02-12-TIBSS-5625-1079

International Journal of
Trends and Innovations in Business & Social Sciences
Vol. 3 No. 2 (June, 2025) | 131 - 140
ISSN (e): 2959-4634 | DOI: https://doi.org/10.5281/zenodo.15869147

Through the Grey Prism: An Intersectional Analysis of Gender, Age, and Healthcare Inequities in Rural Multan, Pakistan

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ARTICLE INFO

Article history:

Received: April 15, 2025
Revised: June 10, 2025
Accepted: June 12, 2025
Published: June 30, 2025

Keywords:

Gendered health
Health and aging
Health inequalities
Healthcare utilization

ABSTRACT

This study investigates gender-based health disparities among older individuals in rural Multan, Pakistan. The study's goals are to examine the impact of gender on health status, identify disparities in healthcare service accessibility across socioeconomic groups, and investigate the effects of ageing and dietary intake on health perceptions. Additionally, it identifies gender-specific barriers to healthcare utilisation and investigates the Impact of the social support system and external variables on health outcomes. Methodologically, a quantitative cross-sectional design was employed, utilising a structured interview schedule with 385 respondents aged 60–80 years. Data collection involved rigorous validity and reliability testing of a 66-item questionnaire administered in English and Urdu. Statistical analyses facilitated exploration of health disparities and predictors among elderly males and females. Significant health inequalities are influenced by demographic factors, including ageing, gender, education levels, occupation status, and socio-economic strata. The study underscores the impact of traditional mechanical and emotional gendered roles, limited healthcare access, and socio-economic constraints on health outcomes in the rural areas of Multan city.

INTRODUCTION

Health disparities, known as differences in health outcomes among different groups, are an important public health concern and indicate systematic differences between populations across specific aspects of wellbeing. These are not simply statistical anomalies, but rather indicators of underlying inequities across the social, economic and environmental spectrum that affect marginalized communities on a greater scale. Although early definitions focused largely on racial and ethnic differences within the United States, disparities can also exist along other lines of bases (e.g., socioeconomic status, gender, disability)

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How to Cite:

Hassan, M. M., Rehman, M., Gillani, S. M. A., Afzal, S., & Ahmad, I. (2025). Through the Grey Prism: An Intersectional Analysis of Gender, Age, and Healthcare Inequities in Rural Multan, Pakistan. *International Journal of Trends and Innovations in Business & Social Sciences, 3*(2), 131–140.

DOI: https://doi.org/10.5281/zenodo.15869147

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as well as the sexual orientation (Nelson, 2023). These broader definitions highlight the importance of intervention to prevent inequalities in access to health care resulting from social systems and not biological characteristics (Dehlendorf et al., 2010). Explaining health disparities is about navigating complex causal pathways through individual behaviours, community environments, and systemic disadvantages. These issues contribute to overall negative outcomes in health with access (Kilbourne et al., 2006). Explaining health disparities is about navigating complex causal pathways through individual behaviours, community environments, and systemic disadvantages. These issues contribute to overall negative outcomes in health with access. Adding complexity is the fact that, within contexts such as food insecurity (insecure or limited access to sufficient and quality foods), rural health settings where older populations often face added vulnerabilities due to lack of resources and remoteness from services (Seefeldt, 2010).

Existing literature on Social and economic status and health inequality points towards an observable correlation between health status and Social and economic status across populations (Gallo et al., 2009). However, despite this realization there are still many challenges to meaningfully address health inequities. The reserve capacity model underscores how psychosocial resources impact physical health disparities, often linked with low SES, perceived control, and social support inadequacies. There is a critical need for enhanced financial and socioeconomic support for older populations (Brinda et al., 2016; Kondo et al., 2009; Roy et al., 2020). Access to healthcare is influenced by biological, social and environmental factors, all of which contribute to racial and ethnic health inequality (Thomas, Fine, and Ibrahim, 2004). Efforts to mitigate health disparities emphasize creating socioeconomic support networks and improving healthcare accessibility (Thomas et al., 2004). Cultural considerations in public health policies are crucial for addressing chronic illness risk factors among minority populations (Thomas et al., 2004; Griffith et. al, 2010; Singer, 2012; Dressler et al., 2014; Kwabi-Addo & Kwabi-Addo, 2017).

