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Impact of the COVID-19 pandemic on the mental and physical health of Indian working women: A cross-sectional study of District Rajkot, Gujarat

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Abstract

Introduction: The COVID-19 pandemic has profoundly affected societies and economies worldwide, with working women facing unique challenges. This study aimed to analyze changes in the employment status of working women before and after the COVID-19 pandemic, identify the challenges and barriers they faced, assess the impact of remote work on career progression, and examine the effects on their mental health and well-being. The study also aimed to address these challenges by proposing policies and support systems to promote gender equality, work-life balance, mental health support, and career advancement opportunities for working women in Rajkot District, Gujarat.

Methods: This cross-sectional study collected primary data through administered surveys and interviews with working women from various industries in Rajkot District. The sample size was determined using Cochran's Formula, resulting in 364 valid responses after excluding incomplete data. Quantitative data were analyzed using descriptive statistics and chi-square tests, while qualitative data were examined using thematic analysis.

Results: Pre-COVID-19 data indicated stable employment rates across the talukas, with significant portions facing financial strain and mental health issues. Post-COVID-19 data revealed a substantial increase in unemployment, challenges, and the need for psychological counseling. The chi-square analysis highlighted significant changes in employment status, career progression, mental stability, and the demand for mental health support. Single mothers and low-income groups were particularly affected, experiencing heightened challenges related to balancing work and caregiving responsibilities, accessing healthcare, and maintaining financial stability.

Discussion: The findings underscore the urgent need for targeted policy interventions to support vulnerable groups, including single mothers and low-income women. Recommendations include childcare support initiatives, flexible work policies, affordable healthcare access, and targeted

financial assistance programs. These measures are essential to mitigate the long-term socioeconomic effects of the pandemic and promote a more inclusive and equitable recovery. Future research should focus on longitudinal studies to track the recovery and adaptability of working women, ensuring ongoing support and resilience in the workforce.

Keywords: Working Women, COVID-19, Mental Health, Physical Health, Gujarat

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INTRODUCTION

The COVID-19 pandemic has unleashed profound and far-reaching impacts on societies and economies across the globe. Among the myriad groups affected, working women have encountered distinctive challenges amid this crisis. The widespread dissemination of the COVID-19 virus has catalyzed extensive repercussions that have rippled through economies and cultures worldwide. As the pandemic unfolded, working women were confronted with a host of obstacles that exacerbated existing disparities and inequalities. The economic fallout stemming from widespread lockdowns and disruptions to business operations led to mass layoffs, furloughs, and reduced work hours. Many sectors heavily impacted by the pandemic, such as retail, hospitality, and tourism, predominantly employed women. Consequently, working women faced heightened job insecurity, financial strain, and difficulty in maintaining employment. Numerous studies have documented this disproportionate impact, with women experiencing higher rates of job losses, furloughs, and reduced work hours compared to men. Globally, between 2019 and 2020, women's employment declined by 4.2%, representing a drop of 54 million jobs, while men's employment declined by 3%, or 60 million jobs [1-5].

Work-Life balance and caregiving responsibilities

The pandemic induced a seismic shift in the dynamics of work and caregiving responsibilities. With the closure of schools and daycare facilities, working women were suddenly thrust into the role of primary caregivers, juggling professional obligations with childcare duties. Remote work became the new norm, blurring the boundaries between work and personal life. While remote work offered flexibility, it also led to longer working hours, increased expectations of availability, and difficulties in maintaining work-life balance. Working mothers faced heightened stress and burnout as they managed homeschooling, childcare, and household chores alongside their work responsibilities [6-9].

Mental health and well-being

The pandemic has taken a significant toll on the mental health and well-being of working women. The combination of increased work demands, isolation due to remote work, concerns about job security, and general anxiety surrounding the pandemic contributed to higher levels of stress, anxiety, and depression. The lack of social support networks and limited access to mental health

resources exacerbated these challenges. Women, particularly those from marginalized communities, faced additional stressors and often lacked adequate access to mental health support [10-13].

Gender pay gap and career progression

Existing gender pay disparities were further highlighted during the pandemic. Women, especially those in low-wage jobs and vulnerable industries, experienced reduced hours, pay cuts, and limited opportunities for career progression. Remote work arrangements presented challenges for women regarding visibility and networking, potentially impacting their long-term career progression. The pandemic's effects on women's career trajectories may perpetuate gender inequalities in the workplace [14-17].

