertaken by women and overwhelmingly this working women facing a lot of challenges in balancing work life during the pandemic. The COVID-19 crisis, being a working woman in a developing country and also being a working mother has taken on a whole new meaning, as mothers working from home while managing childcare, as well as coming to terms with their intersecting identities. The pressure of handling new working pattern, tension of being able to keep the job secured, dealing with children at home, dealing with children school works, other home errands, taking care of the elderly, financial uncertainties and associated with the fear of vulnerable family members and friends contracting COVID-19, and the global panic during the pandemic has likely led to increased stress and anxiety for some parents (Fegert et al 2020; Pfefferbaum and North 2020; Park et al 2020).

Therefore this study tried to assess the associations between perceived quality of life and parental stress in a sample of working mothers in Dhaka city mainly after transition to work from home during pandemic and to investigate if physical activity has an impact on the parenting stress to affect the quality of life in this sample of working mothers.

## LITERATURE REVIEW

Given the South Asian demographic structure and cultural notion, it always has been seen that women in Bangladesh are principle responsible for household chores and children upbringing even if they work full time jobs and many of them consequently continue to face challenges in the work-life balance. When mothers are working from home, they are faced with household chores and office work at the same time and place. Apart from doing office work, mothers must be accompanying their children to online school, take care of their meal preparations, doing their laundry, feeding the child, monitoring their homework, giving them bath, taking care of elderly people and managing other household chores too. Play time of kids also has to be supervised especially of small kids. In one of the papers, authors have compared men and women, that women felt more emotional challenges in dealing with work life balance during the pandemic (Bhumika, 2020). Brooks et al., 2020; Greenaway, Jetten, Ellemers, & van Bunderen, 2014; Reynolds et al., 2008 found in their papers that parents who are home with children quarantined or have limited social interactions are found to be more vulnerable and were stressed which thus led to aggressive behavior and violence. It was also found in few papers that longer durations of quarantine were associated with poorer mental health specifically, post-traumatic stress symptoms, avoidance behaviors, and anger (Hawryluck et al., 2004 and Reynolds et al., 2008). During the pandemic, many parents have therefore suffered emotional symptoms such as anxiety, depression and stress, and problems of somatization Liu et al., 2020. Qiu et al., 2020, in their largest national survey of 52, 730 valid responses from all over the country in China found that 35% of the respondent faced psychological distress. However, female respondents faced significantly higher psychological distress than their male counterpart.

Higher levels of parenting stress are usually associated with diminished quality of life in parents (Dardas & Ahmad, 2015; Johnson et al., 2011; Lee et al., 2009; Pisula & Porebowicz-Dorsmann, 2017). The impact of COVID-19 stated the fears that parents have during the pandemic is of uncertainty regarding job security — including being penalized as a working parent. In some cases, mothers are facing a greater burden in their caregiving responsibilities compared with father during the pandemic.

Bekker et al. (2000) in their current study highlights the disparate effect of the ongoing COVID-19 pandemic on the mental health of female and male caregivers. They concluded through conducting survey that female caregivers are significantly more burdened in terms of their experience of COVID-19 stress and disruption and their mental health in comparison to their male caregivers. Limbers et al. (2020) surveyed 200 full-time working mothers from the United States in a cross-sectional study, found in the paper that moderate intensity physical activity may decrease the negative impact of parenting stress on social relationships and satisfaction with one's environment in working mothers during the COVID-19 pandemic. Brown et al. (2020) examined the risk and protective impacts of the COVID-19 pandemic in relation to parental perceived stress and child abuse potential among families in the western United States. In their paper they found that COVID-19 related stressors and high anxiety and depressive symptoms are associated with higher parental perceived stress and also are associated with higher child abuse potential.

Due to pandemic parents had to balance household chores, childcare, their office work, and other responsibilities without their usual support system example, school, childcare facilities, grandparents, therapists and many more. However, in findings from Brooks et al. (2020) and Sprang & Silman (2013) showed that quarantine not only had adverse effects on people's well-being but to some extent it was also able to draw some positive implication on the well-being of parents. Parents felt more closeness with their kids and interpersonal relationship improved as parents got to spend more time with their loved ones. It was also found that positive co-parenting is significantly associated with lower parenting stress for both mothers and fathers (May et al., 2015).