The study on dietary barriers and health differences reveals disparities in the quality of diet which is influenced by food prices (Brown et al., 2022). Lower SES groups tend to consume lower-quality diets, often due to barriers like cost, taste preferences, and social factors. Health inequities are conspicuous in Pakistan, particularly among the elderly population of rural areas such as Multan. This is where global public health meets gender roles, cultural norms and lack of access to adequate health care in locking us into a series of preventable poor health outcomes (Ali et al., 2011). The elevated maternal mortality rates and insufficient healthcare facilities highlight the critical need for interventions that comprehensively address these health issues (Mumtaz et al., 2012).

Comprehensive research was required to elucidate the interplay of gender, socio-economic status and cultural norms in determination of health care access and outcomes particularly in rural settings as significant gaps remain. Research investigating the link between ageing, healthy eating and health is scarce with few investigations having been performed among different socioeconomic strata (Sultan et al., 2023). However, many studies do not generally consider how gender roles and socioeconomic determinants intersect with ageing to shape the health of women (Siddiqui et al., 2021). There is a need for further research on these intersections to determine dietary inadequacies among older adults and assist in health promoting ageing. Besides, a complete profile of healthcare access barriers especially in the underprivileged rural areas like Multan and its distribution across different socioeconomic classes and cultural norms is seldom evaluated by study (Sulaman et al., 2020). This paper intends to fill the gaps regarding health disparities between aged people residing in rural areas of Multan city. The study aims to shed light on the ways in which gender, socioeconomic position and societal norms intersect while generating knowledge that can guide interventions or policies targeted at eliminating inequalities between men and women despite disparities health-wise.

Objectives

- Examine inequalities across socio-economic groups for healthcare services access.
- Explain the association between ageing and diet composition with health in older adults.
- Identify gendered barriers in healthcare services accessibility.

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METHODOLOGY

A quantitative cross-sectional study was adopted to evaluate the burden of health inequity among elderly males and females in rural Multan. This methodological decision was ideal for generating findings which are descriptive of the population, and provided an exceptional understanding about the multifaceted nature that contributes to health disparities within region. In southern Punjab, the city of Multan is plagued with extreme health disparities due to limited healthcare accessibility and traditional gender norms that confine women in their homes. These factors result in disparities affecting older population, specifically in rural areas. A multi-stage process was used to select the sample. Stage one involved selecting respondents from among all 117 rural union councils in Multan. Through non probability particularly purposive sampling 385 persons aged between 60 to 80years who resided in each council were selected by taking proportional representation from 5 union councils. For data collection a structured interview schedule, containing 66 closed-ended questions in English which were translated to Urdu language to cater for the variable levels of literacy status.

The study used 5-point Likert scale to maintain data quality and was undergone with rigorous analysis for its validity as well reliability. Content validity of questionnaire was confirmed by an expert review and Cronbach's alpha values between 0.743-0.960 indicated a strong internal consistency within all sections. A pilot testing among 15 participants made the questionnaire more understandable within our target audience. Ethical principles ensured the safety and privacy of participants, allowed voluntary participation and individual informed consents obtained from respondents. For analysis IBM SPSS-21 was used. Descriptive statistics such as frequency and percentages were performed. For inferential statistics the independent sample t test was utilized to compare the variations among the two sets of participants, one way-ANOVA (Analysis of Variance) had been employed to compare differences in three socioeconomic statuses, while Multiple Linear Regression had been operationalized to check the impact of diet and aging on health.

RESULTS & FINDINGS

Table 1

Demographic Description of Respondents

Variables	Categories	f	%
Sex	Men	186	48.3
	Women	199	51.7
Aging	60-65 Y	140	36.4
	66-70 Y	92	23.9
	71-75 Y	105	27.3
	76 Y and above	48	12.5
Educational level	Illiterate	86	22.3
	Literate	299	77.7
Occupational status	Private employ	142	36.9
	Government employ	94	24.4
	Own business	15	3.9
	Without job	134	34.8
Socio-economic class	Lower strata	116	30.1
	Middle strata	247	64.2
	Upper strata	22	5.7