Intersectional experiences

The impact of the pandemic on working women is not uniform, and intersectional factors play a crucial role. Women from marginalized and minority communities, including women of different ethnicities, immigrant women, and low-income workers, faced compounded challenges. They were more likely to be in essential frontline roles, facing higher risks of exposure while also experiencing greater vulnerabilities in terms of job security, healthcare access, and economic shocks. The unequal distribution of domestic work further amplified gender inequalities, hindering women's career advancement and perpetuating traditional gender roles [18-21].

Remote work and digital divide

The shift to remote work highlighted the digital divide, with women, especially those from disadvantaged backgrounds, facing challenges related to access to technology, reliable internet connectivity, and digital skills. This divide limited their remote work and career advancement opportunities, exacerbating existing inequalities. Women who took breaks from the workforce due to caregiving responsibilities or job loss faced challenges in returning to work and regaining career momentum [22-24].

Objectives

This study aims to:

- Analyze changes in the employment status of working women during the COVID-19 pandemic.
- Identify challenges and barriers working women face in maintaining work-life balance during and after the pandemic.
- Assess the impact of work arrangements on the career progression of working women.
- Examine the effects of COVID-19 on the mental health and well-being of working women.
- Investigate gender-specific requirements in psychological counseling.

By addressing these challenges and implementing policies and support systems that promote gender equality, work-life balance, mental health support, and career advancement opportunities for working women in the Rajkot District of Gujarat, societies can build more inclusive and resilient post-pandemic economies.

METHODS

Study design

This study employs a cross-sectional design to examine the impact of the COVID-19 pandemic on working women in the Rajkot District of Gujarat. By collecting data at a single point in time, the

study aims to provide a snapshot of changes in employment status, challenges faced, and mental health conditions before and after the pandemic.

Sample selection and demographics

The sample size for this study was determined using Cochran's Formula, which calculated a required total of 384 participants at a 95% confidence level with a 5% margin of error. After excluding 20 incomplete or missing data sets, the final sample included 364 valid responses. While this sample size is statistically adequate, it may not fully represent the diversity of the working women in the Rajkot District. Given the socio-economic and cultural heterogeneity of the population, the representativeness of the sample is a potential limitation.

To mitigate this, a stratified random sampling method was employed to ensure that participants from various socio-economic backgrounds, industries, and demographic groups were included. This approach aimed to capture a broad spectrum of experiences, particularly across formal and informal employment sectors, and among women from different ethnic and socio-economic backgrounds. Detailed demographic data, including age, income level, education, marital status, and number of dependents, were collected to contextualize the findings and assess the representativeness of the sample.

Instruments and procedures

Data were collected using a structured survey questionnaire and semi-structured interviews. The survey comprised both closed-ended and open-ended questions designed to capture quantitative data on employment status, work-life balance, mental health, career progression, and the need for psychological counseling, as well as qualitative insights into the challenges faced by working women.

The survey instrument underwent a rigorous validation process to ensure its clarity, relevance, and content validity. Initially, a pilot test was conducted with a small subset of participants (n=30) representative of the target population. Feedback from the pilot was used to refine the questionnaire, addressing any issues related to question interpretation and response options. In addition to the pilot test, expert reviews were conducted by professionals in economics, public health, and gender studies to further enhance the validity of the survey tool. Reliability was assessed through internal consistency measures, such as Cronbach's alpha, which yielded satisfactory results ($\alpha > 0.7$), indicating that the instrument was reliable for capturing the constructs of interest.

Data collection took place from January to March 2023. Researchers involved in the data collection process underwent training to ensure consistency and reliability in the administration of surveys. Both in-person and online surveys were used to accommodate participants' preferences and to reach a wider audience. In-person surveys adhered to strict COVID-19 safety protocols, including social distancing and the use of personal protective equipment. Online surveys were distributed via email and social media platforms, which allowed for broader participation, particularly among those unable to attend in person due to ongoing pandemic-related restrictions.

