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Socio-demographic Effects on Enrollment in the Social Health Insurance Program in Nepal: A Case of Kathmandu Metropolitan City Ward No. 30

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ABSTRACT

Background: *Social Health Insurance (SHI) coverage in Nepal remains sort of low despite national efforts toward universal health coverage. This study examined demographic influences on SHI enrollment in Ward 30 of Kathmandu Metropolitan City.*

Methods: *Secondary aggregate data (N=1,379 valid enrollees) were pretty much obtained from the Urban Health Promotion Centre's SHI promotion campaign conducted in mid-July 2024. descriptive statistics and chi-square goodness-of-fit tests were used to compare enrollee distributions by age, gender, and marital status against 2021 census proxies for Kathmandu Metropolitan City.*

Result:*The study used secondary data, which it collected from 1,379 people who lived in Ward 30, Kathmandu, during mid-July 2024 and found that 83.8% of them enrolled in the Social Health Insurance (SHI) program. The enrollment rate for females reached 90.0%, whereas males showed a lower rate of 74.9% ($\chi^2 = 56.706$, $df = 1$, $p < 0.001$). The enrollment rate reached its highest point of 96.3% among people who belonged to the 56–65 years age group, while only 62.0% of people from the 18–25 years age group enrolled ($\chi^2 = 135.169$, $df = 5$, $p < 0.001$). The enrollment rates for widowed respondents reached 87.6% and married respondents reached 85.7%, while single respondents reached only 61.8% ($\chi^2 = 48.774$, $df = 2$, $p < 0.001$). The sample group showed a higher representation of older adults who entered marriage than the actual population, which maintained an almost equal gender distribution and contained many people between 15 and 59 years of age.*

Conclusion: *The study found that SHI enrollment in Ward 30 depends on three demographic factors, which include gender, age and marital status. The study shows that women and older people, and married or widowed individuals, show higher participation rates because they have greater health requirements, which result from their family obligations. The study shows that three groups, which include men, young people and single people, show lower enrollment rates because they create participation barriers. The country needs to execute targeted campaigns which consider gender and age demographics to create better health coverage for its population while working towards complete health coverage for all citizens. The Urban Health Promotion Centre campaign, which operated in specific local areas, achieved higher participant rates than the national average, which stands at 10 to 13 per cent.*

Keywords

Social Health Insurance (SHI), Enrollment trends, demographic factors, Age influence, Health policy, Kathmandu Metropolitan City

Background

Nepal is a diverse country in terms of geography, culture, and social status. Health systems are being strengthened, especially for the underprivileged and vulnerable. The introduction of a Social Health Insurance scheme has been a significant turning point in this process. The Nepalese government legally introduced Universal Health Care (UHC) to all residents in 2015. The goal was to ensure that everyone had access to healthcare at any time without facing financial hardship. (Acharya et al., 2019) The SHI program, which has historically dominated Nepal's healthcare funding system and contributed to financial obstacles for many households, is in many respects a significant departure from out-of-pocket payment. The Social Health Insurance scheme in Nepal is a mandated project where the risk is pooled with resources among a wide demographic group. Hence, it protects members from financial concerns owing to health conditions. This may consist of practically all health services, including both in and out-patient facilities, emergency services, and some prescribed pharmaceuticals. This is particularly significant in a nation like Nepal, where there have always existed geographical, economic, and socio-economic hurdles to healthcare. (Paudel, 2019).

Being the nation's capital and largest city, Kathmandu Metropolitan City offers a unique set of circumstances for the SHI program. More precisely, Ward No. 30 is an area that exemplifies the heterogeneous character of urban life in Kathmandu, where a wide range of diverse socioeconomic classes cohabit within a relatively constrained geographic area. There are wealthy and poor families residing side by side in Ward No. 30. Ward No. 30's urban environment presents both opportunities and difficulties for the SHI program. The convenience of getting health care services is theoretically increased by being closer to health facilities, as opposed to rural locations. However, socioeconomic disparities within the ward can mean that the SHI program is applied unequally, benefiting the wealthier households more than the poorer ones. Lastly, issues with urban poverty, such as unreliable income from informal work, may further jeopardize people's capacity to take part in and profit from the SHI program (Ghimire et al., 2019).

Insufficient infrastructure, a scarcity of medical experts, and unequal access to treatments, particularly in rural and isolated regions, are straining Nepal's health system. Many Nepalis are still exposed to major health risks, even though the country has made progress in the last several years in key health indices, particularly maternal and child health. These risks are frequently exacerbated by poverty and illiteracy. In this context, SHI was implemented as a policy intervention to address a portion of the institutional issues that resulted in access to essential health services and financial protection against medical expenses. (Sharma et.al, 2022)

The SHI program aims to reduce household financial burdens, increase access to healthcare services, and enhance overall health outcomes. This is crucial in a nation

like Nepal where many families are living in poverty as a result of out-of-pocket medical expenses. (Mishra et al., 2015) Therefore, it is stated that the SHI program spreads risks and pools resources to offer a more feasible method of funding healthcare, thereby improving health outcomes and increasing fairness in access to care.