## METHODOLOGY

### Participants

In this research, 108 women residing in Dhaka city have participated. Dhaka city has been selected as the study area because it is one of the cities of Bangladesh where WFH was strictly maintained during the study period. All the participants were assessed based on the eligibility criteria that an individual needed to be a female aged above 18 years having at least one child and stays with her at least 70% of the time. Along with that, the participants needed to be full-time workers, working for minimum 30 hours per week and had to stay back at home for work due to the existence of COVID-19.

### Assessment Protocol

There were several self-reported questionnaires used to assess the association between parental stress, physical activity and quality of life of the stated working mothers. Firstly, the International Physical Activity Questionnaire-Short Form (IPAQ, 2002) was used to evaluate self-reported physical activity scheme of the participants to comprehend their daily engagement in physical activity. They reported their physical activity in terms of days and minutes/hours per day over the last seven days in different intensities; such as -lower, moderate and vigorous intensity. Secondly, the World Health Organization Quality of Life Scale -Brief Version (WHOQOL-BREF) was used to estimate the Quality of Life (QoL) of the working mothers during COVID-19. This QoL questionnaire consists of 26 items segregated in four domains of daily functionalities. The domains are – Physical health domain (consists of 7 items), Psychological health domain (consists of 6 items), Social relationships domain (consists of 3 items) and Environmental health domain (consists of 8 items). Every participant gave rating to each item on a 5-point Likert scale. Better QoL is indicated by higher scores on the WHOQOL-BREF. Thirdly, to assess parental stress, the Parental Stress Scale (PSS) was used to measure perceived levels of parenting stress (Berry & Jones, 1995; Zelman & Ferro, 2018). This questionnaire consists of 18-items and participants responded on a 5-point Likert scale. Scores of PSS helped to measure the level of stress parents may have in managing their time between raising children and the carrying out office work during COVID-19. Lastly, there was demographic questionnaire prepared for this study to understand the demography of the included participants which consisted of their age, highest level of education, number of children, individuals' and households' monthly income and Body mass index (BMI) (calculated by dividing weight in kilograms (kg) by height in meters (m) squared).

### Assessment Technique

In this research, a pool of working mothers around the Dhaka city who agreed to be part of the study was contacted through emails. They were sent an email requesting them to complete some screening questions to assess their eligibility for the study based on the criterions mentioned in the assessment protocol. Females who were not comfortable with English language were excluded for the study. After screening the participants, with their consent, study questionnaires were sent and completed by the participants online through google form.

### Data Analysis

In this study all the data were analyzed with the Statistical Package for the Social Sciences (SPSS) version 23.0. Pearson's Bivariate Correlations were computed between the Parental Stress Scale Total Score, International Physical Activity Total Scores and World Health Organization Quality of Life Scale Physical, Psychological, Social Relationships and Environment Health Scores. Multiple linear regression analysis was conducted to understand whether parental stress can be predicted based on different domains of quality of life and extent of physical activity carried out by the working mothers. The significance level for all the analysis was set at  $p < .05$ .

## RESULTS

In this study, socio-demographic characteristics of the 108 working mothers have been analyzed (Table 2). The mean age of the participants was 35.21(SD=4.72) and mothers who were above 18 years of age had on average 1.35 children (SD=0.51) living with them. They were mostly married (94.45%) having Master's degree (77.78%) as the highest level of education. In addition to that majority of the working mothers (38%) had normal Body Mass Index (BMI). In terms of earning, highest number of participants (34.26%) had overall household income ranged between BDT 101,000 - 200,000 on a monthly basis.

Table 3 depicts the bivariate correlations among the different variables related to parental stress scores, total physical activity scores and Quality of life scores in physical health, psychological health, social relationships health and environmental health domain. It has been observed that there was a moderate, positive correlation between level of physical and psychological health with parental stress, which were statistically significant. It reflects that mothers' higher level of physical and psychological quality of life is significantly associated with higher level of parental stress. In addition to that, there was also positive correlation seen between social relationships and environmental health with parental stress. It can also be seen that total scores of quality of life have a significantly positive association with total parental stress scores. In the case of physical activity there was a negative correlation observed with parenting stress and positive association seen with total quality of life of the participants. Hence, it can be said that higher level of physical activity could lead towards lower level of parental stress and higher level of quality of life of the participants.