Additionally, semi-structured interviews were conducted with a subset of participants (n=50) to gain deeper insights into their experiences. These interviews were carried out either face-to-face or through video conferencing, depending on the participants' preference and accessibility, and were recorded (with consent) for detailed thematic analysis.

Ethical considerations

Ethical approval for the study was obtained from the relevant institutional review boards. Participants were fully informed about the study's purpose, procedures, and their rights, including confidentiality and voluntary participation. Informed consent was obtained from all participants before data collection. Data were anonymized to protect participants' privacy, and all information was stored securely to prevent unauthorized access.

Data analysis

Quantitative data were analyzed using descriptive statistics, including means, medians, standard deviations, and frequencies. Chi-square tests were conducted to compare pre-and post-COVID-19 scenarios, examining changes in employment status, challenges faced, career progression, mental stability, and the need for psychological counseling. The analysis used SPSS (Statistical Package for the Social Sciences) version 26.

Qualitative data from interviews were analyzed using thematic analysis to identify common themes and patterns. This involved coding the data, categorizing codes into themes, and interpreting the findings to understand the nuanced experiences of working women.

RESULTS

Pre-COVID-19 and post-COVID-19 employment data

The data collected provides a detailed comparison of the employment status and challenges faced by working women in the Rajkot District, Gujarat, both before and after the COVID-19 pandemic. The following tables summarize the key metrics:

Table 1. Pre-COVID-19 employment data of six Talukas in Rajkot District.

| Taluka | Employed | Unemployed | Facing Challenges | Not Facing Challenges | Career Progress | No Career Progress | Mentally Stable | Mentally Unstable | Counseling Required | Counseling Not Required |
|---------------|------------|------------|-------------------|-----------------------|-----------------|--------------------|-----------------|-------------------|---------------------|-------------------------|
| Paddhari | 59 | 1 | 10 | 50 | 34 | 26 | 44 | 16 | 14 | 46 |
| Rajkot | 62 | 1 | 5 | 58 | 55 | 8 | 50 | 13 | 46 | 17 |
| Gondal | 59 | 1 | 21 | 39 | 30 | 30 | 52 | 8 | 13 | 47 |
| Lodhika | 58 | 1 | 24 | 35 | 37 | 22 | 45 | 14 | 21 | 38 |
| Kotda Sangani | 60 | 1 | 4 | 57 | 40 | 21 | 42 | 19 | 11 | 50 |
| Upleta | 60 | 1 | 14 | 47 | 43 | 18 | 43 | 18 | 20 | 41 |
| Total | 358 | 6 | 78 | 286 | 239 | 125 | 276 | 88 | 125 | 239 |

The pre-COVID-19 data show relatively stable employment rates across the talukas, with most women reporting career progress. However, a significant portion faced various challenges, including financial strain and mental health issues.

Table 2. Post-COVID-19 employment data of six Talukas in Rajkot District.

| Taluka | Employed | Unemployed | Facing Challenges | Not Facing Challenges | Career Progress | No Career Progress | Mentally Stable | Mentally Unstable | Counseling Required | Counseling Not Required |
|---------------|------------|------------|-------------------|-----------------------|-----------------|--------------------|-----------------|-------------------|---------------------|-------------------------|
| Paddhari | 33 | 27 | 23 | 37 | 18 | 42 | 17 | 43 | 49 | 11 |
| Rajkot | 56 | 7 | 36 | 27 | 8 | 55 | 11 | 52 | 53 | 10 |
| Gondal | 39 | 21 | 25 | 35 | 27 | 33 | 28 | 32 | 32 | 28 |
| Lodhika | 45 | 14 | 24 | 35 | 24 | 35 | 21 | 38 | 38 | 21 |
| Kotda Sangani | 33 | 28 | 26 | 35 | 25 | 36 | 26 | 35 | 39 | 22 |
| Upleta | 40 | 21 | 35 | 26 | 28 | 33 | 30 | 31 | 32 | 29 |
| Total | 246 | 118 | 169 | 195 | 130 | 234 | 133 | 231 | 243 | 121 |

The post-COVID-19 data reveal a significant increase in unemployment and challenges faced by working women. There was also a notable rise in the need for psychological counseling and a decrease in mental stability.

Descriptive analysis of employment and challenges

The descriptive analysis provides a detailed view of the employment dynamics and challenges faced by working women before and after the COVID-19 pandemic.