There have been obstacles as well as excitement around the SHI program's implementation in Kathmandu, notably Ward No. 30. The initiative has received recognition for its ability to lower financial barriers and increase access to healthcare. However, there have been issues with the program's general sustainability, the quality of services, and the appropriateness of the coverage offered (Pokharel & Silwal, 2018). A significant obstacle in executing the SHI program in a city such as Kathmandu is making certain that all qualified citizens, especially those residing in informal settlements or underprivileged areas, are reached. Furthermore, there might be a lot of administrative work involved in running the program in a place as diverse and inhabited as Ward No. 30. Both excitement and challenges have surrounded the SHI program's implementation in Kathmandu, particularly in Ward No. 29. The program's capacity to reduce financial obstacles and broaden access to healthcare has won praise. The program's overall viability, the caliber of the services provided, and the suitability of the coverage provided have all encountered problems, though (Pokharel & Silwal, 2018). A major challenge in implementing the SHI program in a metropolis like Kathmandu is guaranteeing that all eligible citizens particularly those living in impoverished areas or informal settlements are reached. Furthermore, managing the program in a community as diverse and populous as Ward No. 30 may require a significant amount of administrative work. The socioeconomic characteristics of the area have a direct bearing on the SHI program's success in Kathmandu, particularly in ward number 30. Traditionally, variables including income, prospective members' educational attainment, and their awareness of the program have an impact on the demand for enrollment in the health insurance system. Research indicates that low-income households are less likely to enroll in or receive coverage from any health insurance program due to their inability to pay premiums or lack of awareness of the benefits (Timsinaet et al, 2024).

These factors socioeconomic situations, in particular, in Ward No. 30 can be characterized in terms of who benefits from the SHI program. The wealthy will be fully aware of the plan and able to pay the premiums, but their less fortunate peers won't be able to due to financial hardships. This could further result in a situation where the SHI system is benefiting people who are already better off, which would be the opposite of what is intended to happen that is, eliminating health inequities. (Paudel, 2019).

A significant factor in the success of the SHI program is how well-insured individuals use health care. Enrollment in SHI should ideally be linked to a rise in the usage of health services

since it lowers some financial obstacles. The actual usage of services is, however, influenced by a wide range of other variables, including the quality and accessibility of care, the perception of program efficacy, and cultural perspectives on healthcare. Even if Kathmandu Ward No. 30's health services are easier to get to than in a rural area, this may not be enough to improve health outcomes on its own. Even if a person has insurance, issues like crowding, lengthy wait times, and inconsistent care quality can discourage them from using the services that are offered. Moreover, there can be a general skepticism of the healthcare system, which would reduce the SHI program's effectiveness even more (Sharma et al., 2022).

The main objectives of the SHI program are to provide households with financial security by lowering their out-of-pocket medical expenses. In theory, individuals won't be scared to seek care when they need it, which could lead to better health results. It is unclear, nevertheless, exactly how the SHI program affects health and financial outcomes in Kathmandu, especially in Ward No. 30. Numerous studies indicate that while the SHI program has helped many households save money out of their own pockets, the impact on financial safety has been uneven. Some households are nonetheless forced to pay for expensive healthcare because their insurance does not cover them or because of issues like unofficial payments to healthcare providers. Measuring the impact on health outcomes is particularly difficult since they rely on a multitude of variables related to the standard of care received and the population's prior health. (Pokharel & Silwal, 2018)

The SHI program has been successful in Kathmandu in general and in Ward No. 30 in particular because of government policies and public perception. It would be challenging to maintain that the government's commitment to funding the SHI program and the effectiveness of policy implementation are sufficient, despite the fact it is simple to accept that government support for funding and policy implementation gives this program lasting power (Bharati et al., 2025). It's also crucial how the SHI program is viewed by the general public. People may not want to enroll in or use insurance-covered services if they believe it is unproductive or have negative experiences with it. This may result in declining program effectiveness and enrollment rates. The effectiveness of the SHI program will therefore always be greatly influenced by public perception, particularly in Ward No. 30 given its multicultural population's varying degrees of faith in the healthcare system (Acharya et al., 2019). Though there are significant obstacles to be addressed, such as those significant policy issues about universal coverage for all eligible residents, maintaining the quality of care, and managing socioeconomic variables that affect enrollment and utilization of health services, SHI in Kathmandu, more specifically in Ward No. 30, holds the promise of improved access to healthcare and reduced financial barriers. There are still more areas that could be improved, such as program public knowledge, insurance-covered quality of care, sufficient budget, and effective implementation. In addition, the program must be continuously

monitored and evaluated to spot any areas where it falls short of its objectives and make the required corrections. (Ghimire et al., 2021)

A major step in achieving the aim of providing all Nepali residents with universal health coverage and improved health outcomes is the Social Health Insurance program. In Kathmandu's Ward No. 30, it might make health care more affordable.

Statement of the Problem

Despite the SHI program's introduction in Nepal, questions are raised about the program's efficiency and accessibility due to differences in the insurance program's enrolment rates for certain demographic groups. According to the W.H.O.(2015) and Sharma et al. (2020), understanding the demographic drivers of SHI enrollment by characteristics like age, gender, marital status, etc., is highly important for increasing participation rates and guaranteeing equity in access to healthcare services. However, very few research have addressed the demographic factors that influence a group's or region's decision to join the SHI program. Acharya et al.(2019) stated that the purpose of the study is to ascertain how age, gender, and marital status relate to the 2018 SHI membership rates. Additionally, it forecasts demographic trends and SHI membership rates, revealing which groups are most likely to join and, consequently, highlighting issues in those groups with low involvement. By doing this, it will support the creation of focused programs meant to increase SHI enrollment across all demographic groups.

The SHI program has received significant funding, and given its critical role in attaining health coverage for all in Nepal, an urgent need exists to evaluate its efficacy in particular metropolitan environments. The results of studies on the program's effects on the various Ward No. 30 demographic groups as well as the variables affecting service satisfaction, enrolment, and use are essential for developing new implementation strategies and policy changes. Although a lot of research has been done on the Social Health Insurance program in Nepal, the majority of it has been done at the national level or in rural areas, leaving a gap in our knowledge of the program's efficacy in urban areas. In particular, there hasn't been enough research done on how the SHI program operates in diverse, highly populated urban wards like Kathmandu's Ward No. 30. (Acharya et al., 2021).

