Original Article

Association between socio-demographic factors and reasons for medical care in Mexican adults

Mónica Alethia Cureño-Díaz[1], José Ángel Hernández-Mariano[2], Erika Gómez Zamora[3], Viridiana Judith González Zavala[4]

[1]Department of Medical Research and Teaching, Hospital Juárez of Mexico, Mexico, [2]Department of Research, Hospital Juarez of Mexico, Mexico, [3]Department of Medical Management, Hospital Juárez of Mexico, Mexico, [4]Department of Social Work, Hospital Juárez of Mexico, Mexico

Abstract

Background: The occurrence and distribution of diseases result from the interaction between biological, environmental, economic, and social factors. Although Mexico has made significant progress in the health sector, there are several problems associated with the social determinants of health, which are linked to social factors such as gender, age, income, and schooling, among others. Therefore, the purpose of this study was to evaluate the relationship between socio-demographic factors with the main reasons for medical care among patients seen at a public healthcare institution in Mexico City. **Materials and Methods:** A cross-sectional analytical study in which the clinical records of 1,018 adult patients who attended any of the services provided by a public healthcare institution in Mexico City between August and December 2023 were examined. **Results:** The odds of seeking medical care for neoplastic diseases were lower in men, among patients with their own home, with balanced economic status and surplus, but higher in people aged 40 years and older, in those with fewer intra-household and public services in their homes. **Conclusions:** Strategies for prevention, management, and control of chronic and infectious diseases need to consider social inequalities, addressing the determinants of health to generate a significant impact on the health of the population.

Keywords: Reasons for consultation, socio-demographic factors, social determinants of health

Introduction

The frequency and distribution of both chronic and infectious diseases are directly influenced by the social determinants of health.[1] In contrast to people in higher social classes, individuals in lower social strata have twice the risk of serious illness and death. Such a phenomenon is known as the social gradient in health.[2,3] These inequalities, which are both unfair and avoidable, are shaped by the socio-political and socio-economic contexts in which people live, thus exposing them to particular risk circumstances.[1] The influence of these factors and their effects on health tend to accumulate in the same individuals throughout their lives.[4]

Social determinants of health are defined as the circumstances or conditions in which people are born, grow, work, and age, which result from the historical and current distribution of money, power, and resources at local, regional, and global levels. These determinants are directly dependent on the policies adopted at these levels, as well as on the health system, making them systemic, persistent, and avoidable.[5]

At the global level, Latin America and the Caribbean have positioned themselves as one of the regions with the greatest

Address for correspondence: Dr. José Ángel Hernández-Mariano, Department of Research, Hospital Juarez of Mexico, Mexico City, 07760, Mexico.
E-mail: jose.hernandezm@salud.gob.mx

Received: 19-08-2024 **Revised:** 16-10-2024
Accepted: 24-10-2024 **Published:** 25-04-2025

Access this article online

Quick Response Code:

Website: http://journals.lww.com/JFMPC

DOI: 10.4103/jfmpc.jfmpc_1427_24

How to cite this article: Cureño-Díaz MA, Hernández-Mariano JA, Gómez Zamora E, González Zavala VJ. Association between socio-demographic factors and reasons for medical care in Mexican adults. J Family Med Prim Care 2025;14:1279-87.

social disparities,[6,7] which shapes the social determinants of health, thus impacting access to services, health conditions, and morbidity and mortality indicators among people.[8]

In recent years, Mexico has made significant progress in the health sector, which has allowed life expectancy at birth to reach 75 years.[9] However, despite these developments, several problems are associated with the social determinants of health, which are closely linked to social factors such as gender, age, ethnicity, economic income, and schooling, among others.

Social class, generally defined by income and occupation, is one of the most widely used indicators of socio-economic position.[1,10] Overall, people with greater economic power and access to resources (*i.e.,* education, food, health) tend to be better off compared to those in disadvantaged positions, resulting in health inequalities.[11,12] The area of residence and material status are also related to health, independently of individual socio-economic position. The environment influences access to public goods, such as in rural areas where there may be greater difficulties in accessing public transport, health care, education, and shops.[10,13,14] Another source of health inequality is migration status and ethnicity. Belonging to ethnic minority groups is associated with specific health inequalities, not only because of socioeconomic factors of the social group but also because of barriers to access and ineffective use of health services, due to lack of adaptation or even discrimination.[15,16]

Gender-specific vulnerabilities have also been identified, such as precarious employment in sectors with high feminization and inequalities in domestic work due to the persistence of traditional social roles with a marked sexual division of labor. The above-mentioned might affect women's health in several ways.[17,18]

Access to health care within the health system in Mexico is characterized by a marked difference between people who are incorporated in the formal sector of the economy and those employed in the informal sector. People working in the formal sector are beneficiaries of social security institutions, whose operation is financed by government resources, employer and employee contributions. Hence, people working in the formal sector have access to comprehensive services free of charge.[19] In contrast, the informal sector, which includes a significant portion of the Mexican workforce, often faces greater barriers to accessing public health care services. This sector of the population receives health care from the Mexican Ministry of Health, through health centers, high-specialty hospitals, or other institutions that receive federal and state resources, in addition to the recovery fees that users pay when receiving care.[19]

Understanding the social determinants that are related to the epidemiological profile of users of different schemes that make up the health system, as is the case of users of hospitals of the Ministry of Health, could provide evidence to help guide interventions for the prevention, management, and control of diseases under a comprehensive approach that considers the context of individuals. Therefore, this study aimed to evaluate the relationship between socio-demographic factors with the main reasons for medical care among patients seen at a public healthcare institution in Mexico City.

