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Gender and Social Determinants of Health: A Mixed Method Study in Khyber Pakhtunkhwa, Pakistan

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ABSTRACT

Gender is recognized as a fundamental social determinant within the overarching framework of the World Health Organization's Social Determinants of Health (SDH). It is conceptualized as a central factor influencing population health and contributing to health inequalities. **Objective:** To investigate disparities based on gender in the social determinants of health and assess gender inequities in Khyber Pakhtunkhwa, Pakistan. **Methods:** A mixed-methods approach, comprising both a survey and an exploratory qualitative study, was employed at Mardan Medical Complex Hospital in Mardan. A total of 10 interviews were conducted with healthcare workers (HCWs), and the study included 210 patients. **Results:** Out of the 210 patients, the majority were female (107/210, 51%), while 103/210 (49%) were male. 80 out of 103 (77%) females were house wives. More female (30 out of 103) is illiterate than male (21 out of 107) in the study participants, men (25 out of 107) are more educated in the secondary and higher education than women (16 out of 103). Women have high literacy level in religious education (12 out of 103). Women (25 out of 103) are more prone to partner's verbally or physical aggression than men (15 out of 107). Among female patients, predominant challenges encompass domestic concerns, experiences of violence and abuse, a deficit of trust, and socio-cultural barriers. In contrast, a prevalent social determinant of health for males was identified as financial responsibility, contributing to a notable incidence of mental health illnesses. **Conclusions:** In conclusion, the study sheds light on significant gender-based disparities in social determinants of health (SDH) and their profound impact on the well-being of individuals.

INTRODUCTION

Social determinants of health (SDH), characterized by disproportionate and avoidable differences in health status [1]. Sex refers to stable biological attributes, while gender encompasses societal expectations, power dynamics, and prescribed roles, which can vary across time and contexts. Both sex and gender contribute to the complexity of health outcomes [2]. Gender, in this context, encompasses the societal constructs of roles, relationships, personality traits, attitudes, behaviors, values, and the relative power and influence attributed differentially to the two sexes. The interaction of gender with social, economic, and biological determinants plays a crucial role in the outcomes of tropical diseases, leading to varied health impacts for males and females [3]. Within the framework of the World Health Organization's SDH, gender is construed as a fundamental factor influencing population health and contributing to health inequalities [4]. Most health inequalities in socio-economic and gender groups are, avoidable [5]. The past two decades have seen a reappearance of international interest in the non-medical and non-behavioral precursors of health and illness, and SDH are focused [6]. SDH contribute considerably to premature morbidity and mortality particularly amongst vulnerable individuals such as women, children, the aged

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and minority groups [7]. A reasonable amount of research has examined mid- and downstream social determinants of health and their association to health conditions and health inequalities [8]. Efforts to improve health and decrease gaps in health need to pay better attention to addressing the social determinants of health inside and outside of the healthcare system [9]. There is growing evidence that the poor and least educated die earlier and have more health issues than the richest and maximum educated [10]. Underlying factors such as education, income, employment and social support help to describe why some individuals are healthy and others not. These causes are often called "the social determinants of health" [11]. The key to improving health is improving the conditions of daily life, particularly for disadvantaged groups [12, 13]. A randomized control trail concluded that the main social challenges identified in clinical care in Eastern Mediterranean Regions include food insecurity, poverty, illiteracy and domestic violence. Physicians attempted to help their patients by giving free medical services and free medications, launching a donation box, and referring to social workers and support services, where exists. The participants stated that Canada is generally better in dealing with the social challenges than their countries of origin [14]. A cross-sectional study on 100 participants was conducted in USA addressing social and behavioral determinants (SBD) of health. The result shows median number of negative SBDs was 4 (IQR 2.75–7.0), 96 participants had at least one unmet need, and the most common negative SBD was physical activity (75%; 75/100) [15]. Another study conducted in US shows that Patient navigators screened 11,273 patients with SDH, identifying and documenting 47,911 SDH in the electronic health record [16]. Study of South Asian countries reiterates the importance of addressing social determinants of health in tackling wealth-related inequalities in use of facility delivery services. Health policy makers should acknowledge the importance of social determinants in determining individual health-seeking behavior and accordingly set their strategies to improve access to facility delivery [17]. A qualitative study conducted in Pakistan suggest that demand-side interventions aimed at shifting attitudes toward the value of skilled maternal health care and reducing financial obstacles to accessing such services, although not misplaced, will have limited impact until they are informed by a better understanding of the social and economic realities of poor women's lives [18]. Another study was conducted to assess the independent impact of wealth status, as determined by a validated index on health outcomes in Pakistan, concluded that data from Pakistan quantify the burden of morbidity and mortality and access to health care associated with inequitable distribution of wealth in the society [19]. A study conducted in Pakistan with the national sample, comprising 14,531 children across 10 cities, revealed that inadequate school availability, low levels of female literacy and decision-making autonomy, limited awareness of vaccination benefits, and scarce social connections beyond the household. These multifaceted factors collectively interact and reinforce prevailing gender norms, perpetuating low levels of health literacy and constrained access to health services [20]. Typically, engaging in income-generating activities is associated with increased autonomy, decision-making authority, and societal respect. Given the predominant involvement of men in the paid labor force and their higher earnings, even when considering the valued domestic and other contributions of women, men generally experience greater autonomy and elevated social status. These gender-based variations in economic status and purchasing power significantly impact the health-seeking behaviors and health outcomes of both men and women [3]. Research investigating gender differences in depressive symptoms consistently reports higher symptom levels in women compared to men [21].