**Table 2: Socio-Demographic data of the participants**

Variables	Overall N=108
	Number (%) Mean ± SD
No. of Children	1.35± 0.51
One Child	72(66.7)
Two Children	34(31.5)
More than two children	02(1.9)
Age (Years)	35.21 ± 4.72
BMI (kg/m <sup>2</sup> )	26.82 ± 6.09
Underweight	1 (0.92)
Normal	41 (38.0)
Overweight	50 (46.3)
Obese	16 (14.8)
Marital Status	
Single	1(0.92)
Married	102(94.45)
Widowed	2(1.85)
Separated	0(0.0)
Divorced	3(2.78)
Maternal Highest Level of Education	
Secondary School Certificate/O'Level	0(0.0)
Higher Secondary School Certificate/A'Level	0(0.0)
Bachelor's Degree	14(12.96)
Master's Degree	84(77.78)
Doctorate Degree	10(9.26)
Combined household Income (monthly in BDT)	
Under 15,000	2(1.85)
15,000 to 25,000	0(0.0)
26,000 to 40,000	5(4.62)
41,000 to 60,000	3(2.78)
61,000 to 80,000	10(9.26)
81,000 to 100,000	15(13.89)
101,000 - 200,000	37(34.26)
More than 200,000	36(33.33)
Parental Stress Scores*	43.59±8.39
Total Quality of life scores*	55.32±10.09
Physical Health Domain	13.26±2.72
Psychological Health Domain	13.35±3.13
Social Relationships Domain	14.31±3.91
Environmental Domain	14.38±2.72
Physical Activity Scores*	1.71±0.81

\* Physical Activity Scores 1 = "Low activity", 2 = "Moderate activity" & 3 = "High Activity"

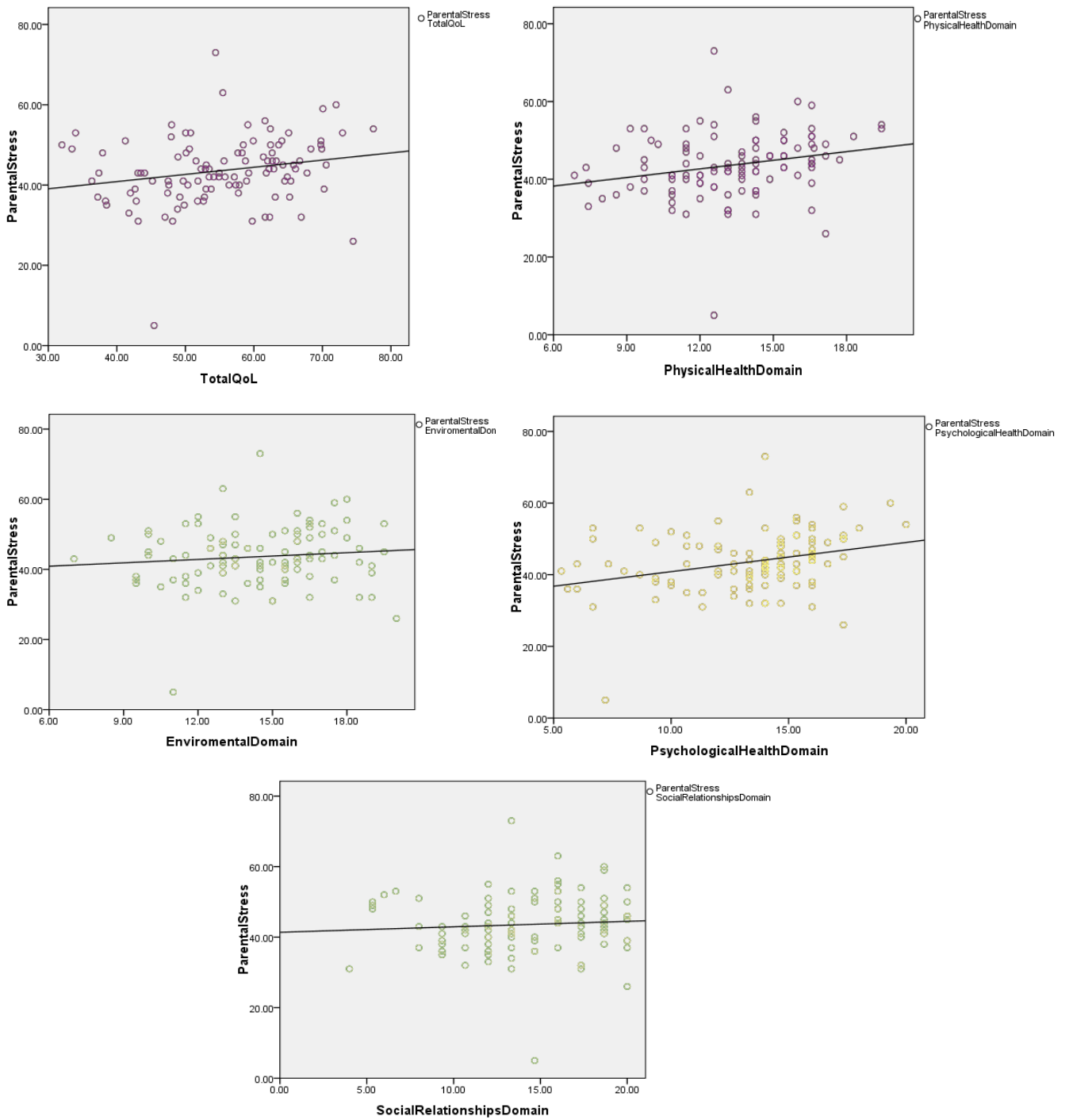
\*Parental Stress Scores range = 18-90; higher score implies higher measured level of parental stress