Numerous difficulties with the SHI program's financial protection, service utilization, and enrollment hurdles have been brought to light by earlier research. However, difficulties and dynamics in urban environments, where socioeconomic disparities are higher and healthcare requirements are more complex, were not particularly examined in the majority of these studies. Moreover, a dearth of empirical data generally exists regarding the influence of SHI programs on health outcomes and the fairness of healthcare access in these metropolitan settings. Additionally, the literature, in this case, tends to generalize

across various regions and population groups without addressing the particular difficulties faced by citizens of urban wards such as Ward No. 30, where the successful implementation of health insurance schemes is likely to be complicated by the presence of informal settlements, a diversity of incomes, and uneven access to healthcare. This imposes a crucial need for studies that evaluate the efficacy of the SHI program, which is situated in urban environments and takes into account the difficulties and experiences that various socioeconomic groups encounter. This study will assess the SHI program in its entirety, taking into account enrollment, effectiveness in service utilization, protection against financial loss, and overall health outcomes of insured individuals. As a result, it will offer valuable information that will inform future improvements to the SHI program, ultimately contributing to Nepal's achievement of UHC targets (Acharya et al.,2023)

Objectives

- To determine the relationship between age, gender, and marital status and the SHI program enrollment rate
- To examine demographic patterns in SHI membership rates by gender, marital status, and age group.

Research Questions

- What role does age have in one's chances of getting into the SHI program?
- What connection exists between the number of people enrolled in the SHI program and their marital status?
- How much does a person's gender affect their ability to enroll in this SHI program?
- What patterns exist in the age distribution of SHI program registrants?
- How are married, single, and SHI enrollment rates significantly different from one another?

Limitations

This could lessen the findings' applicability to other parts of Nepal or other demographic groups, as the study will only concentrate on one single location Kathmandu Metropolitan City, Ward No. 30.

Since the data is based on self-reporting from surveys and interviews, self-reporting biases like social desirability bias in which respondents either overreport or underreport information that influences their enrollment status or demographic information would inevitably surface.

First off, there is inadequate evidence to show the causal relationship between demographic characteristics and SHI enrollment because this is a cross-sectional study with data only collected once, at a certain period in time.

Age, gender, and marital status are the only three independent variables taken into account in this study. The absence of variables that could potentially have an impact, such as income, education, and knowledge of the SHI program, could have an impact on the outcomes.

Limited sample size may impair the statistical analysis's power, produce estimates that are less trustworthy, or fail to identify important associations.

Because of the great diversity and multiethnic nature of these communities, it may not be possible for the study to adequately capture the cultural practices and beliefs that influence SHI enrollment.

Delimitations

Purposefully ignoring other variables that can affect enrollment rates, such as income, education, or health status, in favour of concentrating on the impact of age, sex, and marital status on SHI enrollment.

To conduct a thorough analysis of that specific location, this research is limited to only Kathmandu Metropolitan City Ward No. 30 and intentionally leaves out other regions or wards.

The study solely looks at SHI enrollment numbers; it ignores satisfaction levels, wider health outcomes, and the calibre of care obtained through the SHI program.

The technique employs a mixed-methods approach, with a primary emphasis on the quantitative side. The inclusion of qualitative data serves to bolster the discussion of participants' experiences and perceptions.

It is not focused on changes over time or the long-term effects of demographic factors on SHI enrollment; rather, it is undertaken at a single moment in time, focusing on present enrollment rates and trends.

The sample is limited to residents of Ward No. 30 who meet the eligibility requirements for the study. Individuals who are not relevant for the study due to their age or marital status, such as children, or who come from different marital backgrounds, such as widowhood or divorce, will not be included in the study design.

Literature Review

Decisions on whether to enroll in health insurance are significantly influenced by demographic factors, including age, gender, and marital status. Scholarly research has demonstrated that an individual's likelihood of receiving coverage under any insurance program, including SHI programs, is significantly influenced by demographic factors. Enrollment rates, for example, are impacted by age differences in the need for healthcare services. Because of their perceived need for insurance coverage and higher health risks, older people may enrol at higher rates (Bhusal & Sapkota, 2021).

Gender is a significant factor in health insurance decisions as well. Research has shown that women are more likely than men to enroll in health insurance plans, perhaps due to their greater inclination to use medical services. Another significant issue is marital status, which can influence enrollment decisions because married people frequently have different needs for health insurance and financial considerations than unmarried people (Giri, 2025).

Determining the gaps or inequities that may be prevalent in the program will be made easier by looking at the trends and patterns in SHI enrollment about demographic parameters. According to Acharya, et al. (2019), age-related trends, for instance, typically show that younger persons tend to not enroll in health insurance plans due to a perception of their relative invulnerability

or lack of need for healthcare. On the other hand, as health problems tend to arise more frequently as people age, higher enrollment rates might be a sign of advanced age (Bhusal &Sapkota, 2021). Gender differences in health-seeking behaviour are indicated by gender trends in health insurance plan enrollment. For example, enrollment rates may be higher among women because of their reproductive health needs and increased awareness of the need to engage more actively with preventive health services. The SHI enrollment trend may also be influenced by a person's marital status; research suggests that married people enrol at higher rates because they share financial planning and decision-making responsibilities (Giri, 2025).