Materials and Methods

Study design and study sample

We conducted an analytical cross-sectional study in which the medical records of patients who were observed at a public healthcare institution of the Ministry of Health in Mexico City between August and December 2023 were examined.

The sample consisted of 1,018 men and women ≥ 18 years old whose medical records included a socioeconomic study. Medical records without data on the reason for medical care were discarded from the present analysis.

Data collection

The following data were obtained from the sociodemographic study included in the medical records: age; education; marital status; occupation; religion; place of origin; monthly family income, income-to-expense ratio; type of tenure; house construction material; number of bedrooms; number of people per bedroom; and public and domestic services. Additionally, information was collected from the medical records on the reasons for medical care.

Statistical analysis

The categorical variables were described with frequencies and percentages, whereas continuous variables were presented with medians and interquartile range (IQR), as these variables were not normally distributed according to the Shapiro–Wilk normality test. To identify differences between socio-demographic factors and the three main reasons for medical care, Pearson's X^2 or Fisher's exact X test for differences in proportions and the Man–Whitney *U* test for differences in medians were used. Logistic regression models were also constructed to independently assess the association between socio-demographic factors and the three main reasons for medical consultation. All analyses were adjusted for potential confounders. Confounders included as adjustment variables in the final models were those that when removed from a saturated model caused a >10% change in the adjusted estimator. Given that sociodemographic variables may be highly correlated with each other, before fitting the statistical models, we constructed a correlation matrix and assessed the variance inflation factor to identify and treat those covariates that could imply a multicollinearity problem in the final models.

Statistical significance for all models was based on a *P* value <0.05. All analyses were performed using the statistical package STATA, version 15.1 (Stata Corporation, College Station, TX).

Ethical considerations

The research was carried out following the ethical standards of the Declaration of Helsinki, and the protocol of the present study was approved by the Ethics and Research Committees (Code: HJM-23-I) of the institution where it was carried out.

Results

Description of the socio-demographic characteristics of the study sample

The socio-demographic characteristics of the patients are described in Table 1. Of the total number of medical records analyzed, 66.6% were female; the median age was 50 years (IQR = 21). Also, 42.2% were married or cohabiting; the highest level of education of the majority was secondary school (33.2%). The median monthly household income was 6,900 Mexican pesos (IQR = 4,800) According to the relationship between the level of income and monthly family expenses, 31.7% of the patients presented an economic deficit. Only 2.4% of patients spoke an indigenous language and the majority 95% were religious practitioners. Less than 45.1% owned their own home. Most of the households were constructed of masonry and had one to two bedrooms. Three or more people per bedroom lived in 16.9% of the households. Most patients' households had four or more public and intra-household services. Comparing the socio-demographic characteristics according to the gender of the patients, it was found that, in contrast to females, males were older. It was also found that the proportion of people engaged in a paid activity was lower in women. No significant differences were observed for the rest of the variables.

Characterization of the reasons for medical consultation

Table 2 shows the reasons for medical consultation according to the ICD-11 classification of diseases. 47.2% of the users attended the hospital due to neoplasms, with breast cancer being the most frequent in women (21%) and prostate cancer in men (15%). Also, 8.8% of patients presented some endocrine, nutritional, or metabolic disease, of which 19% attended the hospital for alterations related to the lack of good management of diabetes mellitus.

When the socio-demographic characteristics of the patients were compared according to the main reasons for medical consultation, [Table 3] it was observed that, in contrast to those who attended for other causes, patients with neoplasms were on average older; there was a higher proportion of women; of people with poor economic status; of practitioners of some type of religion; of people who resided in houses made of tin or wood and who had two or fewer public and intra-household services. Conversely, it was found that among patients who attended the hospital for metabolic, endocrine, and nutritional diseases, there was a higher proportion of people who did not have their own home compared to those who attended the hospital for other causes. Finally, it was observed that, unlike those who attended the hospital for other causes, patients with diseases of the circulatory system were older and there was a higher proportion of women and people with primary schooling.

Association between sociodemographic factors and main reasons for medical care

After adjusting for confounders, males (adjusted odds ratio [aOR] = 0.55; 95% confidence interval [CI] = 0.42–0.73); those with balanced economic status (aOR = 0.66; 95% CI = 0.48–0.89) and surplus (aOR = 0.52; 95% CI = 0.36-0.74); and patients with home ownership (aOR = 0.71; 95% CI = 0.58–0.85) were less likely to seek care for neoplastic diseases. In contrast, patients older than 40 years, (aOR = 2.70; 95% CI = 1.60–4.52); those who practiced a religion (aOR = 2.25; 95% CI = 1.14–4.43); and those whose households had fewer than three public services (aOR = 4.21; 95% CI = 2.22–8.13) and intra-household services (aOR = 3.99; 95% CI = 1.94–8.22), were more likely to seek medical care for neoplastic diseases [Table 4].

However, patients who owned their homes were less likely to seek medical care for endocrine, nutritional, or metabolic diseases (aOR = 0.45; 95% CI = 0.47–0.74). Moreover, we found that men were 1.76 times more likely to seek medical care for circulatory system diseases compared to women (aOR = 1.76; 95% CI = 1.15–2.66). Finally, patients whose homes were built with masonry were less likely to seek medical care for circulatory system diseases (aOR = 0.61; 95% CI = 0.42–0.89; *P* value ≤0.011) [Table 4].