\*Quality of life scores' domains range = 4-20 (transformed scores), higher score implies higher measured level of quality of life

Table 3: Bivariate Correlations of the variables

Variables		Parental Stress	Physical Health Domain	Psychological Health Domain	Social Relationships Domain	Environmental Domain	Physical Activity
<b>Parental Stress</b>	Pearson Correlation	1	.239*	.304**	.072	.104	-.009
	Sig. (2-tailed)		.013	.001	.457	.284	.925
<b>Physical Health Domain</b>	Pearson Correlation	.239*	1	.675**	.375**	.563**	-.050
	Sig. (2-tailed)	.013		.000	.000	.000	.608
<b>Psychological Health Domain</b>	Pearson Correlation	.304**	.675**	1	.589**	.450**	.074
	Sig. (2-tailed)	.001	.000		.000	.000	.444
<b>Social Relationships Domain</b>	Pearson Correlation	.072	.375**	.589**	1	.563**	.155
	Sig. (2-tailed)	.457	.000	.000		.000	.110
<b>Environmental Domain</b>	Pearson Correlation	.104	.563**	.450**	.563**	1	-.061
	Sig. (2-tailed)	.284	.000	.000	.000		.534
<b>Physical Activity</b>	Pearson Correlation	-.009	-.050	.074	.155	-.061	1
	Sig. (2-tailed)	.925	.608	.444	.110	.534	
<b>Total Quality of life scores</b>	Pearson Correlation	.215*	.776**	.842**	.824**	.779**	.053
	Sig. (2-tailed)	.025	.000	.000	.000	.000	.583

\* Sig level = *p*-value <.05



**Figure 1:** Relationships between perceived total quality of life, physical health domain, psychological health domain, social relationships health domain, environmental health domain, and parental stress in a sample of working mothers in Dhaka city

**Table 4: Associated Factors of Parental Stress among Working Mothers of Dhaka city (n=108)**

Multiple Linear Regression (MLR)		
Variables	b <sup>a</sup> (95% CI)	p-value
Total Quality of Life	0.22 (.02,.34)	.025*
Physical Activity	-0.02(-2.12,1.75)	.829

Forward multiple linear regression method applied. Model assumptions are fulfilled. There was no interaction amongst independent variables. No multi collinearity detected. Coefficient of determination ( $R^2$ ) = .047; **Final Model equation: Parental Stress = 34.01 + (0.22\*total QoL) – (0.02\*physical activity)**; Sig level = p-value <.05

Table 4 shows the relationship between total quality of life and physical activity with level of parental stress. It can be stated that there is an interaction between total quality of life and physical activity that was associated with parenting stress. From the result it can be observed that maintaining higher quality of life contributes to higher stress level of working mothers who were engaged with no or lower level of physical activity during the recent COVID-19 pandemic.