Gender based social determinants of health and assessment of gender inequities are not explored in the study area therefore, below in this study, we are trying to explore the gender in-equity related to SDH in Khyber Pakhtunkhwa(KP)Pakistan.

METHODS

Study was conducted in Mardan Medical Complex (MMC) a tertiary care teaching Hospital, Mardan during the timeline of January 2022 to November 2022. A mixed-methods approach was applied including a survey and an exploratory qualitative study. The study included a baseline survey through structured questionnaire from patients followed by in-depth interviews with HCW, to explore the situation. For in-depth interviews, a purposive sampling was done to enrol participate in the in-depth interviews, and enrolment was continued until data saturation is reached (total 10 interviews were conducted). Sample size for survey of patients was 210 based on 5% margin of error with a 95%confidenece level and population size as MMC is 500 bed hospital. Systematic random sampling was done for patient. Census sheet was obtained from In-patient department. In 1st two patient on the list, one was randomly selected followed by every second patient, till completion of sample size. All respondents of age above 18 years are included in the study, so their consent can be taken. Mentally disabled patients were excluded as they were not able to address their responses correctly. Data was collected through structured questionnaire. Purposive Sampling was done for qualitative in-depth interviews. For

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in-depth interviews semi structured questionnaire/study guide was utilized. Ethical approval is taken from the Institutional Review Board (ISRB) of MMC hospital and IRB University of the Punjab. Nursing interns were hired for data collection. Data collectors were trained prior to data collection, and initial interviews were conducted under supervision. Data from the patients was collected in examination room and Medical Officers (MO) rooms using structured questionnaire. During in-depth interview consent was obtained from the participant, and audios were recorded along with documentation by Note Taker. Quantitative data were analysed using SPSS software version 23.0. The descriptive statistics of qualitative variables are given as frequency and percentages, while mean ±standard deviation (SD) is given for quantitative variables. Qualitative data were analysed using thematic analysis. All the interviews were conducted in Urdu and recorded using audio tape. The recordings of the interviews were listened to repeatedly to get acquainted with the data and let the transcription take place correctly. The audio recordings of the in-depth interview were transcribed verbatim (and translated into English). The description of participants' data was read repeatedly to extract the significant statements related to the study. Once the data transcription was developed, the next step was to break the whole text into segments or meaning units. Meanings were formulated, and hidden meanings pertinent to phenomena were explicitly mentioned. The themes were then gathered to identify meanings of the phenomena which are common to all. The generation of predominant themes followed this. Last, information was coded according to the topic and comprehensive descriptions were developed. In the second last step, a statement was built from the comprehensive description established in the previous step. Finally, the statements were validated by the participants. If any new idea is discussed or any statement needs correction, the necessary changes are incorporated into the findings. Study purpose was explained to each participant before starting the interview. Written consent was taken from the participants to ensure willingness and verbal consent were taken from illiterate participants. Confidentiality was maintained and ensured by not asking name of the participant. Ethical approval was obtained from Ethical committee MMC Mardan (D/No.252/BKMC), and the IRBC of Punjab University (No.D/311/FIMS).

RESULTS

Majority of the respondents of the present study were male (51.0%) and married (61.9%) with mean ± SD age of 36.18±15.81. One-fourth of the respondents were illiterate (24.3%). Concerning the employment status of the respondents, more than one-third of the respondents were homemakers (38.1%) among female. While regarding income source, more than one-fourth of the respondents stated to rely on their spouse's employment (28.1%), followed by their employment income (21.9%) and business income (15.7%). The complete socio-demographic characteristics can be viewed in table 1 below.