Discussion

In this study, we found that socio-demographic factors such as age, gender, the practice of religion, the relationship between family income and expenditure, housing and its characteristics, as well as public and intra-household services in the home, are associated with the reason for medical care. To our knowledge, this is the first study in a Mexican population that has analyzed the association between socio-demographic factors and reasons for medical care among patients seen at a public healthcare institution.

In the study population, we observed that cancer represented the main reason for medical care, followed by conditions related to glycemic control and hypertensive crises. These findings are consistent with the epidemiological profile of Mexico, where malignant neoplasms (breast and prostate cancer), diabetes, and hypertension are the main non-communicable diseases affecting the population.

Our findings showed that, compared with women, men were less likely to seek medical care for neoplastic diseases. Although cancer incidence rates vary between countries, it has been widely documented that cancer incidence is higher in men and that they have a higher risk of death. From a biological approach, it has been suggested that testosterone, the main male sex hormone, promotes cell growth, making men more vulnerable

Table 1: Socio-demographic characteristics

Socio-demographic characteristics	Total *n*=1.018 (100%)	Sex		*P*[a]
		Women *n*=678 (66,6%)	Men *n*=340 (33,4)	
Age (in years)				
Median (IQR)	50 (21)	50 (20)	54 (25)	0.001
Marital status, *f* (%)				
With partner	430 (42.2)	263 (38.8)	167 (49.1)	0.002
No partner	588 (57.8)	415 (61.2)	173 (50.9)	
Schooling, *f* (%)				
No schooling	94 (9.4)	61 (9.0)	33 (9.7)	0.061
Primary School	264 (26.0)	178 (23.2)	107 (31.5)	
Secondary School	338 (33.2)	246 (36.3)	92 (27.1)	
High School	202 (19.9)	136 (20.1)	77 (22.6)	
University or higher	119 (11.7)	57 (8.4)	31 (9.1)	
Occupation *f* (%)				
No occupation	176 (17.3)	68 (10.0)	108 (31.8)	0.001
Dedicated to the household	644 (63.3)	493 (72.7)	151 (44.4)	
Paid employment	198 (19.5)	117 (17.3)	81 (23.8)	
Occupation, *f* (%)				
Unpaid work	198 (19.4)	561 (82.7)	259 (76.2)	0.013
Paid work	820 (80.6)	117 (17.3)	81 (23.8)	
Monthly household income (in Mexican pesos)				
Median (IQR)	6.900 (4.800)	6.825 (4.550)	7.825 (4.550)	0.208
Economic status, *f* (%)				
Deficit	323 (31.7)	223 (32.8)	100 (29.4)	0.505
Balance	458 (45.0)	301 (44.4)	157 (46.2)	
Surplus	237 (23.3)	154 (22.7)	83 (24.4)	
Region of Origin, *f* (%)				
State of Mexico	525 (51.6)	235 (34.6)	138 (40.6)	0.179
Mexico City	373 (36.7)	361 (53.3)	164 (48.3)	
Rest of the country	120 (11.7)	82 (12.1)	38 (11.2)	
Religious practice, *f* (%)				
Yes	967 (95.0)	650 (9.9)	317 (93.2)	0.050
No	51 (5.0)	28 (4.1)	23 (6.8)	
Dialect				
Yes	24 (2.4)	19 (2.8)	5 (1.8)	0.273
No	994 (97.6)	659 (97.2)	335 (98.5)	
Type of tenancy				
Owned	460 (45.1)	306 (45.1)	154 (45.3)	0.992
Rented	302 (29.7)	202 (29.7)	100 (29.4)	
Borrowed	256 (25.2)	170 (25.1)	86 (25.3)	
Housing construction material, *f* (%)				
Masonry	829 (81.4)	558 (82.3)	271 (79.7)	0.133
Sheet metal, wood or material from the region	40 (3.9)	30 (4.4)	10 (2.9)	
Mixed	149 (14.6)	90 (13.2)	59 (17.4)	
Number of bedrooms in the household, *f* (%)				
3 or more bedrooms	809 (79.5)	554 (80.2)	265 (77.9)	0.393
1-2 bedrooms	209 (20.5)	134 (19.8)	75 (22.1)	
No. of people per bedroom in the household, *f* (%)				
3 or more people per bedroom	172 (16.9)	121 (17.8)	51 (15.0)	0.331
≤ 2 people per bedroom	846 (83.1)	557 (82.2)	289 (85.0)	
Public services, *f* (%)				
3 or more services	964 (94.7)	645 (95.1)	319 (93.8)	0.210
≤2 services	54 (5.3)	33 (4.9)	21 (6.2)	
Intra-household services, *f* (%)				
3 or more services	974 (95.7)	653 (96.3)	321 (94.4)	
≤2 services	44 (34.3)	25 (3.7)	19 (5.6)	0.475

IQR, interquartile range, [a]*P*-Values testing differences in percentages (Pearson's Chi-square or Fisher's exact test) or medians (Mann–Whitney *U*-test) across the two groups defined by sex

Table 2: Most frequent medical consultations by disease group according to ICD-11