**DISCUSSION**

Around the world women are generally considered to be the primary caregivers of the infants, young and elderly. The scenario is not any different in Bangladesh. Across different strata of the societies, it has been decisively observed from the time of human existence that a woman is understood to be the person responsible for caressing the family members around the globe. In one of the recent studies by Amin (2020), it has been encountered that woman spend considerably majority of their time on household work, more specifically, caregiving services of the close members of the families compared to men. As the malicious pandemic hit the world, the burden of care has increased disproportionately for women in comparison to men of the families (Eh &Jahan, 2020). In a survey there was a clear observation about the enhanced burden of household responsibilities with negligible shift in redistribution of daily chores due to confinement during the pandemic (UN Women, 2020). Moreover, women who are working mothers, having a full-time job are facing another fold of challenges, such as working from home while caring for and educating their children. Due to the COVID-19 all the schools are physically closed but virtually they are carried forward the classes through online sessions. Almost all the children from nursery to higher secondary schools are now having online classes. While the considerably older children can study by themselves, children studying in nursery and primary levels need complete assistance and that mostly comes from their mothers. It can be easily observed that during the pandemic the demands of child care created even greater burden for women considering they already shouldered the majority share of child care in a usual family set up around the world. Even though men also in some cases shared some responsibilities by staying home during confinement, but it was seen that women’s household chores have not necessarily decreased (UN Women, 2020).Alongside, the additional directives about extra measure for cleanliness during this time also intensified the workloads of women who are the ones executing instructions to implement and maintain the general hygiene in the households (Eh &Jahan, 2020).

The objective of the current research was to assess the associations between perceived level of quality of life and parenting stress of the working mothers who are not only faced with heightened level of daily chores’ burden but also encumbered with the full time job responsibilities during the pandemic. In connection to that there was also an effort to understand the associations between integrating a low-moderate physical activity like walking, skipping to manage the perceived stress level of the working mothers around Dhaka city in Bangladesh.

There were several researches done to find out the associations of increased level of parental stress and quality of life since the ingress of COVID-19, where overwhelmingly the results showed a negative association meaning higher level of parental stress leads to lower level of parental quality of life among the working mothers (Limbers et al., 2020, Dardas et al., 2015; Johnson et al., 2011; Lee et al., 2009; Pisula et al., 2017 ). In our study we tried to shift the dimension and had a look at whether trying to maintain and accomplish a better quality of life in terms of physical, social relationships, environmental and psychological health can lead towards perceived higher level of stress of the working mothers during COVID -19 or not. In addition to that we also tried to observe through physical activity survey data that if heightened level of stress could possibly be managed through any kind of low to moderate intensity physical activity or not.

There has been a clear indication in our research that working mothers thought that they have managed to uphold a higher level of living standard and believed that their quality of lives were quite good and in protecting that good quality of living they ended up having amplified level of stress during the pandemic. There are considerable amount of evidences globally where it has been encountered that the overall quality of lives of working mothers have declined due to the intensified level of stress during this pandemic (Limbers et al., 2020, Dardas et al., 2015; Johnson et al., 2011; Lee et al., 2009; Pisula et al., 2017) . Interestingly, in our self-reported survey results we have observed that majority of the participants classified themselves having a good physical, social relationships and environmental health even after having a new dimension for them as ‘work from home’. Now queries can be made regarding the perceived feeling of retaining a higher quality of life during a confinement state. Given the context of our targeted population it could be gazed that they may have adaptive coping strategies and supportive family environments to feel the sustainment of better quality of life even if they were overburdened with additional pressure in continuing family and office work. In earlier researches it has been observed that coping strategies like perceived control over present events, acceptance of unexpected challenges or the ability to accept negative thoughts or experiences without judging them are strongly and negatively associated with perceived stress, anxiety, and depression as well as better quality of life (Grote et al., 2007, Donald & Atkins, 2016). Besides, the participants have possibly seen these challenges in the light of blessings as they could spend more time with their children which were a difficult scenario before the confinement (Eh &Jahan, 2020). On top of that during this time they also could possibly spend considerable amount of quality time with their partners or near and dear ones which gave them the feeling of developing



better social relationships with the family members who are imperative in their lives. However, this outcome of perceived feeling of better quality of life even with overstrained of responsibilities cannot be generalized for the entire population of working mothers around the country as there are always external factors like unsupportive work and family environment, uncertainties and inadvertent consequences associated with COVID-19 could possibly change the directionality and causality of these associations. Longitudinal research and Randomized Control Trials (RCTs) might be needed to have a deeper understanding of the directionality and causativeness of stressors' associations.