Table 1: Socio-demographic characteristics of Respondents (Patients)

Socio-Demographics	F (%)
Gender	
Male	107 (51.00)
Female	103 (49.0)
Age	
Mean ± SD age	36.18 ±15.81
Equal to or less than 25 years of age	73 (34.9)
26-35 Years of age	50 (23.9)
36-45 Years of age	35 (16.7)
46 and above Years of age	51 (24.4)
Education	
Illiterate	51 (24.3)
Primary level schooling (1-5 years)	36 (17.1)
High school	17 (8.1)
Secondary level school	44 (21.0)
Vocational diploma/religious education	22 (10.5)
Bachelors/ masters	40 (19.0)
Children	
Mean ±SD children	2.66±2.86)
No child	89 (42.6)
1-3 child/ children	44 (21.1)
More than 3 children	76 (36.4)
Marital status	
Single	69 (32.9)
Married	130 (61.9)
Divorced/ widow/widower	11 (5.2)
Employment status	
Looking for work / unemployed	38 (18.1)
Home maker (house wife)	80 (38.1)
Part-time/full-time employment	21 (10.0)
Business man/women	19 (9.0)
Farmer	16 (7.6)
Others	36 (17.1)
Income status	
Own employment income	46 (21.9)
Spouse's employment	59 (28.1)
Government/ Insurance benefits	20 (9.5)
Loan	19 (9.0)
Business income	33 (15.7)
Income from agriculture/ investment	13 (6.2)
Others	20 (9.5)

When participants were asked regarding employment status, 80 out of 103 (77%) female participants were house wives, in employment status of male participant's majority

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(31/107, 28.9%) were unemployed, 16 each out of male participants were business men and farmers. In employment status male participants were dominants and are more involved in financial responsibility as compare to female participants as shown in figure 1.

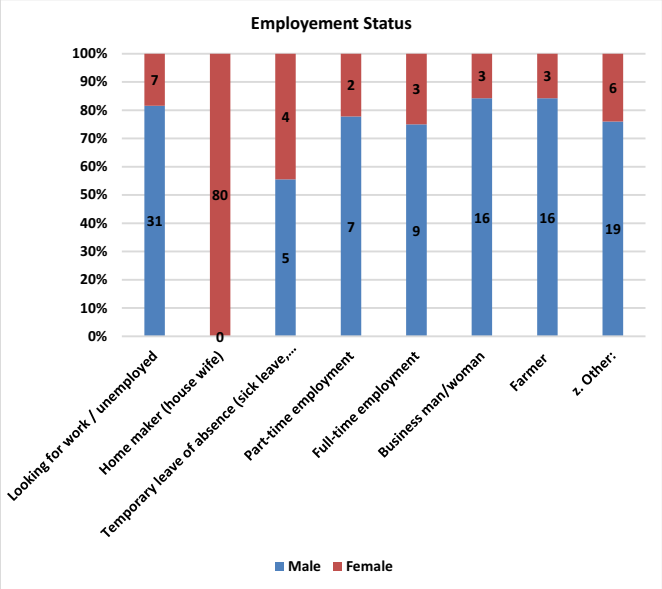

Figure 1: Employment status

More female (30 out of 103) is illiterate than male (21 out of 107) in the study participants, and there is no significant difference in primary, level education and vocational training. While men (25 out of 107) are more educated in the secondary and higher education than women (16 out of 103). Women have high literacy level in religious education (12 out of 103) and the reason is because it is free of cost, available at doorstep and most of the time it is delivered at nearby homes by female teachers for females. There is a significant difference in level of education in figure 2.

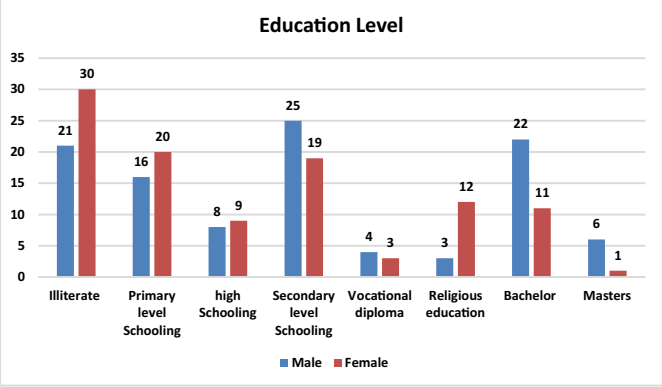

Figure 2: Education level of study participants

Most of the females are dependent on their spouse's employment (51 out of 103) and no single female have income from investment. Figure 3 shows that most female are financially dependent and few of them are have their own income sources.