Table 1 provides a detailed demographic breakdown of the respondents based on multiple variables. The gender distribution of the respondents is almost evenly divided (48.3% males and 51.7% females). Most of respondents belong to the 60-65 years' age bracket (36.4%), followed by those aged 71-75 years (27.3%), 66-70 years (23.9%), and 76 years or above (12.5%). Educationally, the distribution shows the highest percentage being literate (77.3%) followed by illiterates which comprises of (22.3%). Occupationally, respondents are primarily engaged in private jobs (36.9%) and jobless (34.8%), with smaller proportions in government jobs (24.4%) and business (3.9%). Finally, socio-economic status categorizes respondents

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into lower class (30.1%), middle class (64.2%), and upper class (5.7%) based on self-reported assessments.

Table 2

Health Status and Healthcare Utilization Among Respondents

Self-Reported health Condition		Poor	Fair	Good	Excellent
What would you say about your general health?	(f)	70	141	113	61
	(%)	18.2	36.6	29.4	15.8
What would you say about the way your body functions?	(f)	67	114	135	69
	(%)	17.4	29.6	35.1	17.9
How would you rank your level of access to medical care?	(f)	54	146	114	71
	(%)	14	37.9	29.6	18.4
Frequency of Medical Consultations and Medication		Not at all	Rarely	Occasionally	Always
Do you take any medications?	(f)	54	146	87	98
	(%)	14	37.9	22.6	25.5
How frequently do you go to the doctor?	(f)	76	108	105	96
	(%)	19.7	28.1	27.3	24.9

Table 2 provides insights into the health status and healthcare utilization patterns among the respondents. When asked to rate their overall health status, the distribution shows that 18.2% rated it as poor, 36.6% as fair, 29.4% as good, and 15.8% as excellent. Similarly, respondents rated their level of physical functioning, with 17.4% indicating poor, 29.6% fair, 35.1% good, and 17.9% excellent. Regarding access to healthcare services, 14.0% of respondents reported poor access, 37.9% indicated fair access, 29.6% reported good access, and 18.4% reported excellent access. In terms of medical consultation and medication use, 14.0% reported not using any medicine, 37.9% reported rare use, 22.6% reported occasional use, and 25.5% reported using medication always. Lastly, when asked about the frequency of visits to healthcare providers, 19.7% of respondents reported never visiting, 28.1% reported rare visits, 27.3% reported occasional visits, and 24.9% reported visiting healthcare providers always. Overall, Table 5.2 illustrates a varied health profile among the respondents, highlighting their self-reported health status, physical functioning, access to healthcare, medication use, and frequency of healthcare visits. These insights are crucial for understanding the healthcare needs and behaviours of the surveyed population.

Table 3

Social Influences on Medical Students' Stress Levels

Statements	SDA %	DA %	N%	A%	SA %
Section A: Gender as Health Barrier					
Does a person's gender influence their ability to receive healthcare?	10.9	24.2	10.6	27.5	26.8
Have you noticed gender-based bias in the healthcare field?	14.8	12.7	30.4	27.3	14.8
Do decisions about healthcare get influenced by traditional gender roles?	7.5	14	22.1	34	22.3
Do gender-related cultural customs influence medical care use?	6.8	19	17.9	22.9	33.5
Are there different expectations for healthcare management based on gender?	10.9	14.3	35.1	20.3	19.5
Section B: Age and Health Disparities					
Do obstacles brought on by aging prevent you from receiving healthcare services?	13.5	16.1	29.6	26	14.8
Do you find it harder to make health-related choices as you get older?	14.8	11.4	29.1	31.9	12.7
Do you believe that getting medical care is biased based on age?	10.6	13.8	29.9	27.8	17.9
Do you believe medical professionals are addressing your specific health requirements and worries as you age?	13.8	12.7	31.2	26.2	16.1
Are you aware of the typical health hazards that come with getting older?	12.5	11.7	32.2	29.4	14.3
Section C: Access to Healthcare					
Are medical facilities near your home?	15.6	45.5	33.2	3.1	2.6
Is it more expensive to travel to medical facilities?	14.8	52.2	27.3	3.4	2.3
Do you have to wait a long time at medical facilities to get medical attention?	13.5	49.1	31.7	3.1	2.6
Are there enough medical services and treatments offered by the healthcare facilities in your area?	13	49.1	32.2	3.4	2.3
Do you have trouble getting specialized medical services, like those for emergencies or chronic conditions?	14.3	48.1	31.9	2.6	3.1
Section D: Dietary Dynamics					
Does your everyday diet contain a variety of foods?	11.9	13.5	30.9	27.8	15.8
Do you frequently consume well-balanced meals?	14.5	12.5	29.6	26	17.4
Can you easily afford nutritious food items?	11.4	12.2	28.3	28.1	20
Does distance make it difficult for you to get nutritious foods?	13.2	11.7	31.2	27.5	16.4
Do you think your current eating habits are adequate and don't need to be changed?	11.7	13	29.9	26.5	19