Table 3. Descriptive analysis of selected variables pre-COVID-19.

| Variable | Mean | Standard Error | Median | Standard Deviation | Sample Variance | Kurtosis | Skewness |
|-----------------------------------|------|----------------|--------|--------------------|-----------------|----------|----------|
| Employment | 59.7 | 0.6 | 59.5 | 1.4 | 1.9 | 1.3 | 0.9 |
| Facing Challenges | 13.0 | 3.4 | 12.0 | 8.2 | 68.0 | -1.8 | 0.3 |
| Not Facing Challenges | 47.7 | 3.8 | 48.5 | 9.3 | 87.1 | -1.6 | -0.3 |
| Career Progress | 39.8 | 3.6 | 38.5 | 8.7 | 75.8 | 1.5 | 1.1 |
| No Career Progress | 20.8 | 3.1 | 21.5 | 7.5 | 57.0 | 1.3 | -0.9 |
| Mentally Stable | 46.0 | 1.7 | 44.5 | 4.0 | 16.4 | -1.3 | 0.8 |
| Mentally Unstable | 14.7 | 1.6 | 15.0 | 4.0 | 15.9 | 0.6 | -0.9 |
| Psychological Counseling Required | 20.8 | 5.3 | 17.0 | 13.0 | 167.8 | 4.1 | 2.0 |
| Counseling Not Required | 39.8 | 4.9 | 43.5 | 12.0 | 143.8 | 3.5 | -1.8 |

Before the pandemic, the average number of employed women was around 60, with significant variability in the challenges faced, career progress, and mental health stability.

Table 4. Descriptive analysis of selected variables post-COVID-19.

| Variable | Mean | Standard Error | Median | Standard Deviation | Sample Variance | Kurtosis | Skewness |
|-----------------------------------|------|----------------|--------|--------------------|-----------------|----------|----------|
| Employed | 41.0 | 3.5 | 39.5 | 8.6 | 74.8 | 1.1 | 1.1 |
| Unemployed | 19.7 | 3.3 | 21.0 | 8.0 | 63.9 | -0.3 | -0.7 |
| Facing Challenges | 28.2 | 2.4 | 25.5 | 5.8 | 33.4 | -1.8 | 0.9 |
| Not Facing Challenges | 32.5 | 1.9 | 35.0 | 4.7 | 22.3 | -1.7 | -0.9 |
| Career Progress | 21.7 | 3.1 | 24.5 | 7.6 | 57.1 | 1.8 | -1.5 |
| No Career Progress | 39.0 | 3.5 | 35.5 | 8.5 | 72.4 | 2.9 | 1.8 |
| Mentally Stable | 22.2 | 3.0 | 23.5 | 7.3 | 52.6 | -0.8 | -0.6 |
| Mentally Unstable | 38.5 | 3.2 | 36.5 | 7.9 | 62.7 | 0.6 | 1.1 |
| Psychological Counseling Required | 40.5 | 3.6 | 38.5 | 8.7 | 76.3 | -1.4 | 0.6 |
| Counseling Not Required | 20.2 | 3.3 | 21.5 | 8.1 | 66.2 | -1.8 | -0.4 |

Post-pandemic, there is a marked reduction in employment and a corresponding increase in unemployment. Additionally, there are significant increases in the number of women facing challenges, requiring psychological counseling, and experiencing mental instability.

Comparative Analysis of pre- and post-COVID-19 data

The comparative analysis uses chi-square tests to assess significant changes in key variables before and after the COVID-19 pandemic.

Table 5. Chi-square analysis of selected variables pre- and post-COVID-19.

| Observed | Pre-COVID | Post-COVID | Chi-Square Value | P Value | Null Hypothesis | Result |
|-----------------------|-----------|------------|------------------|---------|-----------------|--------|
| Employed | 358 | 246 | 121.93 | 0.00** | H01 | Reject |
| Unemployed | 6 | 118 | | | | |
| No Challenges | 286 | 169 | 80.23 | 0.00** | H02 | Reject |
| Facing Challenges | 78 | 195 | | | | |
| Career Progress | 239 | 130 | 65.29 | 0.00** | H03 | Reject |
| No Career Progress | 125 | 234 | | | | |
| Mentally Stable | 276 | 133 | 114.10 | 0.00** | H04 | Reject |
| Mentally Unstable | 88 | 231 | | | | |
| Counseling Needed | 125 | 243 | 76.51 | 0.00** | H05 | Reject |
| Counseling Not Needed | 239 | 121 | | | | |