Even though demographics are the study's primary emphasis, it acknowledges that individual characteristics within the larger framework of socioeconomic and cultural dimensions also have a role in determining SHI membership. Higher-income and education levels, for example, are typically correlated with insurance enrollment; that is, they increase the likelihood of enrolling in health insurance programs. Finally, since cultural practices and beliefs shape attitudes regarding insurance and health-seeking behavior, they may also have an impact on the motivation to enroll. (Acharya et al., 2021).

Many variables can act as impediments to SHI enrollment, especially for certain demographic groups. Thapa and Basnet (2019) listed a few of these concerns as mistrusting the healthcare system overall, problems related to affordability, or a lack of knowledge or comprehension of the SHI program. In a similar vein, it has been suggested that cultural and gender conventions influence people's choices regarding whether or not to sign up for health insurance plans. Because of this, specific interventions and policies that target various demographic groups with their unique needs and circumstances are needed (World Health Organisation, 2015)

All participating countries must comprehend demographic characteristics concerning SHI enrollment to enhance participation rates and guarantee equitable access to services for all. Therefore, customized approaches are needed to guarantee SHI membership across various age, gender, and marital status groups. Enhancing program reach and effectiveness also involves addressing cultural and socioeconomic barriers and raising awareness of the benefits that individuals can receive from participating in SHI. All participating countries must comprehend demographic characteristics concerning SHI enrollment to enhance participation rates and guarantee equitable access to services for all (Ghimire, et al., 2019).

This study used bivariate analysis to examine the effects of age, gender, and demographic characteristics on the enrolment rates for health insurance. The quantitative study, which made use of data from a nationwide survey, showed that, on average, older age groups enroll in health insurance plans at higher rates than younger age groups. Age

is the most important factor for enrolling in health insurance, as seen by the lack of gender-specific enrollment variances. It was determined that an individual's age increases their health risk and, thus, their enrolment in health insurance. This study's shortcomings include the absence of information on income and marital status, which could have affected the inclusion rate (Ghimire et al., 2024).

The goal of this study was to investigate how gender affects health insurance enrollment. In comparison to their male counterparts, women are more inclined to participate in health insurance programs, according to a cross-sectional analysis of the program's participants. This finding suggests that gender influences enrollment decisions significantly and generally points to more female participation. In actuality, these restrictions apply to both its geographic breadth and prejudice. The second, which the study has also not addressed, is the influencing factors related to socioeconomic factors, and hence enrollment rates. (Ghimiri etal., 2024),

The purpose of this research was to evaluate the impact of marital status on health insurance enrollment. Using a mixed-methods approach that comprised both qualitative interviews and quantitative surveys, the study found that married people enrolled at higher rates than single people. The study concluded that enrollment in health insurance plans is highly influenced by marital status, with married people being more inclined to do so. The study's emphasis on cities, however, has a drawback because it's possible that the conclusions won't apply to rural places (Erlangga et al, 2019)

The purpose of this study was to determine the association between health insurance enrollment and age in low-income communities. An analysis of enrollment over time using a longitudinal research methodology revealed that the enrollment rate is directly correlated with age, meaning that older individuals are more likely to sign up for health insurance. Thus, it may be said that age has a role in determining health insurance enrollment, particularly in environments with low incomes. The study's shortcomings, however, include that it does not account for changes in income or health status, which could also have an impact on enrollment choices (Acharya et al., 2023)

The purpose of this study was to investigate the relationship between health insurance enrollment and socioeconomic characteristics like income and education. The study used data from national health surveys for a quantitative analysis. The results showed that greater income and educational attainment were linked to higher health insurance program enrolment rates. This resulted in the deduction that a person's socioeconomic level is a reliable indicator of their enrolment in health insurance. The study's emphasis on national data, however, might not adequately capture regional differences, which could affect how broadly applicable the findings are (Acharya et al., 2020).

The gender-based patterns in health insurance enrollment are the focus of this study. This was intended to be a cross-sectional study

employing health insurance registry data, and it was discovered that more women than men had joined. It was also shown that different genders enrolled for different reasons. In conclusion, gender had an impact on health insurance enrollment, with women often having greater participation rates. However, this study's drawback is that it only looked at metropolitan centers; as a result, it is unable to capture the dynamics and trends that are developing in rural areas (Bharati et al., 2025).

For this reason, research was done on how married status affected the availability of health insurance in cities. This study found that married individuals had a higher likelihood of having health insurance, using a survey-based methodology that only included urban participants. Ultimately, it was determined that a person's marital status had a substantial impact on their health insurance coverage, with married individuals having a higher coverage rate than single or divorced individuals. The study's shortcoming is that it only looks at urban environments; rural places could not be affected (Bharati,2023).

This study aimed to ascertain how socioeconomic factors affect SHI enrollment. It analyzed data from a nationwide health insurance survey using quantitative research methods. The study's findings demonstrated a considerable correlation between the SHI enrollment rates and socioeconomic characteristics, mostly represented by income and education. Thus, higher SHI enrollment rates are a result of improved socioeconomic circumstances. The study's weakness, however, is that it is impossible to rule out the possibility that important socioeconomic characteristics were overlooked in the survey, which would have affected how thorough the results were (Khanal et al., 2023)

The current study aims to examine enrollment trends in health insurance programs based on age. According to a cross-sectional examination of the data, the rate of enrolment in health insurance programs changes dramatically with age groups, and older persons are more likely to enroll. The study found that age was a significant factor in determining health insurance enrollment in several ways, with older people exhibiting a higher tendency. The cross-sectional design of this study reduced causal inference, which is one of its drawbacks. Furthermore, it is not possible to say that the data's generalizability is across populations, which could have an impact on the findings' applicability (Ranabhat, 2019).

