

Factors Affecting Satisfaction Levels of Foreign Students Availing Health Insurance - A comparative study of Health Promoting University with Other Universities in Pune, India

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Abstract

Health insurance plays a crucial role in ensuring universal health coverage, particularly for foreign students studying in India. The study compares the satisfaction levels of students at Health Promoting University (HPU) and Other Universities (Non-HPUs) in Pune, India. It examines factors such as including service range, quality of healthcare providers, premium cost, claims process, information accessibility, and accessibility to healthcare facilities. This research aims to investigate the factors influencing satisfaction levels of health insurance among foreign students in HPU with emphasis on comparing the satisfaction levels of health insurance with Other Universities (Non-HPUs) in Pune, India. The study focuses on Health Promoting Universities (HPU) as the primary location, with a comparative analysis of other Universities (Non-HPUs) in Pune, India. A semi-structured Likert scale questionnaire was administered to foreign students in India from both group of universities. Descriptive statistics, t-tests, and Chi-square analysis were used to analyse the data in order to explore satisfaction levels and identify disparities between the two study groups. The sample size for the study was 412. Results showed comparable overall satisfaction levels between HPU (Mean=32.38±4.885) and Non-HPUs (Mean=32.42±4.885). Significant variations were found across gender ($\chi^2=27.895$, $p<0.001$) and academic disciplines ($\chi^2=17.891$, $p=0.007$). Male students reported higher satisfaction levels than females, while medical science students showed higher satisfaction compared to other disciplines. The study highlights the effectiveness of the HPU framework while identifying areas for improvement in health insurance services for foreign students.

Keywords

Health Insurance Satisfaction, Health Promoting University (HPU), Foreign Students

1. Introduction

India is becoming an increasingly popular destination for foreign students due to its affordable yet high-quality education (UNESCO, 2019b). Additionally, medium of instructions is in English, making it an attractive choice for international students. Culturally, India provides a rich and diverse environment, further enhancing its appeal.

Health Insurance is an important aspect of universal health coverage, and is very costly to achieve care through out-of-pocket payment. This is the main reason why foreign students were given mandatory subscription of health insurance while the corresponding Indian students of higher education are optional. Foreign students face a lot of challenges ranging from hospitalization for minor illnesses, surgeries and road traffic accidents, in addition academic stress was also found to be part of challenges faced by international students leading to negative consequences on their health as well as academic achievement (Merlin Joseph & Sudhesh N.T., 2023).

Health insurance is vital for international students to prevent the potential financial strain of high medical expenses. Without adequate health coverage, students may face limited access to healthcare, increased financial pressure, elevated stress levels, and a lack of essential support services, such as emergency assistance. Comprehensive health insurance ensures that students can concentrate on their academic pursuits without the concern of unforeseen medical costs. Health Promoting University (HPU) has been increasingly popular in the previous years. It provides systematic health promotion activities to improve the well-being of students generally with emphasis of foreign students (Gore et al., 2023).

HPUs offer preventive health programs, mental health counselling, and insurance education initiatives, which may increase the level of satisfaction of students. Non-HPUs universities, on the other hand, do not have a formal health promotion program, this may predispose students particularly international students (most vulnerable) because they are not familiar with the new healthcare system they came in contact with. It has been observed in previous researches that foreign students find it challenging to access the healthcare system, comprehend insurance policies, and seek the right medical care (Dugenio-Nadela et al., 2023). In addition, some of the important factors are service quality, responsiveness by healthcare providers, and administrative efficiency are the key elements in determining students' satisfaction with health insurance policies (Gore et al., 2023). Whereas a few developed countries have good research studies regarding student satisfaction of health insurance, this area in the Indian context has few research studies, and very rarely compared between health-promoting universities and other universities (Ahlstrand et al., 2022).

With the ever-increasing international students coming to India for education, especially in Pune, a major Asian educational hub, there is a growing need to assess their health-related needs, including quality health insurance services. Health insurance is one of the factors that contribute to students' financial security, timely medical assistance, and overall academic success (Ahlstrand et al., 2022).

This study looks at how climatic adaptation affects international students, specifically how it affects their academic goals, financial load, and health-seeking behaviour. It draws attention to the rise in medical visits brought on by health problems linked to climate change and the resulting financial burden on students. With perspectives from stakeholders in charge of overseeing international student affairs, the study also emphasizes the vital role that institutional readiness plays in assisting international students. It is stressed that all international students studying abroad must have adequate health insurance because climate has a substantial impact on their physical and mental health. Additionally, previous studies have frequently expressed concerns regarding the ineffectiveness of health insurance policies due to the fact that many students do not use them properly, indicating the need for increased accessibility and understanding within university-managed overseas student programs (Merlin Joseph & Sudhesh N.T., 2023).