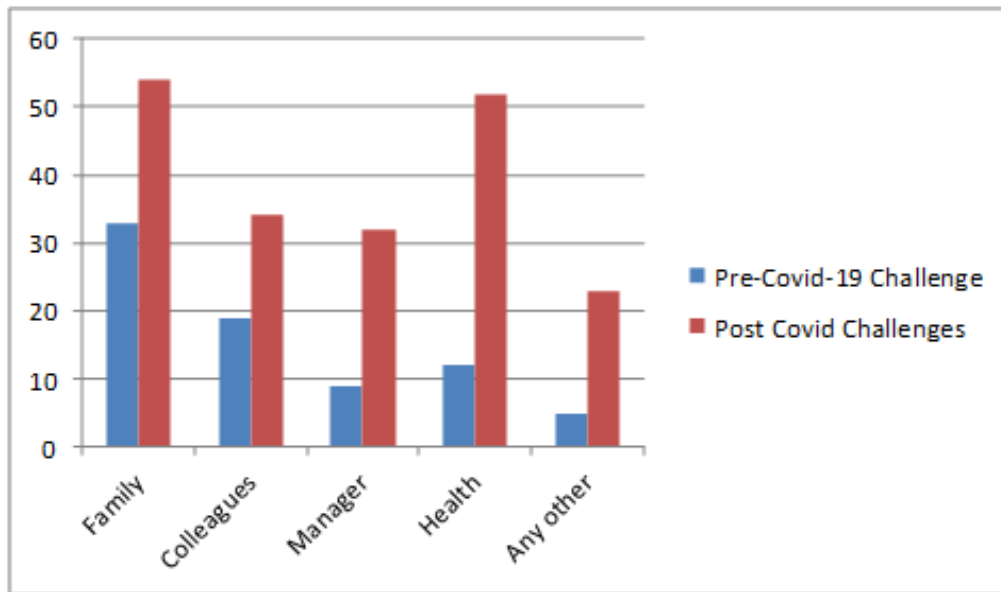
Note: PC = Psychological Counseling, P value < 0.05

The chi-square analysis reveals statistically significant changes in employment status, challenges faced, career progression, mental stability, and the need for psychological counseling before and after the COVID-19 pandemic.