It found impediments to health insurance enrollment related to socioeconomic status and culture. Using a mixed-method approach, this study discovered through qualitative interviews and quantitative surveys that substantial socio-economic and cultural hurdles impede health insurance enrollment. Thus, it follows that removing these obstacles is essential to raising enrollment rates. The emphasis on cultural circumstances restricts its applicability to a wider audience (Sharma et al., 2019).

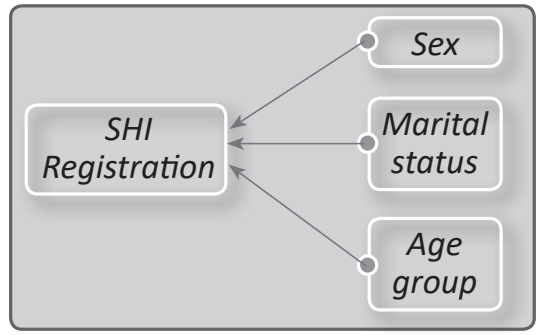
Research Gap

While individual studies have been done on

the influence of age, (Sharma et al., 2019), and gender on health insurance enrollment rates, no research has been available on how these demographic factors interact collectively to influence these rates. In terms of demographic factors, this current study will seek to fill that void by undertaking a holistic analysis of how age, gender, and marital status together affect SHI enrollment rates. The majority of research is limited to certain cultural or geographic contexts, which affects how broadly applicable the findings are (Acharya et al., 2019). The purpose of this study is to investigate SHI enrollment trends in Ward No. 30 of Kathmandu Metropolitan City to gain a deeper understanding of the local demographic implications and to offer pertinent insights. . The majority of existing research is either cross-sectional or has very short longitudinal designs (Ranabhat, 2019). These kinds of studies might not even demonstrate causation, much less highlight changes over time. The present study aims to provide deeper insights into the ways that demographic factors affect SHI enrollment by thoroughly analyzing enrollment trends throughout time.

Previous studies of this kind typically focus on specific cultural contexts or urban areas and have limited generalizability to broader populations. By concentrating on enrollment in a specific metropolitan location, this study hopes to broaden our understanding of SHI enrollment trends and produce findings that apply to similar situations (Sharma et al,2019)

Research Framework



Hypothesis

H_1: There is a statistically significant relationship between age and enrollment in the Social Health Insurance (SHI) program among residents of Ward 30.

H_2: There is a statistically significant relationship between gender and enrollment in the Social Health Insurance (SHI) program among residents of Ward 30.

H_3: There is a statistically significant relationship between marital status and enrollment in the Social Health Insurance (SHI) program among residents of Ward 30.

Methods and Materials

Research design

In Ward No. 30 of Kathmandu Metropolitan City, the quantitative design examined the impact of demographic determinants on Social Health Insurance enrollment rates.

Research Area

The study's sampling frame was Ward No. 30 of Kathmandu Metropolitan City, which is home to a variety of demographic groups with varying rates of SHI enrollment.

This metropolitan environment offers an appropriate backdrop for analysing socioeconomic and demographic variables in a particular geographic context.

Data Type:

Secondary data utilised information prepared and supplied by social security agencies, health governments, or any other organisations that have data on people enrolled in the Social Health insurance scheme. Variables including age, sex, marital status, and SHI enrollment must be included in the data.

Sample and Target Population:

Those who are eligible for the SHI program made up the target population. A representative sample from the available secondary data or the entire dataset's raw data (if tiny) could be used for sampling.

Tools for Statistical Analysis:

Characteristic Statistics:

Understanding the SHI database's demographics (age, sex, and marital status) is the goal.

Methods: Frequency distribution, mean median, standard deviation, and percentage. For example, Histograms, bar graphs, pie graphs, and other graphs would illustrate enrollment trends in demographics and the chi-square test was applied.

Moral Aspects

Informed Consent: Before gathering secondary data, officials were informed of the study's purpose, and their written consent was requested. Confidentiality: The data gathered was kept private and utilised exclusively for the study. Anonymisation of data was used to safeguard participant identity.

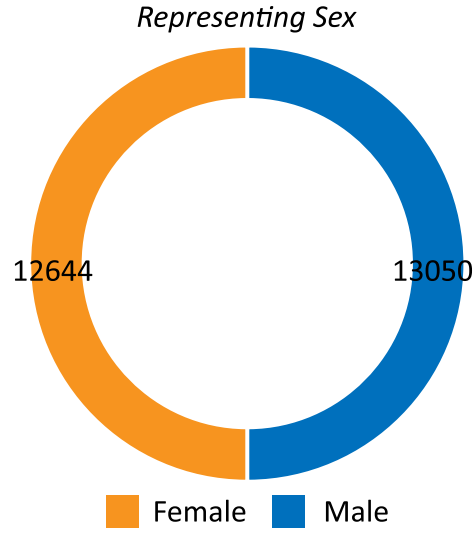
Data analysis

Male population ≈ 13,050

Female population ≈ 12,644

Total = 25,694

Data presented in a simple bar diagram



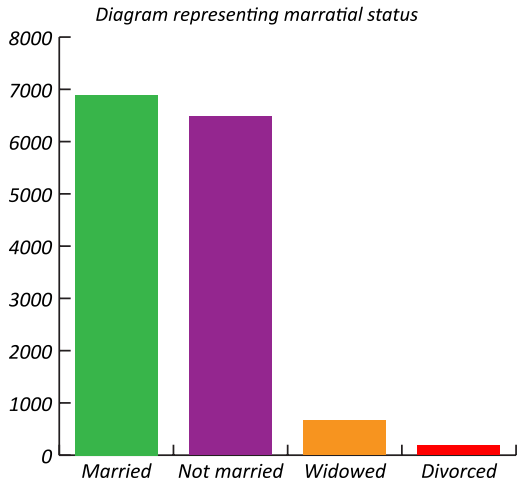
While there is almost an equal proportion of males and females in the population, the gender-related factors seem to play a role in one's participation in the project.