*(*p<0.01)*

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Table 3 presents data on social influences affecting medical students' perceptions of various statements related to healthcare and lifestyle choices. In Section A, regarding gender influences on healthcare, responses varied across statements. A notable proportion (27.5%) agreed that gender affects healthcare access or treatment, while a similar percentage (26.8%) strongly agreed. Regarding gender-based discrimination in healthcare, responses were more evenly distributed, with 30.4% agreeing and 27.3% strongly agreeing. Views on traditional gender roles impacting healthcare decisions showed a diverse range, with 34.0% agreeing and 22.3% strongly agreeing. Section B focused on age-related challenges. Responses indicated that aging presents barriers to healthcare access for 29.6%, with 16.1% strongly agreeing. Perceptions of discrimination based on the age in accessing health services had 29.9% agreeing and 17.9% strongly agreeing.

Section C explored logistical aspects of healthcare access. Responses showed that 45.5% strongly agreed they have easy access to health facilities, while 33.2% agreed. Concerning transportation costs to health services, a significant 52.2% strongly agreed it was higher. Section D addressed dietary habits and nutrition. Responses indicated that 30.9% agreed they consume a variety of foods daily, while 27.8% strongly agreed. Regarding affordability of healthy food options, 28.1% agreed and 20.0% strongly agreed they find it easy to afford such foods. Overall, Table 3 provides a comprehensive view of medical students' perceptions on social factors influencing healthcare access, age-related challenges, logistical barriers, and dietary habits. These insights are crucial for understanding the perspectives of future healthcare professionals on these critical societal issues.

Table 4

Comparing the health condition between men and women using Independent sample t test

	Sex	N	$\bar{X}$	St. D	T	P	Results
Health Condition	Men	186	5.9	1.434	20.53	0	Extremely Significant Difference
	Women	199	8.97	1.497			

Table 4 shows the results of an Unpaired t-test. The average self-reported health condition among male respondents (N=186) turned out 5.90 alongside a degree of data dispersion about 1.434. Women (N=199) showed a considerably greater average of 8.97 and a degree of data dispersion about 1.497. The Test statistic value for the above comparison was 20.529, giving a significance level indicator of 0.000, demonstrating an extremely significant disparity in self-reported overall health between men and women. This finding suggests that female respondents tend to report higher health statuses compared to their male counterparts in the surveyed population.

Table 5

Comparing aging as a limitation towards medical care among elderly men and women

	Sex	N	$\bar{X}$	St. D	T	P	Results
Aging as a limitation towards medical	Men	186	19.85	1.836	33.98	0	Extremely Significant Difference
	Women	199	12.34	2.471			

*(*p<0.01)*

Table 5 displays the outcomes of a t-test using independent samples. The mean perception score of advancing age as a health obstruction among male respondents (N=186) was 19.85, alongside a degree dispersion of 1.836. Women (N=199) displayed a substantially decreased average perception value of 12.34 and a degree of deviation of 2.471. The Test statistic value for this analysis was 33.984, leading to a significance value of 0.000, indicating an extremely substantial disparity in males' perceptions. Suggesting that male respondents perceive aging as a more significant limitation towards medical care.