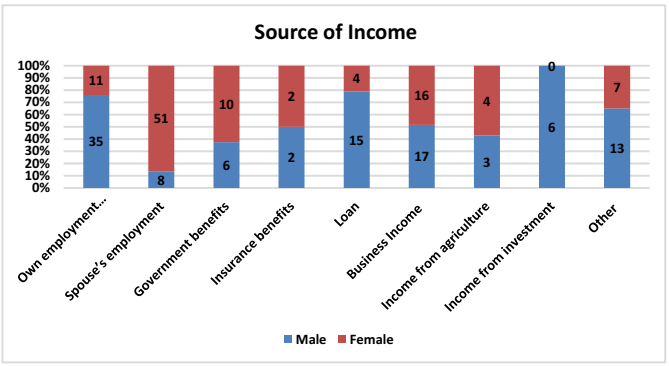

Figure 3: Source of income

Women (25 out of 103) are more prone to partner's verbally or physical aggression than men (15 out of 107) as illustrated in figure 4 below.

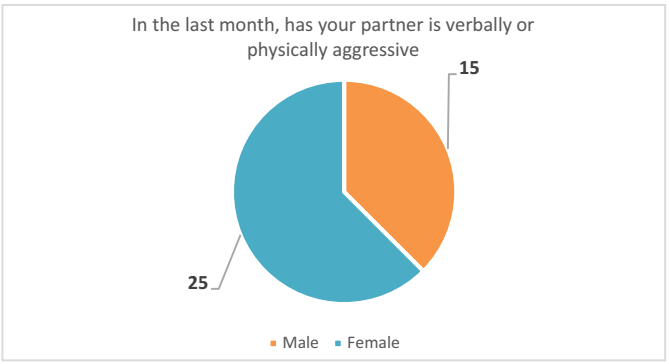

Figure 4: Verbal or physical aggression by partner

A total of 16 participants are included in in-depth interviews: seven are doctors, seven are nurses, and two are psychiatrists. The sociodemographic of all the participants included the participants' code used in the study to maintain confidentiality, participants' age, qualifications, profession, designation and working experience. The participant age ranges from 26 to 36 years while the experience of all the participants ranges from 1 to 10 years. When the study participants were asked about the gender based socio-cultural challenges their patients confront in daily life and medical emergencies, all interviewees unanimously acknowledged the prevalence of such issues. Among female patients, predominant challenges encompass domestic concerns, experiences of violence and abuse, a deficit of trust, and socio-cultural barriers. In contrast, a prevalent social determinant of health for males was identified as financial responsibility, contributing to a notable incidence of mental health illnesses. It is noteworthy that these social issues, at times, escalate to severe consequences, including suicidal tendencies. As one of the study participants narrated the story of his patient, "We often receive patients having social issues or domestic issues, previously, we have a 21-year-old female who attempted suicide by poisoning herself due to domestic issue. Further, she attempted

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suicide because her mother had cardiac arrest a week before". Sometimes these social and domestic dispute and unwanted relationships grows to limit that result in gunshot and knife injuries. The most common challenges faced by females' patients are domestic issues, violence and abuse, lack of trust and socio-cultural barriers. The most common SDH in male was financial responsibility due to which most male was having mental health illness. Sometimes, these social issues lead to serious and extreme consequences like suicidal attempts. Further, the theme also explores some gendered challenges associated with the socio-cultural issues of patients. Many interviewees noticed in their patients were the sexual harassment at home and workplace especially female are victims. On the other side, the male mostly suffered from un-employment led to anxiety and depression which in worse form goes towards suicidal attempts. Almost all study participants have experienced several socio-cultural challenges in their patients. The frequently observed issues and challenges include poverty leading to improper nutrition & delayed disease treatment, mental health issues due to negligence, unemployment & financial responsibilities in men, forced marriages in women, domestic violence & divorce as a result of mismatched marriages, etc. Most importantly, the country's current financial, political and security situation also leads to mental disorders frequently reported in different patients who treat minor diseases. One interviewee narrated socio-cultural challenges: "We have patients with different social issues, most with domestic problems. I will start with female issues. Girls are banned from school by their parents when they are teenagers; then they are married off without their consent. During the marriage, there is the issue of dowry from the in-laws. If the daughter is born to her, the in-laws taunt and tease the girls, asking her why she did not have a son. In addition, if the husband is unemployed, the in-laws also blame the wife. Then, if she wants to go to her parents for a few days to relax, that's also a problem for women's girls because the in-laws create problems for her. Some customs and rituals also affect women a lot for being female. Now, if we talk about men, the biggest problem nowadays is inflation is very high, unemployment is also very high, and there are many problems for them where they work, like harassment and abuse in the workplace. Patients keep coming up with these issues". The fundamental source of the aforementioned challenges is primarily attributed to a low level of education, resulting in unemployment and financial dependency among the youth. These circumstances can give rise to heightened levels of anxiety and depression. Additionally, domestic issues significantly impact the health of females, while the burden of financial responsibilities predominantly affects males.