Challenges Faced by Working Women Pre and Post COVID-19

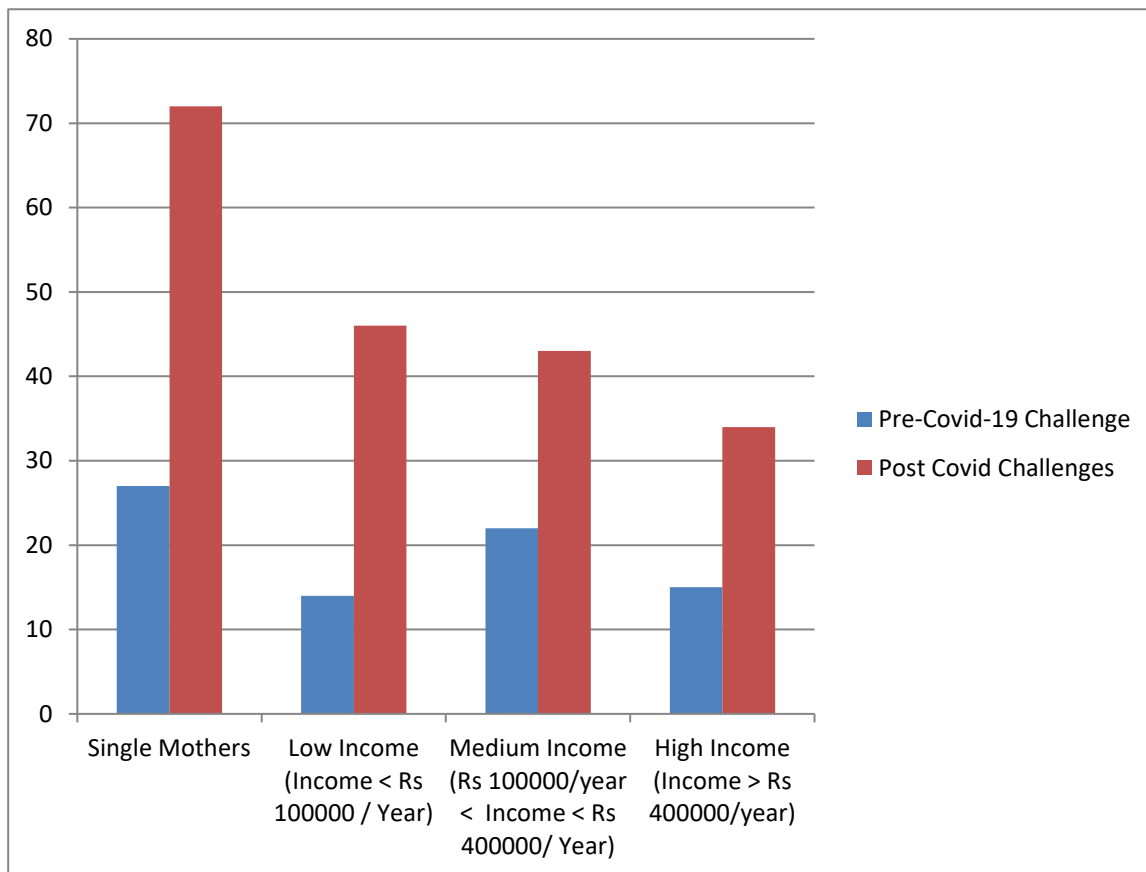
The following figures illustrate the significant increase in challenges faced by working women in various aspects of life after the COVID-19 pandemic compared to pre-pandemic times.

Figure 1. Pre- and post-COVID-19 challenges for working women.



The data show a notable surge in challenges related to family dynamics, work-related issues, and health-related difficulties, reflecting widespread concerns about physical and mental well-being during the health crisis.

Figure 2. Pre and post-COVID-19 challenges for working women in different income groups.



The data present a comprehensive picture of the differential impacts of the COVID-19 pandemic on various income groups and single mothers. There is a notable escalation in challenges post-COVID-19, particularly for single mothers and low-income groups, indicating heightened vulnerabilities.

DISCUSSION

The study aimed to analyze the changes in the employment status of working women before and after the COVID-19 pandemic, identify the challenges and barriers faced by working women during and after the pandemic, assess the impact of remote work arrangements on the career progression of working women, examine the effects of COVID-19 on the mental health and well-being of working women, and investigate the gender-specific requirements in psychological counseling.

Pre-COVID-19 statistics provided valuable insights into the employment landscape, highlighting positive trends and areas requiring attention, particularly mental health support and career development. Post-COVID-19 data suggest that while employment rates remained steady, challenges and the need for psychological support varied across different samples.

The Chi-Square analysis highlighted profound transformations in employment dynamics, career progression, and mental well-being following the onset of the COVID-19 pandemic [26]. The significant chi-square values and p-values emphasize the statistical significance of these changes, necessitating proactive measures to address emerging challenges and support the workforce during and after the pandemic's impact. Understanding these shifts is crucial for policymakers, employers,

and mental health professionals to devise effective strategies for navigating the evolving employment landscape and promoting employee well-being in the post-COVID era.

Challenges for single mothers and low-income groups

The analysis of challenges faced by single mothers and low-income groups, both before and after the COVID-19 pandemic, reveals stark disparities in socioeconomic impacts exacerbated by the global health crisis [27]. Single mothers, already vulnerable due to their unique caregiving responsibilities and often limited support networks, faced heightened challenges post-pandemic, including difficulties in balancing work and childcare, accessing affordable healthcare, and maintaining financial stability. Similarly, low-income groups experienced disproportionate impacts, grappling with issues like unemployment, housing insecurity, and limited healthcare access, which were exacerbated by the pandemic-induced economic downturn.