Table 1

Marital status

	No.
Married	6890
Not married	6480
Widowed	669
Divorced	181

Data presented in Bar-diagram



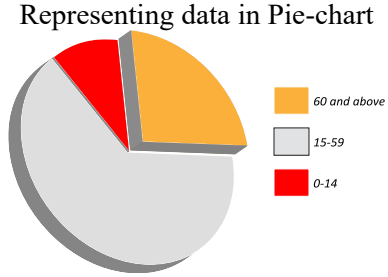
The Married and Never Married categories both have the highest population counts and are also almost at the 7000 mark each. This implies that most of the people in the population are either married or have never been married. In comparison, the Widowed category records a very low number between hundreds at best. This shows that fewer people belong to this status than the first two categories. The divorced category possesses the least numbers where only a mere percentage of the population comprises the divorced.

Table 2

Population by age group

Age group	Number
0-14	3421
15-59	9269
60andabove	1530

Representing data in Pie-chart



These working-age groups often dominate any population distribution, with the 15–59 age group (the orange section) appearing to be the most populated age group. In contrast, the gray segment, or age group of 60 and over, makes up a very small percentage of the overall population, indicating that there are fewer senior people than working-age individuals. Despite being a younger and yet densely populated age group, the 0–14 age group (blue segment) is still a less active section of the population and even smaller than the working population, but it is still greater than the elderly bracket.

Result and Analysis

Data for this investigation were collected from a secondary source. Urban Health Promotion Centre is conducting a campaign to promote Social Health Insurance for the residents of Ward 30. Secondary data were collected in mid-July 2024. Collected data were entered into the Statistical Package for the Social Sciences (SPSS) 26 version for analysis of the data. In this investigation, mainly descriptive statistics were applied to analyze the data but for comparison purposes, the chi-square was also applied

Table 3

Frequency distribution of sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	565	41.0	41.0	41.0
	Female	814	59.0	59.0	100.0
	Total	1379	100.0	100.0	

The distribution of respondents by sex shows that females constituted the majority (59.0%), while males accounted for 41.0% of the total sample. The study results demonstrate that female participants outnumbered their male counterparts.

Table 4

Frequency distribution of age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	100	7.3	7.3	7.3
	26-35	50	3.6	3.6	10.9
	36-45	108	7.8	7.8	18.7
	46-55	206	14.9	14.9	33.6
	56-65	455	33.0	33.0	66.6
	66 and above	460	33.4	33.4	100.0
	Total	1379	100.0	100.0	

The age distribution of respondents shows that older people represent the largest group because 33.4% of respondents are aged 66 years and above and 33.0% are aged 56 to 65 years. The groups together make up 66.4% of the entire sample while the younger age groups show less representation in the study. The research population mainly consists of older adults because they require more medical services and they tend to use social health insurance programs more frequently.

Table 5

Frequency distribution of Marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	123	8.9	8.9	8.9
	married	1079	78.2	78.2	87.2
	widows	177	12.8	12.8	100.0
	Total	1379	100.0	100.0	

The marital status distribution shows that most respondents were married (78.2%) and widowed individuals made up 12.8% of the group while only 8.9% of respondents were single. The study population consists mainly of people who have family obligations which might affect their involvement in social health insurance programs.

Table 6

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
sex* d.V	1379	100.0%	0	0%	1379	100.0%

Table 7

*Sex * d.V. Crosstabulaton*

Sex	DV		Total
	Not enrollment	Enrollment	
Male	142	423	565
Female	81	733	814
Total	223	1156	1379

Table 8

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	56.706[a]	1	.000		
Continuity Correction	55.591	1	.000		
Likelihood Ratio	55.850	1	.000		
Fisher's Exact Test				.000	.000
w	56.664	1	.000		
N of Valid Cases	1379				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 91.37.

b. Computed only for a 2x2 table

The Chi-square test results showed a significant link between sex and enrollment status (χ^2 = 56.706, df = 1, $p < 0.001$). Female respondents (90.0%) had a higher enrollment rate compared to male respondents (74.9%), indicating that sex plays a significant role in determining participation in the program.

Table 7

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age* d.V	1379	100.0%	0	.0%	1379	100.0%

Table No.8

*Age * d.V Crosstabulation Count*

		D.V		
		Not enrollement	Enrollement	Total
Age	18-25	38	62	100
	26-35	12	38	50
	36-45	38	70	108
	46-55	54	152	206
	56-65	17	438	455
	66 and above	64	396	460
Total		223	1156	1379

Table 9

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	135.169[a]	5	.000
Likelihood Ratio	139.147	5	.000
Linear-by-Linear Association	73.046	1	.000
N of Valid Cases	1379		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.09.

The Chi-square test showed a statistically significant association between age and enrollment status ($\chi^2 = 135.169$, df = 5, $p < 0.001$). The study found that enrollment rates increased with age, reaching a maximum of 96.3% for participants aged 56 to 65 years while the 18 to 25 age group showed the least participation at 62.0%. The study found a significant linear-by-linear association which shows that enrollment increases as people get older.