AIM: To determine factors affecting satisfaction level of health insurance among foreign students in Pune India

1.1 Objectives

1. To study the satisfaction Level of Health Insurance among Foreign Students in Health Promoting Universities (HPU) and Non-Health Promoting Universities (Non-HPUs)
2. To Compare and determine factors associated with satisfaction level among foreign students in Health Promoting University (HPU) and Non-Health Promoting Universities (Non-HPUs)

2. Literature Review

The Indian subcontinent is one of the world's second-largest source countries of international students due to a stable economy and affordable quality education, but has just 0.1% of incoming mobility rate which was recorded. Some South Asian countries accounted for about forty four percent of the total inflow of nearly 46,000 international students to different higher institutions in India, with other Middle Eastern and African countries being the alternative source areas. The ratio of international students from African countries especially Nigeria is on an upward trend (Pawar et al., 2020). The degree to which a person's expectations of the product are met would be measured by satisfaction in a comparison between perceived and expected performance. Customers will become unsatisfied if the performance does not meet their needs. Annual policy renewal is mandatory, and policyholder satisfaction is a key factor in policy renewal for health insurance (Ahire & Rishipathak, 2020). Since it is possible to satisfy customers for a variety of reasons, research was conducted in Bangladesh to evaluate patients' satisfaction with health services while taking into account the elements that influence satisfaction. First off, the abundance of information available to consumers of health care services in industrialized nations has made them more conscious of what they are being marketed in the current market. As a result, these customers are more discriminating and aware of their needs (Andaleeb et al., 2007). A comparative study conducted in Pakistan titled "Satisfaction Level of Health Insured and Financial Profitability of Health Insurance Companies from Health Insurance Products" reveals that employee satisfaction regarding health insurance policies is notably high. This is primarily because the health insurance coverage is provided by their respective employers, which enhances their overall contentment with the policy (Mahnoor S, Preh B, and Vinesh K, 2019).

Study conducted in Africa, Ethiopia stated that, "Beneficiaries' satisfaction is a multi-dimensional healthcare outcome affected by many variables, such as the patient, physician, and system-related factors, family size, knowledge about the benefits packages, friendliness with healthcare providers, privacy, and confidentiality; getting prescribed drugs; availability of laboratory services; perceived cleanness of health facilities; length of waiting time; the way queries were dealt with by staff; and agreement with the benefits packages of the community based health insurance scheme"(Getaneh et al., 2023).

In another study conducted post pandemic (COVID19) it was discovered that international students from various nations differ significantly in their capacity to adjust to distance learning. At every academic level, Chinese students continuously showed excellent adaptive skills. Only 59% of Mexican and 41% of Indian undergraduate students reported being able to adjust to online learning, compared to 69% of Chinese students. In contrast to their Indian (64%) and Mexican (60%) colleagues, 75% of Chinese graduate and professional students reported positive adaptation in higher education levels, continuing this pattern. These differences demonstrate how students' comfort levels with remote learning platforms may be influenced by their cultural and geographic backgrounds(Chirikov & Soria, 2020).

Concept of Health Promoting University

The concept of a Health Promoting University (HPU) refers to an educational institution that actively supports and fosters the health and well-being of its students, staff, and the wider community. HPU go beyond traditional healthcare and wellness initiatives by integrating health promotion into every aspect of the university's environment, culture, and operations.

A Health Promoting University (HPU) provides health insurance for students and fosters well-being by offering resources and programs that educate students and staff on physical, mental, and social health, encouraging healthy behaviours. It ensures accessible healthcare services, mental health counselling, and wellness programs to meet diverse needs. The university creates a healthy campus environment with nutritious food options, spaces for physical activity, and sustainability efforts. HPU also promote social support networks, fostering community and inclusivity, while collaborating with local health organizations and government bodies to extend health initiatives beyond the university setting. Health Insurance and cashless hospitalization is one of the key highlights of the Health Promoting University. The HPU included in the study conducts orientation sessions for students for health insurance, has dedicated phone number and Insurance desk for prompt usage of the health services at the University as well as prioritizing other three main areas such as community outreach, sports/fitness, and nutrition/dietetics. Student satisfaction with its health programs has increased dramatically over time, rising from 64.24% in 2010–2015 to 82.24% in 2015–2020 based on data from one of the HPU and in accordance with the Ottawa Charter, the university's proactive efforts to promote a healthier campus community are reflected in these initiatives (Karnataka State Higher Education Academy, 2022).