In this study, this perceived feeling of better quality of life led towards heightened stress of working mothers during COVID-19 pandemic which has been observed from the multiple linear regression model. In the MLR model there was a significant positive relationship measured with total quality of life and stress of working mothers. The possible explanation could be the determination of working mothers to retain higher sense of quality of life in terms of keeping their domestic life and work life in order they stressed out to reach for perfection by giving added attention beyond their physical and mental aptitudes. Along with that the excessive attention given to the execution of maintaining and implementing hygiene and sanitation of the households may have supplemented the stress during the pandemic (Eh & Jahan 2020). The impact of perfectionism in increasing stress is well established and documented in different researches from the earlier times ( Bendell et al., 1986 and Mitchelson & Burns, 1998). A working mother who has the trait of being perfectionist and with her family and career goals would likely to add on stress and anxiety many times more than any other person around. Hence, it could be deduced that our study participants may have the attribute of perfectionism which culminated in managing all the necessary safety measures to fight against COVID-19 along with modulating their careers and executing added household responsibilities. It would be stimulating to have a causation analysis to see the causal relationships between perfectionism, stress and self-satisfaction of working mothers in the time of additional suffering and distress.

In this study, bivariate correlation did give an indication that there is a negative association between parental stress scores and physical activity scores. This finding demonstrates that there is a prospect of reduction in parental stress due to involvement in any kind of physical activity like walking, skipping, free hand exercises etc. during the pandemic. Although the results did not show any statistically significant impact of physical activity in lessening the stress created by maintaining a better quality of life during the pandemic; even though there are studies who have proven the positive impact of physical activity in reduction of parental stress in challenging times ( Limbers et al., 2020 and Mailey et al., 2014). In an article by Limbers et al (2020), it has been shown that adverse effect of parenting stress on perceived social support, personal relationships, and sexual activity can be diminished with the help of moderate physical activity of the working mothers during quarantine.

The possible reasoning for not getting any significant impact of physical activity in this study could be the restraint of scoring only last 7 days physical activity sessions in the International physical activity questionnaire and also cultural factors where regular exercises are not quite common in usual families in Bangladesh. In future, it could be a great initiative from public health perspective in Bangladesh to engage in interventional studies to understand the effects of different types of specific physical activities in lessening the burden of maintaining higher level of quality of life by reducing stress during any confinement period. Researchers can take an effort to assess the impact of engagement of partners or peers of working mothers in creating an atmosphere of incorporating different levels of physical activities while maintaining perceived higher level of quality of life in the future.

## **CONCLUSIONS & WAY FORWARD**

In summary, the study found that perceived sense of greater quality of life was associated with greater parenting stress. Moreover, perceived sense of better quality of life had significantly increased the stress level of working mothers of Dhaka city in Bangladesh. The study also indicated that any kind of physical activity may reduce the negative impact of parenting stress to maintain a healthy social relationship and a heightened sense of well-being in working mothers of Dhaka city during the time of COVID-19. In the future, longitudinal research and Randomized Control Trials (RCTs) might be needed to have a deeper understanding of the directionality and causativeness of stressors' associations. Also, it would be stimulating to have a causation analysis to see the causal relationships between perfectionism, stress and self-satisfaction of working mothers in the time of additional suffering and distress. In future, it could be a great initiative from public health perspective in Bangladesh to engage in interventional studies to understand the effects of different types of specific physical activities in lessening the burden of maintaining higher level of quality of life by reducing stress during any confinement period. Researchers can take an effort to assess the impact of engagement of partners or peers of working mothers in creating an atmosphere of incorporating different levels of physical activities while maintaining perceived higher level of quality of life in the future. Finally, the better quality of life through better coping strategy may help the working mothers to remain active in the labor market and continue to contribute to the sustainable economic development of the country.

## **LIMITATIONS**

Every study does have a few intrinsic limitations. Similarly, this research also had certain limitations. Only a handful of participants from Dhaka city in Bangladesh were included in this study, instead of choosing more places due to COVID-19 related lockdown and logistical problems. It also has to be pointed out that, self-reported questionnaires do retain few innate limitations as it is purely based upon a participant's motive of contribution. Hence, this outcome of perceived feeling of better quality of life even with overstrained of responsibilities cannot be generalized for the entire population of working mothers around the country as there are always external factors like unsupportive work and family environment, uncertainties and inadvertent consequences associated with COVID-19 could possibly change the directionality and causality of these associations.



## CONFLICT OF INTEREST

The authors have no conflicts of interest to declare for this study.

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None.

## AUTHOR CONTRIBUTIONS

Conceptualization: CNF, FS.

Data curation: CNF, FS.

Formal analysis: CNF, FS. Methodology: CNF, FS.

Writing - original draft: CNF, FS.

Writing - review & editing: CNF, FS.

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