Table 10

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
MS * d.V	1379	100.0%	0	.0%	1379	100.0%

Table 11

MS * d.V Crosstabulation Count

		D.V		
		Not enrollement	Enrollement	Total
MS	single	47	76	123
	married	154	925	1079
	widows	22	155	177
Total		223	1156	1379

Table 12

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	48.774[a]	2	.000
Likelihood Ratio	39.386	2	.000
Linear-by-Linear Association	28.158	1	.000
N of Valid Cases	1379		

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 19.89.

The Chi-square test found a statistically significant link between marital status and enrollment status with results showing ($\chi^2 = 48.774$, df = 2, $p < 0.001$). The widowed group had the highest enrollment rate at 87.6% followed by married respondents who achieved 85.7% enrollment while single individuals showed the lowest enrollment rate at 61.8%. The evidence shows that marital status acts as a main factor which determines who takes part in the program.

Discussion

The present study examines how demographic factors affect Social Health Insurance enrollment in Ward 30 of Kathmandu. The results establish their position within existing research on Nepal's National Health Insurance Program. The study investigates reasons behind their observed patterns while examining equity implications and universal health coverage. The study acknowledges its limitations and provides recommendations

The sample (N = 1379) contained mostly female participants who made up 59.0% of the group and who had a median age of 56 years or older because 66.4% of respondents fell within that age range. Most participants were married (78.2%).The Urban Health Promotion Centre achieved successful results through its localised campaign because 83.8% of the urban ward population enrolled in SHI, which resulted in 1,156 people becoming enrollees. The enrollment rate exceeds both national and district-level enrollment rates for Nepal's government health insurance program because Acharya (2024) and Ghimire et al. (2019) have shown that actual enrollment rates remain below that threshold.

.Bivariate analysis showed a statistically significant relationship between sex and enrollment status ($\chi^2 = 56.706$, df = 1, $p < 0.001$) because females enrolled at a rate of 90.0% while males enrolled at a rate of 74.9%. The evidence from Nepal shows that women or female-headed households demonstrate higher participation because they have more health-seeking behavior and reproductive health requirements and they handle family health responsibilities (Ghimire et al., 2019; Acharya, 2024).Men show lower enrollment rates because they think their personal health risks are less serious and their work obligations prevent them from participating in health programs and because their households make different choices about health matters. The campaign's focus appeared to attract more interest from female residents which shows that gender-sensitive outreach strategies need to be developed to help men participate more and to eliminate participation disparities between genders.

The study established a strong association between age and student enrollment through its results which showed a statistical significance ($\chi^2 = 135.169$, df = 5, $p < 0.001$) and reported a continuous declining pattern. The study found that enrollment rates increased with advancing age, reaching their highest point of 96.3% for individuals between 56 and 65 years old, while the youngest group (18–25 years) had the lowest rate (62.0%). The main reason for high overall enrollment rates came from older adults (56+ years), who made up most of the research sample. The established pattern shows consistency with health insurance research which exists both in Nepal and throughout the world. People increase their health risk assessment and medical requirement evaluation at their health condition assessment to become eligible for protective program enrollment. Young adults often consider themselves to be immune from harm, yet they must manage their financial obligations (Ghimire et al., 2019; Acharya, 2024; Bhusal & Sapkota, 2021). The Nepal demographic and Health Survey research shows that older individuals have better coverage outcomes, particularly when they suffer from chronic diseases or their family needs medical assistance. The urban ward shows an older demographic pattern because it indicates that residents need more medical services and they respond better to health promotion activities. The youth enrollment rate demonstrates a challenge which jeopardizes both the long-term success of the program and the achievement of universal health coverage objectives.

The study found that marital status had a strong impact on enrollment which resulted in a statistical significance ($\chi^2 = 48.774$, df = 2, $p < 0.001$). The enrollment rate reached its highest point for widowed respondents at 87.6% while married individuals followed at 85.7% and single respondents achieved the lowest rate at 61.8%. The factors of family obligations and shared financial planning together with increased risk after losing a spouse create reasons for married and widowed individuals to join the program.

The younger population of single people tends to view their current situation as less urgent because they face different work-related financial challenges. The bivariate analysis showed strong marital status relationships because different research found that marital status effects decrease after researchers controlled for age and wealth (Acharya, 2024; Ghimire et al., 2019).

The study results demonstrate that SHI participation in Ward 30 depends on three factors: sex, age, and marital status, which all produce greater participation from women and older individuals and people who have family responsibilities. The patterns probably stem from these groups needing more healthcare services because they have heightened risk awareness and their families require their presence. The evidence from Nepal shows that age, chronic illness status, recent health problems, greater socioeconomic status, educational attainment, and ethnic background are the main factors determining enrollment. People face multiple obstacles to enrolling because they lack knowledge about the system and distrust the available services, encounter administrative obstacles, and they would receive substandard treatment (Ghimire et al., 2019; Acharya, 2024; Bhusal & Sapkota, 2021; Ranabhat et al., 2020).

The study used bivariate chi-square tests to study demographic patterns, but socioeconomic factors and cultural elements interacted with those findings. People who achieve higher education levels and accumulate wealth become better able to understand their insurance benefits and premium payment requirements. People develop their SHI attitudes through two factors: cultural norms and their trust in the health system. The local campaign successfully used the existing vulnerabilities that elderly people and female residents faced.

The study results show that demographic characteristics affect SHI enrollment rates in Ward 30, as women, the elderly, and married or widowed people demonstrate higher participation rates. The local campaign research shows its strengths while revealing major equity gaps which need to be fixed. Future research should use multivariate and longitudinal research methods together with socioeconomic and behavioural data and mixed-methods research to study the factors that cause people to drop out or not enrol. Nepal needs socially inclusive health insurance enrollment efforts, which require focused context-based programs together with improved service delivery systems to achieve universal health coverage through Social Health Insurance.