DISCUSSION

In employment status male participants were dominants and are more involved in financial responsibility as compare to female participants. Most of the females are dependent on their spouse's employment (51 out of 103). Typically, engaging in income-generating activities is associated with increased autonomy, decision-making authority, and societal respect. Given the predominant involvement of men in the paid labor force and their higher earnings, even when considering the valued domestic and other contributions of women, men generally experience greater autonomy and elevated social status. These gender-based variations in economic status and purchasing power significantly impact the health-seeking behaviors and health outcomes of both men and women [3]. In study participants more female (30 out of 103) are illiterate than male (21 out of 107), while females have high literacy level in religious education (12 out of 103) and the reason is because it is free of cost, available at doorstep and most of the time it is delivered at nearby homes by female teachers for females. Our society is characterized by male dominance, with women experiencing neglect across various aspects of life. Disparities between men and women are evident in education, employment, and health. The research reveals that women encounter discrimination in pursuing professional degrees and securing higher positions. Enrollment and managerial positions in universities also exhibit a gender gap, as highlighted by the findings. The studies identify numerous barriers, including social, organizational, and personal factors, which contribute to the discrimination against women [22]. Women (25 out of 103) are more prone to partner's verbally or physical aggression than men (15 out of 107). These findings are aligned with a study conducted in Pakistan. A notable proportion of women, specifically 32% of the randomly selected sample of 150 women from health facilities in Karachi, Pakistan, have reported experiencing physical violence. Moreover, a survey conducted in Punjab, Pakistan, involving 1000 women revealed that a substantial percentage, ranging between 70% and 90%, of married women have encountered abuse from their spouses at some point in their lives. The predominant form of violence in Pakistan is identified as being perpetrated by spouses and other male relatives against women [23]. Another study conducted in Gilgit –Baltistan, Pakistan also reported higher levels of domestic violence (88.8%) psychological (69.4%), physical (37.5%) & sexual (21.2%) [24]. The present study found that gender based SDH of their patients include cultural barriers, illiteracy among female, unemployment, sexual harassment, domestic violence by elderly family members or husbands and financial responsibilities of males. These socio-cultural challenges

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not only hinder the patient's social life but also influence the health outcomes of the patients in one way or another. Literature provides evidence that different social and cultural factors, including the existing political structure, socioeconomic status, literacy, occupational opportunities, family dynamics, access to essential services, sanitation practices, exposure to hazards, availability of social support, experiences of racial discrimination, and availability of resources, and all these components are closely linked to health outcome [11]. There is a direct association between the disparities in health status among gender and the disparities in social status.

CONCLUSIONS

In conclusion, the study sheds light on significant gender-based disparities in social determinants of health (SDH) and their profound impact on the well-being of individuals. The findings underscore the prevalence of gender inequalities in employment, literacy, and exposure to violence, with women often bearing a disproportionate burden. Men, on the other hand, grapple with distinct challenges, particularly related to financial responsibilities. The study illuminates the complex interplay of cultural, economic, and societal factors contributing to these disparities, emphasizing the need for comprehensive interventions addressing not only the immediate health issues but also the underlying social determinants. Ultimately, the study underscores the imperative for targeted policies and interventions aimed at fostering gender equity and addressing the root causes of health disparities in the context of broader social determinants.

Authors Contribution

Conceptualization: SBA, JS, MI
Methodology: SBA, JS, MI
Formal analysis: SBA, JS, MI, S., MAS, HWA
Writing-review and editing: SBA

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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