Institutional Comparison and Academic Programs

- **Health Promoting University (HPU)**

Health Promoting University operates under the HPUs model, guided by the World Health Organization (WHO), which emphasizes holistic health and wellness initiatives for students (Reddy & Selvaraj, 2015). HPU wellness programs, including regular health screenings, mental health counselling, and mandatory health insurance, address both preventive and curative healthcare needs, aligning with global trends in international education (Tang et al., 2018).

Research by Alaka, Rajiv, and Tilak (2012) underscores HPU efforts to raise awareness about health insurance benefits among its students. This aligns with practices observed in institutions in Australia, where universities offer culturally competent healthcare services and comprehensive orientation programs for international students, resulting in higher satisfaction levels (Arthur, 2017). Moreover, HPU focus on affordable and accessible health care reflects efforts seen in Germany, where statutory health insurance for international students ensures equity in healthcare access (Körner et al., 2016).

- **Comparison with Other Universities (Non-HPUs) in Pune**

Unlike HPU, other universities in Pune lack the structured HPU framework. This disparity is reflected in slightly lower satisfaction levels among students from these institutions. Research by Ahire and Rishipathak (2020) highlights common pain points such as delays in claims processing and limited coverage, which contribute to dissatisfaction. Furthermore, a comparative study in Pakistan by Mahnoor et al. (2019) found that the absence of institutional wellness frameworks often leads to greater dissatisfaction among health insurance policyholders.

HPU's emphasis on preventive care and student-centric insurance policies provides a model for other universities in Pune. Institutions could benefit from adopting integrated wellness initiatives similar to HPU, as these approaches have been proven to improve satisfaction by addressing both practical and emotional needs of international students (Arthur, 2017).

- **Gender Disparities and Cultural Sensitivity**

This mirrors findings from Getaneh et al. (2023) and Arthur (2017), which highlight the unique barriers female students often face, including limited access to culturally appropriate healthcare services and inadequate support systems. Universities that address these barriers by offering tailored healthcare services, such as female-only clinics or multilingual healthcare staff, can significantly enhance satisfaction levels.

- **Academic Discipline and Satisfaction**

This aligns with findings by Pawar, Vispute, and Wasswa (2020), who observed that satisfaction often correlates with students' familiarity with healthcare systems and the perceived relevance of insurance coverage. Similarly, research by Körner et al. (2016) indicates that specialized support tailored to academic disciplines significantly improves health insurance satisfaction in German universities.

- **Broader Context of International Student Satisfaction**

Globally, student satisfaction with health insurance depends on factors such as accessibility, transparency, and the alignment of services with specific needs (Han & Hwang, 2013). HPU's comprehensive approach—covering preventive care, mental health, and accessible healthcare facilities—reflects best practices identified in developed countries (Arthur, 2017; Körner et al., 2016).

Rationale:

The "Factors Affecting the Satisfaction Level of Health Insurance Among Foreign Students in India" are significant in the context of Health Promoting Universities (HPU) in Pune, as it functions under the aegis of Health Promoting University, which is a framework instituted by the World Health Organization. With HPU's commitment as an institution towards supporting an environment that encourages students' well-being and health development, this study becomes an excellent framework for exploring health insurance satisfaction among international students. Therefore, health insurance for foreign students in India is a compulsory service since the out-of-pocket cost of healthcare is too expensive, and thus a threshold for accessing any kind of health care service cannot be eliminated (Binnendijk et al., 2013).

Therefore, the level of satisfaction of international students with health insurance should be acknowledged as a way of establishing whether the university policy regarding health and wellness has been effective. Different studies reported that factors such as access to services, coverage adequacy, and quality of care presented influences on the health insurance satisfaction level (Han & Hwang, 2013). The stated objective lacks context while it relates more to

the international student experience in India-a gap found in the overall research pool, particularly in health-promoting environments like HPU, where wellness initiatives can influence the satisfaction outcome.

This paper will contribute to the collection of information in regards to the foreign students' experience in regards to the university health plan. This information will be crucial in the development or redesign of health insurance policies and potentially increase support structures at the universities for international students. Ultimately, these actions will contribute toward universal health coverage and the HPU model (Reddy & Selvaraj, 2015).