Disease group (ICD-11)	f (%)	Frequently asked questions	f (%)
Some infectious or parasitic diseases	12 (1.2)	Sepsis	6 (50)
Neoplasms	481 (47.2)	Breast cancer	99 (21)
Diseases of the blood or hematopoietic organs	6 (0.6)	Anemia	6 (100)
Endocrine, nutritional or metabolic diseases	90 (8.8)	Glycemic dyscontrol	39 (43)
Mental, behavioral and neurodevelopmental disorders	5 (0.5)	Dementia	3 (60)
Diseases of the nervous system	8 (0.8)	Sclerosis	4 (50)
Diseases of the visual system	2 (0.2)	Retinal disorders	2 (100)
Diseases of the ear or mastoid process	11 (1.1)	Hearing loss	11 (100)
Diseases of the circulatory system	81 (8.0)	Hypertensive dyscontrol	27 (33.3)
Diseases of the respiratory system	47 (6.6)	Rhinitis	14 (29.8)
Diseases of the digestive system	68 (6.7)	Cholecystitis	22 (32.3)
Skin diseases	3 (0.3)	Lupus	3 (100)
Diseases of the musculoskeletal or connective tissue system	28 (2.3)	Arthropathies	15 (53.4)
Diseases of the genitourinary system	51 (5.0)	Kidney disease	20 (39.2)
Pregnancy, childbirth or postpartum period	80 (7.8)	Childbirth care	80 (100)
Trauma, poisoning or other consequences of external causes	45 (4.4)	Fractures	21 (46.6)

to developing cancer.[20,21] In addition, recent evidence has shown that, as men age, some cells tend to lose their Y chromosome altogether; some genes on this chromosome are involved in cell cycle regulation, a process that when faulty leads to tumor development.[22] However, epidemiological data show that men are less likely than women to visit a doctor, to have routine check-ups to monitor their health or to test for early symptoms of cancer.[23,24] Qualitative research shows that many men live their masculinity under the stereotype of "strong man and provider", because of this, illness is seen as a sign of weakness and they try to remain capable to continue to play their role in society; therefore, they are less open to seeking health care and self-care.[25] These data may explain why the frequency of consultations for neoplasms in men in the present study was lower than in women.

However, men were more likely to seek medical care for circulatory system diseases compared to women. Biologically, men have a higher risk of cardiovascular outcomes than women; however, the difference is smaller when women start menopause, because estrogen, one of the main female hormones, acts as a protective factor for cardiovascular risk as it has a vasodilator effect and prevents the formation of calcium deposits in the artery walls.[26] Furthermore, epidemiological studies show that men tend to be more frequently exposed to cardiovascular risk factors such as obesity, and alcohol and tobacco use.[27] In Mexico, adult males have a higher prevalence of overweight and higher consumption of alcohol, tobacco, and cigarettes compared to females.[28-30]

The increased likelihood of hospital attendance due to neoplastic diseases in patients aged >40 years old is consistent with previous research data from developed and developing countries.[31] The increase in cancer incidence with increasing age is most likely due to the accumulation of risk factors for the development of oncological diseases such as tobacco and alcohol consumption, physical inactivity, and consumption of saturated fats.[32] This can be compounded by the loss of efficiency of cellular repair mechanisms that often occur with age.[33,34]

The findings of this research suggest that consultations for malignancies were 2.2 times higher in people who practiced a religion. Religion may act as a *proxy* (indicator) variable for spirituality. Although spirituality is defined and interpreted in a variety of ways, the most common approach sees it as a personal connection to a higher power, which gives meaning to a person's place in the world.[35] Studies have documented that spirituality is often used as a coping mechanism in various situations of vulnerability, allowing people to transcend negative emotions that may arise.[36,37] Therefore, the association we found may be indicative of the use of spirituality as a coping strategy to deal with a possible cancer diagnosis.

Our results suggest that patients with balanced economic status and surplus are less likely to seek medical care for neoplastic diseases. These results are consistent with previous evidence showing that low socioeconomic status is associated with an increased risk of cancer.[38] Low purchasing power may limit access to health services, resulting in a higher proportion of people who are unaware of their pathological condition and are therefore often diagnosed at later stages of cancer. In addition, low socioeconomic status can be a barrier to accessing healthy foods.[39,40] This may play a crucial role, as unhealthy diets increase the risk of different types of cancer.[41]

Patients who owned their homes were less likely to seek medical care for neoplastic diseases and endocrine, nutritional, or metabolic conditions. Furthermore, patients whose homes were built of masonry were less likely to be seen at the hospital for cancer and circulatory system diseases. Our findings are in line with previous data that have shown that people who have difficulty paying their rent or mortgage are less likely to go to the doctor, less likely to have regular check-ups, and more likely to postpone the treatment needed to control the disease process

Table 3: Socio-demographic characteristics according to the most frequent group of diseases