Conclusion

The research studied how age and gender together with marital status affect Social Health Insurance program participation among residents of Ward 30 Kathmandu. The study used secondary data from mid-July 2024 which researchers analyzed using descriptive statistics and chi-square tests in SPSS version 26 to achieve its research objectives and demographic research questions about SHI membership. The research discovered that the urban ward citizens had an 83.8% enrollment rate which exceeded the national average of 10 to 13% health insurance coverage for people aged 15 to 49 according to the Nepal demographic and Health Survey 2022 while government scheme enrollment reached 10% (Acharya 2024). The three demographic variables showed statistically significant relationships with the study results. Women registered for courses at a higher rate of 90.0% compared to men who had a registration rate of 74.9% ($\chi^2 = 56.706$ df = 1 $p < 0.001$). The study found that enrollment rates increased with age until they reached their highest point of 96.3% among people aged 56 to 65 years and then decreased to 62.0% for people aged 18 to 25 years ($\chi^2 = 135.169$ df = 5 $p < 0.001$) because of a strong linear-by-linear relationship. The study found that widowed respondents (87.6%) and married respondents (85.7%) had higher enrollment rates than single respondents (61.8%; $\chi^2 = 48.774$, df = 2, $p < 0.001$).

The patterns discovered in this research work together with evidence from Nepal to prove that older people and particular female groups and people who have family duties and those who think they require medical treatment will apply for health insurance. The sample contained mostly older and married participants who showed higher enrollment numbers because the Urban Health Promotion Centre conducted focused outreach activities in Ward 30. The study achieved its goal of proving that age and gender and marital status serve as crucial factors which determine SHI enrollment decisions. The health risk awareness of females and older adults and people with family duties has increased because these groups now participate in their health insurance plans. The demographic pattern of lower enrollment among males and younger adults and single individuals will create demographic inequities that endanger both the program's future success and Nepal's goal of achieving universal health coverage.

The localized campaign achieved high urban area participation because of its strengths yet the findings showed that nationwide problems remained which included insufficient coverage and socioeconomic differences and the requirement for better outreach methods . The study has three main limitations which include using secondary data and conducting bivariate analysis without adjusting for confounding factors and studying only the particular urban ward area.

The demographic variables of Ward 30 residents determine their patterns of SHI enrollment. The organization requires targeted programs which include gender-sensitive campaigns for men and youth-

focused awareness programs that demonstrate preventive advantages and streamlined single enrollment processes and service quality enhancements to eliminate existing barriers while ensuring fair access. The research should use multivariate and longitudinal designs together with socioeconomic and behavioral variables and mixed-methods approaches to study enrollment and retention barriers. The national health insurance program of Nepal will achieve its goal of covering more people through sustainable universal health coverage when these efforts receive extra support.

Implication

The study's findings have many policy and practice-related ramifications for Socio Health Insurance (SHI) ownership:

a) Focus on older age cohorts: A larger percentage of SHI owners are in the "56 and older" age group, which suggests that social health insurance is a service that older members of society are more inclined to use. This could be a result of this group's understanding of health coverage benefits or health needs. Obstacles that prevent younger people from signing up for social health insurance should also be taken into account in the effort to implement this policy. b) Marital status as a factor in enrollment: 78.2% of the respondents. One of the factors used to explain why people participate in the health insurance program is their marital status. Spouse responsibility may cause married people to look for coverage and sign an SHI contract against their will. This highlights the need for more welcoming and comforting enrollment procedures for bereaved and single people who might not be able to fully enjoy the advantages of SHI benefits. c) Inequality of gender in enrollment: Given that women make up 59% of the population with SHI, it may be concluded that gender has little bearing on members' inclination to participate in SHI. A different issue of gender participation in insurance coverage may be highlighted by the higher participation of women compared to men, possibly as a result of a more comprehensive health policy. Without prejudice, governments should work to educate and entice people of all genders to enrol. d) Transition to younger age groups to boost enrollment: Low levels of SHI tendency were observed in the study's younger age sample (18–45 years). Low enrollment would result from this group's apparent lack of health risks at the time. Raising awareness is necessary.

Recommendation

Including Other Socioeconomic Criteria to improve our knowledge of the motivations driving SHI membership, future research should consider criteria including employment, education, and income level. This would provide a more comprehensive view of the socioeconomic elements that either promote or discourage SHI joiners. a) Evaluation of cultural and ethnic factors: Given the diversity of ethnic groups in the Kathmandu Valley, it is necessary to investigate how several social factors, including ethnicity, religion, and cultural customs, influence people's beliefs and actions about health insurance. This will

make it easier to create focused interventions to improve SHI adoption across different populations.

b) Cohort studies for causal links: The cross-sectional design of the current study is one of its limitations, as it is unable to evaluate any cause-and-effect links. To more precisely examine the demographic parameters associated with SHI program enrollment and retention, future research can attempt to employ more longitudinal studies that will evaluate SHI enrollments and outcomes after a set amount of time. c) Examining enrollment barriers for single and widowed groups: Given the poor SHI coverage among single and widowed individuals, further research on the obstacles to their access is necessary. These populations' socioeconomic standing or emotional health may potentially be factors that discourage them from enrolling in the SHI program.

d) Impact of government policies and awareness campaigns: Research evaluating the effects of government subsidies, awareness campaigns, or any other policy initiatives intended to increase SHI membership should be conducted to inform this discussion. It will be easier to create enrollment growth plans in the future if we know which tactics encourage SHI enrollment across the population.

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