

## Exploring the Gendered Dimensions of Health and Well-being in Climate Change Adaptation

Basma Batool<sup>1</sup>, Mehwish Zulfqar<sup>2</sup>

<sup>1</sup> COMSATS University Islamabad, Vehari Campus, Vehari, Pakistan.

Email: basmabatool680@gmail.com

<sup>2</sup> COMSATS University Islamabad, Vehari Campus, Vehari, Pakistan.

Email: mehwishzulfqar0@gmail.com

### Abstract

*Climate change is a formidable challenge affecting global health outcomes and productivity. This paper examines the extent to which climate change adaptation factors combined with gender and maternal health intersect and their impacts on pregnant women. It explores the perception of young pregnant women about their health by aligning gender, climate change vulnerability, and experiences. The literature review has been expanded to examine theoretical framework and empirical findings regarding climate change and gender. The study uses qualitative data obtained through face-to-face interviews with ten pregnant ladies of different socioeconomic statuses residing in environmentally vulnerable areas. This selection remains consistent with qualitative research guidelines where participants are chosen to provide depth rather than breadth of information. Considering climate change as an aggravating factor in gender disparities, the study identifies additional physical, emotional, and psychological loads placed on pregnant women. Some themes are derived include differences in climate change consciousness, physical health consequences, healthcare accessibility issues, emotional strain, and sociocultural dynamics. This research highlights the importance of gender inclusion in climate adaptation measures and addressing maternal health in development policies. The findings indicate how collaborative and just adaptation can be achieved for both the present population and future generations. The small study area is a limitation that indicates the importance of future research on integrating quantitative data and extending the research area to investigate this crucial issue further.*

**Keywords:** Vulnerability, adaptation, well-being, maternal health, sustainability

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### 1. INTRODUCTION

Climate change is one of the most significant contemporary issues and is closely connected with numerous natural disasters that directly impact human health. The effects of climate change are unequal on different segments of populations depending on regional location, class, and gender. Out of all these factors, gender has emerged as vital in differentiating climate change's effects,

especially on health outcomes. One of the many aspects of women's health affected by natural disasters is maternal health since pregnant women being highly vulnerable, suffer from the consequences of disasters more severely. There is still a shortage of literature linking women, climate change adaptation, and maternal health as key factors determining the population's level of flexibility. This study best articulates the analytical variables and proactively demonstrates theoretical foundations and where the study fills the existing gaps.

The knowledge of climate change implications has become quite popular, shifting focus to examining how the changes affect different populations. Pregnant women are especially vulnerable because of physiological changes that make them more sensitive to environmental stressors such as heat, pollution, and contaminated water (Bekkar et al., 2020). Nevertheless, the gender-sensitive aspects of climate adaptation policies and the gendered impacts of climate policies on maternal health have not been adequately explored in the body of literature and public policies. Such a gap indicates the importance of further analysis of how climate change deepens existing health inequalities and how adaptation measures can be adjusted to reflect the situation of pregnant women.

This paper further notes that the integration of a gendered lens into the study of climate change impacts is paramount since gender affects vulnerability as well as adaptive capacities (Beck, 1996). Women, especially pregnant women in many societies, are more affected by the health effects of climate change because of gender disparities, such as poor access to healthcare services, low economic status, and decision-making power (MacGregor, 2010). These inequalities are usually enhanced during times of environmental stress, leaving mothers' health more compromised. Therefore, the sociocultural context greatly influences how pregnant women comprehend and deal with these risks. For example, religious and traditional practices influencing pregnancy and maternal health care seeking, status, and opportunities of women are either protective or risk factors in climate change-caused maternal mortality.

Therefore, this research addresses this gap by examining young pregnant women's attitudes to climate change's effects on their health and their unborn babies' health, with particular emphasis on sociocultural factors. Therefore, using both quantitative and qualitative data, the study seeks to assess the extent to which climate change, a global issue, impacts maternal health in specific sociocultural contexts. Therefore, this exploration is critical to guide policy and interventions that will fit pregnant women's

needs considering compounded climate challenges. Therefore, this study examines young pregnant women's perceptions of climate change impacts on their health and unborn children, with emphasis on sociocultural influences.