Foreign students in India, especially in Pune, encounter various problems when seeking health insurance services. Some of these challenges include a lack of awareness, bureaucratic barriers, academic stress, inadequate coverage, and inconsistency in healthcare service provision (Ahlstrand et al., 2022). Whereas some universities promote student well-being through formal health programs, others do little to help, causing a disparity among the students (Gore et al., 2023).

The study aims to address the following key concerns:

- What are the key determinants of satisfaction levels, and how do these factors differ between HPUs and Non HPUs universities?
- To what extent do health-promoting universities enhance students' insurance satisfaction compared to non-HPUs?

The study compares the experiences of foreign students in HPUs and Non-HPUs universities to provide evidence-based recommendations for improving student health insurance services in Pune. Policymakers, university administrators, and healthcare providers need to understand these factors to enhance the well-being and academic success of foreign students (Gore et al., 2023).

3. Methodology

Study Setting

The study was conducted at

1. Health Promoting University (HPU)
2. Non-Health Promoting Universities (Non-HPUs) in Pune Maharashtra.

Study Design

A descriptive cross-sectional study method was used to select foreign students for inclusion in the study with the help of Likert questionnaire

Sampling Method: Simple random

Sample Size

The minimum sample size (n) was calculated using the formula

$$n = \frac{Z^2 pq}{d^2}$$

Where n = the minimum sample size,

z = the percentage point of the standard normal distribution curve, which the curve defines 95% confidence interval as 1.96.

p = 50% prevalence were used to calculate sample size, since no proportion available based on previous research

q = complementary probability i.e. 1-p

d = maximum sampling error allowed (precision) at 95% confidence limit i.e., 0.05

Prevalence rate (p) of 50%,

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{0.05^2}$$

$$= 384$$

- Additional 28 questionnaire were used for pre-test, making the total sample size of 412

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4. Data Collection

Population from which the sample was drawn

1. The sample was drawn from the foreign students, including both male and female students of Health Promoting University (234) and Non-Health Promoting Universities (Non-HPUs) (178).

Inclusion Criteria

1. Foreign Students in Health Promoting Universities (HPU) and Non-Health Promoting Universities (Non-HPUs) who were studying during 2024 academic year

Exclusion Criteria

- Foreign students that left the studies during the academic year

Study procedure

- Development of Likert's questionnaire in google format that was adapted from a study in Nigeria on "Factors Influencing Satisfaction with Service Delivery Among National Health Insurance Scheme Enrolees in Ibadan, Southwest Nigeria" (Adewole et al., 2022)
- Validation of adopted questionnaire by the supervisor
- Pre testing of the adopted questionnaire with 28 samples
- Data collection

Study subjects and consent-taking procedure

- Study subjects: 412 Foreign Students (66% male, 34% female)
- Consent procedure: Informed consent was obtained from all participants before their inclusion in the study. Participants were informed about the study's purpose, procedures, and their right to withdraw at any time.

Tool: Likert Questionnaire in google format with 10 parameters and 5- severity index each

Duration of study: 1st May to 31st June, 2024

Data Analysis

The study employed a comprehensive descriptive and analytical approach to evaluate factors affecting satisfaction level of foreign students availing health insurance in Health Promoting University (HPU) and Other Universities (Non-HPUs). Descriptive statistics were used to summarize participant demographics. Chi Square and t-tests were conducted to assess comparison between the categories, with statistical significance set at $p < 0.05$. This method allowed for direct comparison of satisfaction. All analysis were performed using SPSS software version 20, ensuring reliable and interpretable results.

5. Result and Discussion

5.1 Descriptive Statistics of Study of Participants

Table 1 above showed summarizes the study's 412 participants with a range different demographic traits of which 34.0% (n=140) of participants were over the age of 20, while the majority (66.0%, n=272) were under that age. Male participants (63.1%, n=260) outnumbered female participants (36.9%, n=152), according to the gender distribution. In terms of marital status, the majority of participants (81.1%, n=334) were single, while 18.9% (n=78) of the sample were married. The distribution among educational characteristics was similar between postgraduate students and HPUs (Health Promoting University) (56.8%, n=234) and undergraduate students and non-HPUs (43.2%, n=178). Medical Science students made up the largest category (42.2%, n=174), followed by Others (40.3%, n=166), General Science (10.2%, n=42), and Engineering (7.3%, n=30), according to the course distribution.