Features	Neoplasms			Endocrine, nutritional, and metabolic diseases			Diseases of the circulatory system		
	Yes	No	*P*	Yes	No	*P*	Yes	No	*P*
Sex, *f* (%)									
Woman	331 (48.8)	347 (51.2)	<0.001	53 (60.9)	625 (67.1)	0.240	46 (6.8)	632 (93.2)	0.007
Man	120 (35.3)	220 (64.7)		34 (39.1)	306 (32.9)		40 (11.8)	300 (88.2)	
Age (in years)									
Median (IQR)	52 (19)	50 (26)	0.011	53 (29)	50 (821)	0.841	54 (20)	50 (22)	0.008
Marital status, *f* (%)									
With partner	249 (55.2)	228 (40.2)	0.142	533 (57.6)	52 (59.8)	0.691	49 (57.0)	539 (57.8)	0.878
No partner	202 (44.8)	339 (59.8)		395 (42.4)	35 (40.2)		37 (43.0)	393 (42.2)	
Schooling, *f* (%)									
No schooling	39 (8.7)	55 (99.7)	0.393	10 (11.5)	84 (9.0)	0.536	7 (8.1)	87 (9.3)	0.028
Primary School	139 (30.8)	146 (25-8)		19 (21.8)	266 (28.6)		37 (43.0)	248 (26.6)	
Secondary School	145 (32.2)	193 (34.0)		27 (31.0)	311 (33.4)		22 (25.6)	316 (33.9)	
High School	87 (19.3)	126 (22.2)		22 (25.3)	191 (20.5)		13 (15.1)	200 (21.5)	
University or higher	41 (9.1)	47 (8.3)		9 (10.3)	79 (8.5)		7 (8.1)	81 (8.7)	
Occupancy, *f* (%)									
Unpaid work	366 (81.2)	454 (80.1)	0.665	67 (77.0)	753 (80.9)	0.383	71 (82.6)	749 (80.4)	0.623
Paid work	85 (18.8)	113 (19.9)		20 (22.9)	178 (9.1)		15 (17.4)	183 (16.6)	
Monthly household income (in Mexican pesos)									
Median (IQR)	6800 (4.100)	7000 (5.100)	0.813	6900 (5000)	6900 (4900)	0.530	6950 (4650)	6650 (4900)	0.522
Economic status, *f* (%)									
Deficit	168 (37.2)	155 (27.3)	0.001	27 (31.0)	296 (31.8)	0.907	29 (33.7)	294 (31.5)	0.699
Balance	196 (43.5)	262 (46.2)		41 (47.1)	417 (44.8)		35 (40.7)	423 (45.4)	
Surplus	87 (19.3)	150 (26.5)		19 (21.8)	218 (23.4)		22 (25.6)	215 (23.1)	
Region of Origin, *f* (%)									
State of Mexico	146 (32.4)	227 40.0)	0.07	31 (35.6)	342 (36.7)	0.831	41 (47.7)	332 (35.6)	0.059
Mexico City	239 (53.9)	286 (50.4)		44 (50.6)	481 (51.7)		39 (45.3)	486 (52.1)	
Rest of the country	66 (14.6)	54 (9.6)		12 (13.8)	108 (11.6)		6 (7.0)	114 (12.2)	
Religious practice, *f* (%)									
Yes	439 (97.3)	528 (93.1)	0.002	83 (8.6)	884 (94.9)	0.555	82 (8.5)	4 (94.9)	0.873
No	12 (2.7)	39 (6.9)		884 (91.4)	47 (5.1)		885 (91.5)	47 (5.1)	
Dialect									
Yes	10 (2.2)	14 (2.5)	0.838	4 (4.6)	20 (2.1)	142	3 (3.5)	21 (2.3)	0.470
No	441 (97.8)	553 (97.5)		83 (95.4)	911 (97.8)		83 (96.5)	911 (97.7)	
Type of tenancy									
Not owned	221 (49.0)	337 (59.4)	0.05	61 (70.1)	497 (53.4)	0.003	52 (60.5)	506 (54.3)	0.271
Owned	230 (51.0)	230 (40.6)		26 (29.9)	434 (46.6)		34 (39.5)	426 (45.7	
Housing construction material, *f* (%)								2	
Masonry	354 (78.5)	475 (83.8)	0.014	76 (87.4)	753 (80.8)	0.188	68 (79.1)	761 (81.6)	0.629
Foil or wood	97 (21.5)	92 (16.2)		11 (12.6)	78 (19.2)		18 (20.9)	171 (18.4)	
Number of bedrooms in the household, *f* (%)									
3 or more bedrooms	368 (77.9)	441 (81.6)	0.134	66 (79.8)	743 (75.9)	0.384	68 (79.5)	741 (79.5)	0.924
1-2 bedrooms	83 (18.4)	126 (22.2)		21 (20.2)	188 (24.1)		18 (20.9)	191 (20.5)	
People per bedroom in the household, *f* (%)									
3 or more people per bedroom	80 (17.7)	92 (16.2)	0.522	161 (17.3)	11 (12.6)	0.268	15 (17.4)	157 (16.8)	0.888
≤2 people per bedroom	371 (82.3)	475 (83.8)		76 (87.4)	770 (82.7)		71 (82.6)	775 (83.2)	
Public services, *f* (%)									
3 or more services	410 (90.9)	554 (97.7)	<0.001	84 (96.6)	880 (94.5)	0.419	84 (97.7)	880 (94.4)	0.198
≤2 services	41 (9.1)	13 (2.3)		3 (3.4)	51 (5.5)		2 (2.3)	52 (5.6)	
Intra-household services, *f* (%)									
3 or more services	418 (92.7)	556 (98.1)	<0.001	84 (96.5)	890 (95.6)	0.675	85 (98.8)	880 (95.4)	0.132
≤2 services	33 (7.3)	11 (1.9)		3 (3.5)	41 (3.4)		1 (1.16)	43 (4.6)	

IQR, interquartile range, [a]*P*-Values testing differences in percentages (Pearson's Chi-square or Fisher's exact test) or medians (Mann-Whitney *U*-test)

they are experiencing.[42-45] This may be because people are less likely to prioritize their health and more likely to focus on work activities that allow them to keep a home for themselves and their families.[13]

Table 4: Adjusted odds ratios of the relationship between socio-demographic factors and main reasons for medical consultation