The significance of this study lies in its potential to shed light on the overlooked gendered dimensions of climate change adaptation, particularly concerning maternal health. As climate change increasingly impacts global health, the specific vulnerabilities faced by pregnant women remain underexplored in both academic circles and policymaking arenas. By comprehending the intersection of gender dynamics and climate adaptation initiatives, this research contributes to a deeper understanding of how environmental alterations singularly impact the health of mothers; furthermore, the study highlights how expectant mothers encounter health hazards disproportionately due to entrenched social influences. Spanning local, regional, and international scales, it seeks to focus more on culturally specific risks vulnerable groups face.

## **2. LITERATURE REVIEW**

In recent years, climate change and health have become increasingly important areas of study, mainly since the impacts of global warming disproportionately affect vulnerable populations. There are significant implications for maternal health from climate change adaptation, which is not only a global health issue but also a gendered issue. As extreme weather events and rising temperatures increase, pregnant women face increasingly severe health risks. Several studies examined how climate change exacerbates health disparities, restricts access to essential healthcare services, and poses new health risks for mothers and children. This review highlights the intersection between gender, health, and climate change, emphasizing the importance of including gender-sensitive approaches in climate adaptation strategies to protect and improve maternal health outcomes.

Ahmed and Fajardo (2022) focused on the Philippines, which experiences severe climatic conditions such as typhoons and floods. It shows how such climate-related disasters hinder access to health care, which is vital for pregnant women. This caused the exposed healthcare facilities to become inaccessible and delayed the attendance of mothers and newborn babies during and after such events due to infrastructural damage. This puts the lives of the women and their babies at a higher risk of maternal and neonatal mortality. Similarly, Ahmed and Fajardo have contended that climate change mitigation policies for these regions require the development of adaptation

measures for these worsening vulnerabilities. For example, they suggest the development of mobile healthcare units and training community health workers to provide emergency maternal care.

Lopez and Martinez (2021) explored how the issues of gender, health, and climate change impact the rural people of Latin America. According to their findings, women and pregnant women, in particular, are the subject of the disproportionate adverse effects of Climate Change. The authors highlighted several factors contributing to this vulnerability: poor health literacy, inferior standard of living, and gender roles that can confine women and hinder their authority to choose. These factors work against pregnant mothers and make it difficult for them to receive the necessary attention, especially during disaster risks such as drought or floods. In the flux of outlining proposed strategies for climate adaptation, the authors underscore that such strategies have to factor in the gender dimensions of these vulnerabilities. Women are urged to be involved in the decision-making processes to be catered for in climate change adaptation.

Chandra et al. (2020) confined their study to South Asia, which is characterized by high temperatures and, more often, heat waves. In their study, they examined how climate changes affect pregnancy, and the authors concluded that higher temperature, especially from heat, is linked with the increased incidence of preterm birth and low birth weight, among other pregnancy complications. This study considers how maternal health objectives ought to be incorporated into the adaptation and mitigation of climate change.

Garcia and Brown (2019) used survey questionnaires to investigate how community-based adaptation interventions enhance maternal health in East Africa. The studies they did indicate that there are health benefits to mothers and their children when women are brought on board to design and implement climate change adaptation projects. Several examples of effective community mobilization included lobbying for forming women's health committees, addressing climate resilience in agriculture, and ensuring food availability during pregnancy. These interventions also enhance maternal health while promoting women's autonomy and capacity to prevent and manage climate-sensitive ailments. The authors recommend using similar grassroots approaches as part of broader climate change adaptation policies.

In his study of maternal health in India, Singh and Sharma (2018) also focused on the impacts of climate policy being sensitive to gender. These authors' analyses corroborate that states with policies on climate change that integrate gender and health have decreased MMRR during disasters

compared to those with no climate change policies. The authors explained the impact of gender- integrated strategies, such as unique health care for pregnant women during monsoon and drought periods and providing transport to access maternal care. Their primary suggestion is that future climate policies at both national and local levels should prioritize maternal health, particularly in areas most severely impacted by climate change.