Table 6

Independent Samples t-test comparing dietary limitations among men and women

Variable	Sex	N	$\bar{X}$	St. D	T	P	Results
Dietary Limitations	Men	186	19.05	2.042	23.2	0	Extremely Significant Difference
	Women	199	13.62	2.542			

*(*p<0.01)*

Table 6 displays the results of a t-test with independent samples that contrasts male and female respondents' opinions on dietary limitations. For Men (N=186), the average perception score of dietary limitations was 19.05, alongside a degree of deviation of 2.042. Women (N=199) had a substantially lower mean perception score of 13.62 and a degree of deviation of 2.542. The Test statistic value for this analysis was 23.203, showing a significance value indicator of 0.000, implying a highly significant distinction in males' perceptions of dietary limitations versus females. This finding suggests that male respondents perceive dietary barriers as more significant contributors to health disparities compared to female respondents in the surveyed population.

Table 7

Access to medical services by Socioeconomic Class: An Analysis of Variance (ANOVA).

	Groups	S.S	D.f	M.S	F	P	Finding
Access to medical services	Between the groups	4499	2	2250	1628	0	Extremely
	Within the groups	527.9	382	1.382			Significant Difference

Table 7 shows the outcome of an Analysis of Variance (ANOVA) contrasting access to medical services within socioeconomic classes. The ANOVA results demonstrate significant variations in access to medical services in different socioeconomic classes. Sum of squared variances between groups (BWG) is 4499.224, with two Degrees of variation (Df), giving a mean square of 2249.612. The calculated F score is 1627.764, with a very substantial significance indicator of 0.000 (*p<0.01), suggesting significant variation in accessibility to healthcare facilities in socioeconomic classes.

Table 8

Post-hoc contrasts of mean variations in having access to medical services.

Socio-Economic Class(I)	N	Classes (J)	Mean variation (I-J)	Std. Error	P
Lower Strata	116	Middle Strata	-4.799*	0.132	0
		Upper Strata	-14.635*	0.273	0
Middle Strata	247	Lower Strata	4.799*	0.132	0
		Upper Strata	-9.835*	0.262	0
Upper Strata	22	Lower Strata	14.635*	0.273	0
		Middle Strata	9.835*	0.262	0

Table 8 presents post-hoc comparisons of average variations in accessibility to medical facilities across socioeconomic strata, which help to explain the ANOVA results. The mean disparity between Lower Class (N=116) and Middle Class (N=247) is -4.799, with Error margin about 0.132 and a significance indicator of 0.000, giving a statistically significant difference. Lower Class respondents have less access to medical services than the Middle Class. The mean disparity between Lower Class and the Higher Class (N=22) is -14.635, with an Error margin of 0.273 and a significance indicator of 0.000, showing a difference of statistical significance. Lower-class respondents have significantly less access to medical services than upper-class respondents. The average difference between the Medium Class as well as Upper Class is -9.835, with an Error margin of 0.262 and a significance indicator of 0.000, showing a difference that is statistically significant. Middle Class respondents have less access to medical facilities than the Upper Class.

Table 9

Effect of Aging and Dietary practices on Health Status using Multiple Linear Regression

Dependent Variable	Independent variable	B	Std. Error	B	T	P	R2	Finding
Health Status	(Constant)	13.4	0.391		34.27	0	0.42	Significant Impact
	Aging	-0.225	0.026	-0.46	-8.683	0		
	Dietary practices	-0.143	0.032	-0.24	-4.537	0		

*(*p<0.05)*

Table 9 displays the results of a multiple linear. The regression model's intercept is 13.398, and the Error margin is 0.391. The test statistic value is 34.267, with a significance value of 0.000, indicating

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that the intercept is statistically substantial. The coefficient for Age is -0.225, this employs that for every unit increase in Age, Health Status decreases by 0.225 units on average. The Error margin is 0.026, the test statistic value is -8.683, and the significance value is highly significant at 0.000 (*p<0.05). Diet has a coefficient of -0.143, indicating that for every unit rise in the perceived value of diet, Health Status drops by 0.143 units on average. The Error margin is 0.032, the test statistic value is -4.537, and the significance value is highly significant at 0.000 (*p<0.05). The model's coefficient of determination (R^2) is 0.420, pointing to that age and diet account for 42.0% of the variation in health status. The regression analysis reveals that the two variables age and diet have a highly significant effect on health status.