Features	Neoplasms		Endocrine, nutritional, and metabolic diseases		Diseases of the circulatory system	
	aOR (95% CI)	*P*	aOR (95% CI)	*P*	aOR (95% CI)	*P*
Sex						
Woman	Ref.		Ref.		Ref.	
Man	0.55 (0.42 – 0.73)	<0.001	1.32 (0.85 – 2.12)	0.227	1.76 (1.15 – 2.86)	0.014
Age (in years)						
<40 years	Ref.		Ref.		Ref.	
≥40 years	2.70 (1.60 – 4.51)	<0.001	1.01 (0.65 – 1.67)	0.862	1.62 (0.65 – 1.67)	0.358
Marital status						
With partner	Ref.		Ref.		Ref.	
No partner	0.97 (0.60 – 1.02)	0.097	1.11 (0.71 – 1.75)	0.635	1.03 (0.63 – 1.66)	0.871
Schooling						
No schooling	Ref.		Ref.		Ref.	
Primary School	1.05 (0.88 – 2.35)	0.140	0.54 (0.23 – 1.25)	0.151	1.03 (0.81 – 4.53)	0.137
Secondary School	1.00 (0.62 – 1.62)	0.971	0.75 (0.35 – 1.76)	0.487	0.93 (0.38 – 2.29)	0.887
Baccalaureate and university	1.01 (0.64 – 1.68)	0.865	0.89 (0.47 – 2.17)	0.950	0.95 (0.39 – 2.36)	0.925
Occupation						
Unpaid work	Ref.		Ref.		Ref.	
Paid work	1.01 (0.64 – 1.68)	0.865	0.89 (0.47 – 2.17)	0.950	0.95 (0.39 – 2.36)	0.925
Monthly household income (in Mexican pesos)						
>7,000	Ref.		Ref.		Ref.	
≤7,000	1.05 (0.76 – 1.46)	0.727	1.03 (0.64 – 1.65)	0.890	0.83 (0.45 – 1.50)	0.539
Economic status, *f* (%)						
Deficit	Ref.		Ref.		Ref.	
Balance	0.66 (0.49 – 0.89)	0.007	1.02 (0.64 –1.80)	0.778	0.84 (0.49 – 1.41)	0.516
Surplus	0.52 (0.35 – 0.74)	<0.001	0.91 (0.47 – 1.74)	07.84	1.01 (0.63 – 2.20)	0.600
Practice of any religion						
No	Ref.		Ref.		Ref.	
Yes	2.25 (1.14 – 4.43)	0.018	1.02 (0.38 –3.16)	0.859	1.09 (0.37 – 3.17)	0.862
Type of tenancy						
Not owned	Ref.		Ref.		Ref.	
Owned	0.71 (0.58 – 0.85)	0.008	0.45 (0.27 –0.74)	0.002	0.63 (0.37 – 3.17)	0.862
Construction material of the household						
Foil or wood/mixed	Ref.		Ref.		Ref.	
Masonry	0.68 (0.49 – 0.94)	0.023	0.96 (0.70 – 1.32)	0.820	0.61 (0.42 – 0.89)	0.011
Number of bedrooms in the household						
3 or more bedrooms	Ref.		Ref.		Ref.	
1-2 bedrooms	0.98 (0.68 – 1.41)	0.948	1.24 (0.72 – 2.41)	0.423	1.06 (0.69 – 1.92)	0.738
No. of people per bedroom in the household						
3 or more people per bedroom	Ref.		Ref.		Ref.	
≤2 people per bedroom	0.84 (0.60 – 1.19)	0.352	0.97 (0.70– 1.33)	0.860	0.83 (0.46 – 1.53)	0.537
Public services						
3 or more services	Ref.		Ref.		Ref.	
≤2 services	4.21 (2.22 – 8.13)	<0.001	0.95 (0.19.–2.14)	0.475	0.98 (0.09 – 1.72)	0.218
Intra-household services, *f* (%)						
3 or more services	Ref.		Ref.		Ref.	
≤2 services	3.99 (1.94 – 8.22)	<0.001	1.02 (0.64.–2.75)	0.744	1.07 (1.12 – 2.81)	0.145

aOR, adjusted odds ratio

Limitations and strengths

Our results have some limitations that need to be considered when interpreting them. The cross-sectional design of this research does not allow us to establish a temporal sequence between sociodemographic factors with the reasons for medical care. Thus, the estimated associations are not causal and should be interpreted with caution, although the relationship between socio-demographic factors and the state of health of individuals has been widely documented in previous studies. The present research was carried out in a public healthcare institution of the Mexican Ministry of Health. The users of these institutions belong to the informal sector of the economy, underemployed,

and unemployed, as well as their families and dependents. In contrast, workers in the formal sector of the economy (active and retired) and their families are the beneficiaries of social security institutions.[19] Data show that the beneficiaries of these institutions have higher educational levels, better housing, and higher incomes compared to the users of institutions of the Ministry of Health.[46] Consequently, it is not possible to ensure that this study represents the different social strata that exist in Mexico. Nevertheless, with the data obtained, it was possible to appreciate the social inequalities experienced by a particular group of the population and how these impact health status. Similar data have been observed in studies carried out in high-income countries with low inequality, where the social gradient in health has also been observed.

Despite the limitations, this study has important strengths. For the statistical analyses, logistic regression models were used to estimate the odds ratio between the variables of interest; thus, in contrast to some previous studies, we were able to estimate the magnitude and strength of the association of reasons for medical consultation with socio-demographic factors. Furthermore, the statistical models were adjusted for potential confounders, making it highly unlikely that the results obtained are affected by confounding bias. Information on socio-demographic factors was obtained from the socio-economic survey that is part of the patient's medical records, which is routinely applied using a standard form by trained social work staff, who were blinded to the hypothesis of this study. It is therefore unlikely that the findings were the result of differential measurement bias.