Chen et al. (2017) also synthesized broad qualitative evidence on climate change, gender, and maternal health in LMICs. Then again, they discovered in other similar research reviews that it is sporadic direct negative maternal health impacts of climate change, such as maternal mortality, pregnancy complications, and facility-based antenatal and post-natal care, are studied. The authors also pointed out that more research needs to be done on the complex relationship between gender, climate change and health. Alternatively, they suggest that more such studies are required to meet policy demands of climate change adaptations because adaptations do not consider these categories of pregnant women.

The findings were observed in a study by Rao and Fisher (2016) that examined the socioeconomic determinants of maternal health in the climatically transformed Sub-Saharan Region. During the study, it was ascertained that women, particularly pregnant women, Suffer most from economic losses due to climate factors such as low agricultural production and food scarcity. Women suffering from these stressors are more likely to suffer from malnutrition, anemia, and other health complications, which can have severe consequences for both mothers and their unborn children. Climate adaptation plans must include measures to enhance economic resilience, such as supporting climate-resilient agriculture and social safety nets. As a result of climate change, the socioeconomic dimensions of maternal health in this region must be addressed.

Despite the available literature on climate change, gender, and maternal health, some research gaps remain. Prior research focuses on zones, such as the Philippines, Latin America, and South Asia, and does not consider other high-risk areas in Low Middle-Income Countries. However, there are no studies that connect climate change with maternal mortality, compromised pregnancy, and the availability of proper antenatal and postnatal care. The various social, economic, and cultural factors that shape how pregnant women understand and engage with climate change have not been adequately explored. These gaps can only be addressed by using research based on various regions, employing both quantitative and qualitative

methods, and exploring the category of pregnant women regarding climate change.

### **3. METHODOLOGY**

This study used a qualitative research approach to understand the effects of climate change on pregnancy regarding maternal health. Semi-structured interviews served as the primary approach for data collection because it was essential to explore participants' impressions, firsthand experiences, and ways of managing climate-leading environmental changes. This approach was taken because individuals' situations and circumstances are often multifaceted and complicated to measure. Based on the purposive sampling method, ten pregnant women were interviewed and selected based on different socioeconomic statuses, ages, and regions from the areas affected most by climate change. The participants were women who received medical care at community health facilities, maternity clinics, or organizations involved in maternal health and environmental change, pregnant, and living in environment-shifted areas. Respondents covered the age group of 20-35 years, had different levels of education, including primary, secondary, university; and they were rural and urban dwellers.

The data was collected through one-on-one interviews conducted face-to-face or over the Internet regarding the availability and convenience of participants involved. The interview guide was structured around several key themes: Knowledge about climate change, physical health, health care, psychological and social effects, management strategies, influence on the environment, food security, social networks, attitudes towards policies, cultural and religious practices, and possible future impact on children. Every interview ranged from 45 to 60 minutes, was recorded verbally with participants' permission, and then transcribed and analyzed. The primary method used in the study was thematic analysis, which allows for analysis of patterns, similarities, and differences in thoughts and ideas regarding the experiences of the participants.

### **4. FINDINGS AND DISCUSSIONS**

The findings indicate that climate change influences maternal health in various ways and to different extents, depending on the participants' knowledge and attitudes to climate change. All ten participants described similar experiences, and no further themes emerged during the data analysis process; therefore, thematic saturation was reached after the ten interviews. Accordingly, the thematic analysis revealed a wide range of concerns, from

increased concern about severe weather events to difficulties in health care due to environmental changes. Each theme mirrors the complex interplay between climate change and physical health, mental health, and socioeconomic determinants of pregnancy in impacted areas.

### **Theme 1: Awareness of Climate Change and Its Effects**

Concerning climate change, we observed that the participants had low to moderate awareness and accepted the reality of climate change and the prospect of its effects. But the extent of this knowledge was much higher. Few participants were sensitive about how climate change, especially heat waves, affected their pregnancies and health.

For instance, one participant stated, "Heat makes me feel so tired, and I had to sit inside for most of the heat wave period; I wonder how this affects the baby." This implies that environmental stressors can potentiate pregnancy's physical and emotional burdens. On the other hand, other participants had rather apparent and routine acutely modified views and knowledge from the media exposure. They were not as certain about the immediate effect of climate change on one's health.