Limitations and strengths of the study

This study has several limitations that need to be acknowledged. First, the cross-sectional design only provides a snapshot of the situation at one point, limiting the ability to infer causality. Second, although calculated using Cochran's formula, the sample size may only partially capture the diversity of experiences among all working women in the Rajkot District. Third, the reliance on self-reported data may introduce bias, as participants may overestimate their experiences and challenges. Additionally, the study focused on a specific geographic region, which may limit the generalizability of the findings to other contexts.

Despite these limitations, the study has several strengths. It provides a comprehensive analysis of the multifaceted challenges faced by working women during the COVID-19 pandemic, combining both quantitative and qualitative data to offer a nuanced understanding of their experiences. The use of validated survey instruments and a robust sampling methodology enhances the reliability and validity of the findings. Moreover, the study's focus on vulnerable groups, such as single mothers and low-income women, adds valuable insights into the specific needs and challenges of these populations.

Implications for policymakers and researchers

Policy interventions such as childcare support initiatives, flexible work policies, access to affordable healthcare, and targeted financial assistance programs are crucial for single mothers [28]. Subsidized childcare programs or vouchers can alleviate the financial burden of childcare, enabling single mothers to participate in the workforce or pursue educational opportunities. Flexible work arrangements, including telecommuting options and flexible scheduling, can accommodate their caregiving responsibilities without jeopardizing their employment. Enhanced access to affordable healthcare services, particularly maternal and mental health care, can ensure their well-being and reduce financial strain. Moreover, targeted financial assistance programs, such as cash transfers and housing subsidies, can mitigate economic hardship and support financial stability.

Similarly, low-income groups require policy interventions tailored to their specific needs. Livelihood support programs, including job training and placement initiatives, can equip them with the skills needed for sustainable employment and career advancement, thus reducing unemployment and poverty rates. Affordable housing initiatives, such as investments in housing projects and rental assistance programs, are essential to address affordability issues and ensure access to safe and stable housing. Expanding access to affordable healthcare through Medicaid eligibility expansion and

community health centers can improve health outcomes and address healthcare disparities among low-income individuals. Income support measures, including unemployment benefits extensions and food assistance programs, can alleviate financial distress and prevent further economic instability.

Cross-cutting interventions, which address challenges common to both single mothers and low-income groups, are also vital. Establishing community resource centers that provide comprehensive support services, fostering public-private partnerships to maximize resources, investing in education and skills development programs, and strengthening social safety net programs are essential initiatives. These interventions aim to provide holistic support to vulnerable populations, promoting economic resilience, social inclusion, and overall well-being after the pandemic.

Understanding the impact of COVID-19 on working women is crucial for informing policies and strategies that promote gender equality and support women's well-being and professional advancement in a post-pandemic world. Policymakers should consider implementing targeted interventions that address the unique challenges faced by working women, particularly those from vulnerable groups. Researchers should continue to explore the long-term impacts of the pandemic on women's employment and mental health, as well as the effectiveness of various policy interventions in mitigating these challenges.

By addressing the unique needs of working women, we can strive towards a more inclusive and equitable society. Future research should aim to longitudinally track the recovery and resilience of working women, considering the evolving nature of work and caregiving responsibilities in the post-pandemic era [29].

CONCLUSIONS

This study provides a comprehensive analysis of the impact of the COVID-19 pandemic on the employment status, career progression, mental health, and overall well-being of working women in the Rajkot District of Gujarat. The findings highlight significant changes in employment dynamics, an increase in challenges faced, and a greater need for psychological support post-pandemic [30]. The research underscores the urgent need for targeted policy interventions to support vulnerable groups, including single mothers and low-income women, to mitigate the long-term socioeconomic effects of the pandemic.

Addressing these challenges through flexible work policies, enhanced healthcare access, financial assistance programs, and comprehensive support services can promote resilience and gender equality in the workforce. Policymakers, employers, and researchers must work collaboratively to develop and implement strategies that support the well-being and professional advancement of working women, ensuring a more inclusive and equitable recovery from the pandemic's impacts.

Future research should focus on longitudinal studies to track the ongoing recovery and adaptability of working women in various sectors and socioeconomic groups, providing deeper insights into the long-term effectiveness of the interventions implemented. By continuing to address the unique needs of working women, society can move towards a more resilient and inclusive future.

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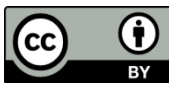
Conflicts of Interest: None declared

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