Conclusion

The results of the present study suggest that age, gender, religious practice, economic status, housing, and public and intra-household services are associated with the reasons for medical care among Mexican patients seen in a public health institution. These findings add to the existing literature that shows the relevance of considering not only biological aspects, but also environmental, economic, and psychosocial factors to understand how diseases are presented and distributed in the population.

In this sense, social health workers play an important role in the identification of the social determinants of health through the application and analysis of the socio-economic study, providing elements that, on the one hand, help the medical team to know the risk factors involved in the health-disease process of patients and, on the other hand, to relate the socio-economic characteristics of patients with the disease they have, to assess the possibilities of recovery that the environment and the family offer.

The position of a subject in society arises from various influencing circumstances, such as socioeconomic, political, and cultural systems. Health inequities can arise when these systems result in a systematically unequal distribution of power, prestige, and resources between different social groups, affecting them negatively. Therefore, strategies for the prevention, management, and control of chronic and infectious diseases must consider social inequalities, addressing the determinants of health to generate a significant impact on the health of the population. Consequently, social determinants must be addressed during the training and updating process of the multidisciplinary health team.

Acknowledgments

To the entire social work team of Hospital Juárez de México, for their dedication and effort to improve the health of the Mexican population, especially to María Guadalupe Urueta Robledo.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Braveman P, Gottlieb L. The social determinants of health: It's time to consider the causes of the causes. Public Health Rep 2014;129:19–31.
2. Barboza-Solís C, Sáenz-Bonilla JP, Fantin R, Gómez-Duarte I, Rojas-Araya K. Bases teórico-conceptuales para el análisis de inequidades sociales en salud: Una discusión. Odovtos-Int J Dent Sc 2020;22:11–21.
3. Bonaccio M, Di Castelnuovo A, de Gaetano G, Iacoviello L. Socioeconomic gradient in health: Mind the gap in 'invisible' disparities. Ann Transl Med 2020;8:1200.
4. Marmot MG. Understanding social inequalities in health. Perspect Biol Med 2003;46:S9-23.
5. Hahn RA. What is a social determinant of health? Back to basics. J Public Health Res 2021;10:2324.
6. Ravallion M. Income inequality in the developing world. Science (New York, NY) 2014;344:851–5.
7. Silva-Peñaherrera M, Lopez-Ruiz M, Merino-Salazar P, Gómez-García AR, Benavides FG, *et al.* Health inequity in workers of Latin America and the Caribbean. Int J Equity Health 2020;19:109.
8. Faria L, Alvarez REC, Santos LA de C. Socioeconomic inequality in Latin America and the Caribbean: The post-pandemic future for the training of health professionals. Hist Cienc Saude Manguinhos 2023;30:e2023029.
9. Agudelo-Botero M, Dávila-Cervantes CA, Velasco-Calderón O, Giraldo-Rodríguez L. Divergences and gaps in life expectancy and health-adjusted life expectancy in Mexico: Contribution analysis of the Global Burden of Disease Study 2019. PLoS One 2023;18:e0293881.
10. Forchuk C, Dickins K, Corring DJ. Social determinants of health: Housing and income. Healthc Q 2016;18:27–31.
11. Armenti K, Sweeney MH, Lingwall C, Yang L. Work: A social determinant of health worth capturing. Int J Environ Res Public Health 2023;20:1199.
12. Moure-Eraso R, Flum M, Lahiri S, Tilly C, Massawe E. A review of employment conditions as social determinants of health part II: The workplace. New Solut 2006;16:429–48.
13. Rolfe S, Garnham L, Godwin J, Anderson I, Seaman P, Donaldson C. Housing as a social determinant of health

and wellbeing: Developing an empirically-informed realist theoretical framework. BMC Public Health 2020;20:1138.