It points to a knowledge deficit and also clarifies the need to implement appropriate educational interventions aimed at increasing pregnant women's awareness of how climate-related factors can impact them and their unborn babies. Education is also found to be highly influential, and the respondents with higher levels of education are perceived to be more informed in their attitudes towards climate change.

### **Theme 2: Physical Health Impact**

All the participants described the physical impact of changes in their environment during pregnancy as unfavorable. Prolonged exposure to heat and polluted air were two more common explanations for symptoms that interfered with activities and health.

For example, one participant said, "Sometimes I could not stand the heat, and I would always feel so exhausted that I felt like fainting when walking to the store." Another participant said, "I have breathing issues, and when the air is growing polluted, I have constant concern about the health of my child." These cases confirm the cross-sectional nature of environmental pollution with physical health, especially in marginalized groups, including pregnant women.

The study also underscores the need for additional studies to identify

the specific health effects attributed to environmental factors and implement effective measures to reduce their impact, particularly in urban settings where pollution levels are comparatively higher.

### **Theme 3: Access to Healthcare**

This study showed that pregnant women face various challenges in the use of health services, especially those of low-income status. The participants noted that climate change would worsen these difficulties, mainly during floods.

One participant said, "I am so scared that again, once the flood comes, I will not be able to arrive at the clinic anyway...what if something goes wrong?" Besides, one participant said, "Most of the time, I move in this hot weather to the hospital because this is the only source of prenatal care." These are problematic barriers because prenatal care is so crucial.

The study indicates that while socioeconomic status and environmental conditions are critical in producing a vulnerable situation in terms of health care, they are also essential in providing an opportunity or enabling environment for health access. Developing responsive solutions to make healthcare services available in geographical and climatic constraints affecting vulnerable population groups due to climate change will be crucial.

### **Theme 4: Emotional and Psychological Impact**

Respondents stated they often experience emotional and psychological strain associated with climate change, especially mentioning pregnancy and the future of their offspring as areas of concern. Some reported increased levels of stress and anxiety primarily because of the trends in global warming.

As for the questioning, one of the participants said, "I always get anxious thinking of the kind of world I will be raising my child in; I get terrified when I think about the future." Another example is, "I feel stressed knowing that weather conditions could be unfavorable to my child." Such responses point to the psychological toll that climate change has on individuals, especially pregnant women. The implications stress the need for more mental health services and programs that may cover the psychological aspects of climate change and how people can manage it.

### **Theme 5: Coping Mechanisms**

Participants named the various coping strategies they used to deal with the effects of climate change during pregnancy. One of the social methods



pursued was to avoid heat and concentrations of heat by avoiding the outdoors during the hottest part of the day. They also pointed out the significance of family help to cope with physical discomforts and having a cooler climate in the dwelling space.

One of the participants stated that her family assists her a lot, especially when the weather is hot; they ensure that the house is well-air-conditioned and that she is not uncomfortable. The last strategy involves changing diet; for instance, taking a lot of water and light foods. Such behaviors are characteristic of actively promoting health protection in response to unfavorable environmental conditions. The study implies that coping strategies and support systems are particularly useful in managing physical and psychological changes to the climate during pregnancy.

### **Theme 6: Environmental Concerns and Food Security**

Specific risks identified by participants concerning climate change were related to the availability and quality of food because of climate change impacts, especially on locally produced foods. Volatile weather conditions have hindered farming activities, causing concern about food availability during pregnancy. For instance, one participant said, "There are no fresh crops here, and vegetables are scarce; I'm concerned about feeding my baby the right nutrients." Another said, "Food prices have inflated a lot; it's challenging to sustain a healthy diet." These are especially important for pregnant women who need a regular and healthy diet for their benefit and that of their unborn child. Consequently, the relevant authorities must adopt strategies that enhance food stability and prioritize environmental preservation, particularly in areas affected by climate change.