Discussion

Demographic factors are key because they often overlap with health disparities and inequitable access to care. Garcia-Gomez et al., (2019) suggested that older adults and people with lower educational levels could face more obstacles in using healthcare services overall. These results were reflected in the report on health status and healthcare utilization patterns, for which wide ranges of self-reported health statuses were observed among individuals with different types of access to care. These categories have been recognized in Health Assessment to influence healthcare seeking behaviours as well treatment out comes, although the distribution in these groups is largely subjective. These results are consistent with Social Cognitive Theory, which states that health behaviours are influenced by personal beliefs about one's own wellness and the effectiveness of healthcare services (Bandura, 2004).

Table 3 explores social determinants of health perception, including gender-based division of labour, age-related barriers and diet-culture in shaping decisions about healthcare utilization. The answers reveal societal norms and cultural beliefs that determine health practices, including access to healthcare services (Emmons, 2000; Fleming & Agnew-Brune, 2015). These social determinants conform to the Ecological Model of Health Behaviour, which highlights that individual, interpersonal and societal elements combine within a culture milieu in facilitating healthy outcomes (Holt-Lunstad, 2018). Table 4, 5 and, 6 report results for differences by sex in self-reported health, perceptions of aging as a barrier to good health and dietary influences on disparities. Results of this study serve to add to existing evidence regarding gendered health conditions and targets for promoting (and improving) the well-being. These observed differences indicate a necessity of gender-specific healthcare methods as well as targeted interventions to cope with varying health conditions affecting men and women over the course of their lives.

ANOVA performed for exploring the differences in access to medical services in different social classes; The striking disparities identified reflect existing socio-economic inequalities in access to health care. These disparities are further supported by Alam (2009). These differences are reflection of Social Determinants Theory that is focused on the ways in which socio-economic factors work through absolute and relative deprivation to produce health outcomes by limiting access to resources as well as manner healthcare services. The multivariate regression results suggest a meaningful predictive role of age and dietary habits in self-rated health reported by previous models relating lifestyle factors to health which is also argued by Kagansky et. al., (2005). The importance of promoting healthy aging initiatives combined with awareness on nutrition education for overall global health and well-being is highlighted considering these findings. In sum, incorporating these results into an interpretation consistent with historical theories of the relations among demographic factors and social and health variables contributes to a much more comprehensive understanding. This study provides insight into more general discussions on health disparities and healthcare access via the application of theoretical frameworks such as social cognitive theory. The theoretical implications argue for a holistic, multi-level approach to promote health equity and improved healthcare outcomes worldwide by targeting both socio-demographic factors in combination with individual health behaviour.

CONCLUSION

This study delivers a holistic profiling of the demographics, health needs and social determinants in measuring self-rated health with reference to healthcare utilization patterns. These results highlight important inequalities in health and healthcare that are shaped by demographic factors; specifically associated to participants age, gender, level of education or occupation status known as SES. Consistent with

previous theoretical frameworks study emphasize multiple levels of influence on health outcomes. The findings on gender-specific and aging-health perceptions, dietary factor or socio-economic constraints in healthcare access indicate that interventions would have to be tailored. Inequalities need to be addressed through specific healthcare strategies that adapt complexity and context sensitive interventions which take into consideration the sociodemographic features (e.g. age, sex) as well as cultural background of host population. Policy initiatives in this area of research should also focus on improving health equity by tackling these social determinants leading to a better understanding concerning healthy aging and diet.

Limitations

There are several methodological limitations imposed by the study. The study may be subject to sampling bias given its dependence upon a specific area or community, therefore limiting how well we can generalize our findings across wider populations. A second limitation is that the sample could not accurately represent the overall population in terms of sociodemographic characteristics (e.g. ethnicity, socioeconomic status and geographical location) which may reduce generalization to more diverse populations as well as theoretically underpinning variation between studies. Improving these aspects of research would build a stronger foundation upon which to explore and remedy issues related to health disparities, access to medical services, and ultimately good health for all populations.

Recommendations

- Implement focused inclusion initiatives to reach underserved populations.
- The infrastructure in the health care sector needs to be increased, with additional investments being made in places where no facilities for treatment are available or very few treatments happen, especially as far as rural and economically disadvantaged areas are concerned.
- Conduct health education campaigns to promote healthy aging and better diet, while addressing identified barriers.
- Promote tolerance among health workers in adopting equitable services that consider the various cultural and gender-specific needs.
- Advocating for policies that promote improved access to medical services for all.

Competing Interests

The authors declared no competing interests.

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