14. The Lancet. Housing: An overlooked social determinant of health. Lancet 2024;403:1723.
15. Ingleby D. Ethnicity, migration and the 'social determinants of health' agenda. Psychosoc Interv 2012;21:331–41.
16. National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Population Health and Public Health Practice; Roundtable on the Promotion of Health Equity. Immigration and the Social Determinants of Health. In: Immigration as a Social Determinant of Health: Proceedings of a Workshop. National Academies Press (US). 2018. Available from: https://www.ncbi.nlm.nih.gov/books/ NBK535940/. [Last accessed on 2024 May 28].
17. Miani C, Wandschneider L, Niemann J, Batram-Zantvoort S, Razum O, *et al.* Measurement of gender as a social determinant of health in epidemiology-A scoping review. PLoS One 2021;16:e0259223.
18. Phillips SP. Defining and measuring gender: A social determinant of health whose time has come. Int J Equity Health 2005;4:11.
19. Gómez-Dantés O, Flamand L, Cerecero-García D, Morales-Vazquez M, Serván-Mori E. Origin, impacts, and potential solutions to the fragmentation of the Mexican health system: A consultation with key actors. Health Res Policy Syst 2023;21:80.
20. Jackson SS, Marks MA, Katki HA, Cook MB, Hyun N, Freedman ND, *et al.* Sex disparities in the incidence of 21 cancer types: Quantification of the contribution of risk factors. Cancer 2022;128:3531–40.
21. Nicholas DR. Men, masculinity, and cancer: Risk-factor behaviors, early detection, and psychosocial adaptation. J Am Coll Health 2000;49:27–33.
22. Dirican CD, Nelson PS. Y chromosome loss and implications for oncology. Mol Cancer Res 2024;22:603-12.
23. Bertakis KD, Azari R, Helms LJ, Callahan EJ, Robbins JA. Gender differences in the utilization of health care services. J Fam Pract 2000;49:147–52.
24. Wang Y, Hunt K, Nazareth I, Freemantle N, Petersen I. Do men consult less than women? An analysis of routinely collected UK general practice data. BMJ Open 2013;3:e003320.
25. Paiva Neto FT de, Sandreschi PF, Dias MS de A, Loch MR. Dificultades del autocuidado masculino: Discursos de hombres participantes en un grupo de educación para la salud. Salud Colectiva 2020;16:e2250.
26. Iorga A, Cunningham CM, Moazeni S, Ruffenach G, Umar S, Eghbali M. The protective role of estrogen and estrogen receptors in cardiovascular disease and the controversial use of estrogen therapy. Biol Sex Differ 2017;8:33.
27. Weidner G. Why do men get more heart disease than women? An international perspective. J Am Coll Health 2000;48:291–4.
28. Barrera-Núñez DA, Rengifo-Reina HA, López-Olmedo N, Barrientos-Gutiérrez T, Reynales-Shigematsu LM. Cambios en los patrones de consumo de alcohol y tabaco antes y durante la pandemia de Covid-19. Ensanut 2018 y 2020. Salud Pública Méx 2022;64:137–47.
29. Campos-Nonato I, Galván-Valencia Ó, Hernández-Barrera L, Oviedo-Solís C, Barquera S. Prevalencia de obesidad y factores de riesgo asociados en adultos mexicanos: Resultados de la Ensanut 2022. Salud Pública Méx 2023;65:s238–47.
30. Ramírez-Toscano Y, Canto-Osorio F, Carnalla M, Oviedo-Solís C, Barquera S. Patrones de consumo de alcohol en adolescentes y adultos mexicanos: Ensanut Continua 2022. Salud Publica Mex 2023;65:s75–s83.
31. White MC, Holman DM, Boehm JE, Peipins LA, Grossman M, Henley SJ. Age and cancer risk. Am J Prev Med 2014;46:S7-15.
32. Newell GR, Spitz MR, Sider JG. Cancer and age. Semin Oncol 1989;16:3–9.
33. Berben L, Floris G, Wildiers H, Hatse S. Cancer and aging: Two tightly interconnected biological processes. Cancers (Basel) 2021;13:1400.
34. Havas A, Yin S, Adams PD. The role of aging in cancer. Mol Oncol 2022;16:3213–9.
35. Castellanos MB, Martins MDS, Posada-Bernal S. Espiritualidad y estilos de vida. Cuestiones Teológicas 2020;47:102–18.
36. Souza MC dos S, Jaramillo RG, Borges M da S. Confort de los pacientes en cuidados paliativos: Una revisión integradora. Enferm Glob 2021;20:420–65.
37. King JJ, Badger TA, Segrin C, Thomson CA. Loneliness, spirituality, and health-related quality of life in hispanic english-speaking cancer caregivers: A qualitative approach. J Relig Health 2024;63:1433–56.
38. Singh GK, Jemal A. Socioeconomic and racial/ethnic disparities in cancer mortality, incidence, and survival in the United States, 1950–2014: Over six decades of changing patterns and widening inequalities. J Environ Public Health 2017;2017:2819372.
39. Clegg LX, Reichman ME, Miller BA, Hankey BF, Singh GK, Lin YD, *et al.* Impact of socioeconomic status on cancer incidence and stage at diagnosis: Selected findings from the surveillance, epidemiology, and end results: National Longitudinal Mortality Study. Cancer Causes Control 2009;20:417–35.
40. Sandström N, Johansson M, Jekunen A, Andersén H. Socioeconomic status and lifestyle patterns in the most common cancer types-community-based research. BMC Public Health 2023;23:1722.
41. Ubago-Guisado E, Rodríguez-Barranco M, Ching-López A, Petrova D, Molina-Montes E, Amiano P, *et al.* Evidence update on the relationship between diet and the most common cancers from the European Prospective Investigation into Cancer and Nutrition (EPIC) study: A systematic review. Nutrients 2021;13:3582.
42. Fan Q, Nogueira L, Yabroff KR, Hussaini SMQ, Pollack CE. Housing and cancer care and outcomes: A systematic review. J Natl Cancer Inst 2022;114:1601–18.
43. Mason KE, Alexiou A, Li A, Taylor-Robinson D. The impact of housing insecurity on mental health, sleep and hypertension: Analysis of the UK Household Longitudinal Study and linked data, 2009-2019. Soc Sci Med 2024;351:116939.
44. Mosley-Johnson E, Walker RJ, Thakkar M, Campbell JA, Hawks L, Pyzyk S, *et al.* Relationship between housing insecurity, diabetes processes of care, and self-care behaviors. BMC Health Serv Res 2022;22:61.
45. Stahre M, VanEenwyk J, Siegel P, Njai R. Housing insecurity and the association with health outcomes and unhealthy behaviors, Washington State, 2011. Prev Chronic Dis 2015;12:E109.
46. Vargas DS, Sánchez YGR. Perfiles sociodemográficos de la población ahorradora y acreditada en México, 2018. RAN 2021;7:205-20.