### **Theme 7: Social Support Networks**

The study showed that social support is a crucial factor that can help pregnant women deal with the effects of climate change. We found a significant correlation between stress due to environmental changes and the participants' resilience: participants with strong family and community support provided greater resilience and dealt better with stress.

Specifically, one of the participants stated, 'My family and neighbors are always there for me. They make everything easier to handle.' On the other hand, those who reported low social support faced higher levels of stress and struggled to cope with climate shocks. These results underscore the significance of developing and preserving social support, which is crucial to help and comfort in terms of environmental pressure.

### **Theme 8: Perception of Climate-Related Policies**

The participants also showed hesitance and a lack of confidence in the existing policies on climate change to their satisfaction so far as the pregnant moms are concerned. Some considered governmental measures poorly applicable or too general and did not address their needs and circumstances. A participant said, "I have not consumed any policy that addresses such climate problems to pregnant women." Another participant commented, "It seems like we are not valued as far as climate change is concerned." Such feelings show a policy-performance gap for the climate change problem in the study area. These realities point to the urgent need to develop better policies that encompass pregnant women in the context of climate change.

### **Theme 9: Cultural and Religious Beliefs**

Customs and religions played a significant role in how participants perceived and managed the effects of climate change. Some could interpret these changes within the spiritual or cultural context of reality, which can provide solace and purpose.

One participant supported this finding, "I do think this is all done for a purpose; maybe it is written in heaven for me to take care of the environment, and this gives me hope." Other participants also noted the impact of cultural practices in supporting environmental conservation and people's sustainable behaviors in their day-to-day lives. Hence, it is appropriate to integrate culture and spirituality into climate change discussions and practices to strengthen adaptation strategies that are compatible with the views of affected populations.

### **Theme 10: Future Outlook and Concerns for Children**

One common thread of discussion throughout the study was the session participants' worry about what kind of world their children will grow up in with the already noticeable adverse effects of climate change on the environment. Some voiced profound concern over the prospects of environmental futurizing and said they did not want their children to grow up in a damaged environment. One participant said, "I only wish for my child to be happy, healthy, and safe in the future, but I am so afraid of the future." Another said, "It is painful not to feel guilty thinking and imagining the world we are leaving for our kids."

These concerns raise the psychological effects climate change has had on parents and underpin the importance of welfare-based policies and interventions for future generations. For this reason, the findings stress the

need for companies to consider environmental management activity in striving to create an environmentally sustainable future for the next generation.

#### **4.1. Discussions**

This research addresses important research questions regarding climate change effects on pregnant women, and direct and indirect consequences. There were differences in the level of concern where women with higher education reported having a better understanding in relation to climate risks. Maternal physical health issues like heat stress, effects of air pollution and poor nutrition became notable sources of stress during pregnancy. Additional challenges consisted of emotional stress such as; the anxiety resulting from the uncertainty of the future and psychological stress, which point to the deep and severe mental impacts of climate change. Furthermore, cultural practices and more importantly, support from people of faith and family helped a lot in terms of coping mechanisms. It enhances the understanding of the complex nature of how climate change impacts maternal health in different dimensions to support development of effective intervention measures.

### **5. CONCLUSION**

Overall, the findings of this research show the disturbing effects of climate change on young pregnant women, especially in the selected sociocultural cultures. The study also shows how climate change makes existing gender disparities worse, as these women experience more physical and emotional stress. Educational background plays a significant role in climate change, but they are aware of its impacts on human health, such as heat stress. It also highlights the significant challenges of accessing medical facilities during disruptive weather, which poses a considerable risk to the lives of expectant mothers. Mental and emotional strain is quite common and includes sadness and deep concerns about future generations and unborn children. Even though such enduring factors as seeking familial support are involved in coping, these are ordinarily inadequate.

It has been found that the social and cultural support system plays a vital role, indicating that if the adaptation strategies must be effective, they have to be sensitive to the cultural contexts of the individuals. Furthermore, the study notes a disconnection between climate policies and the experiences of vulnerable women to underscore the importance of policy sensitivity. This research is crucial as it focuses on addressing the gender lens in implementing climate adaptation measures to preserve the well-being of mothers to do and enhance gender equity.

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