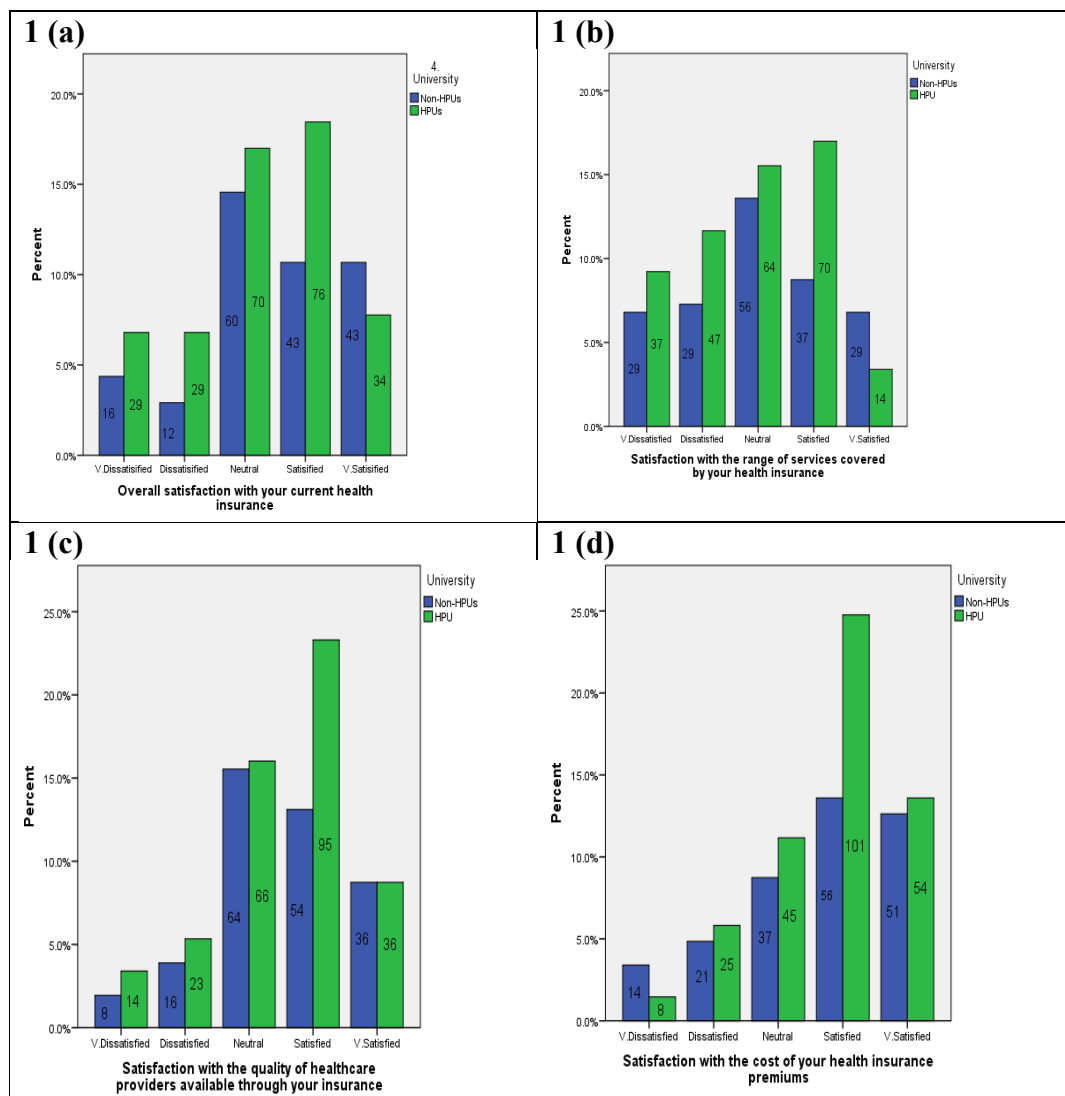
Table 1: Demographic distribution of study participants

Personal Profile	Category	Frequency	Percentage (%)
Age	< 20	272	66.0
	>20	140	34.0
	Total	412	100
Gender	Male	260	63.1
	Female	152	36.9
	Total	412	100
Marital Status	Single	334	81.1
	Married	78	18.9
	Total	412	100
University	HPU	234	56.8
	Non-HPUs	178	43.2
	Total	412	100
Level Of Education	Postgraduate	234	56.8
	Undergraduate	178	43.2
	Total	412	100
Course	Medical Science	174	42.2

	General Science	42	10.2
	Engineering	30	7.3
	Others	166	40.3
	Total	412	100

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5.2 Individual factors of satisfaction level between Health Promoting University (HPU) students and Other Universities (Non-HPUs)



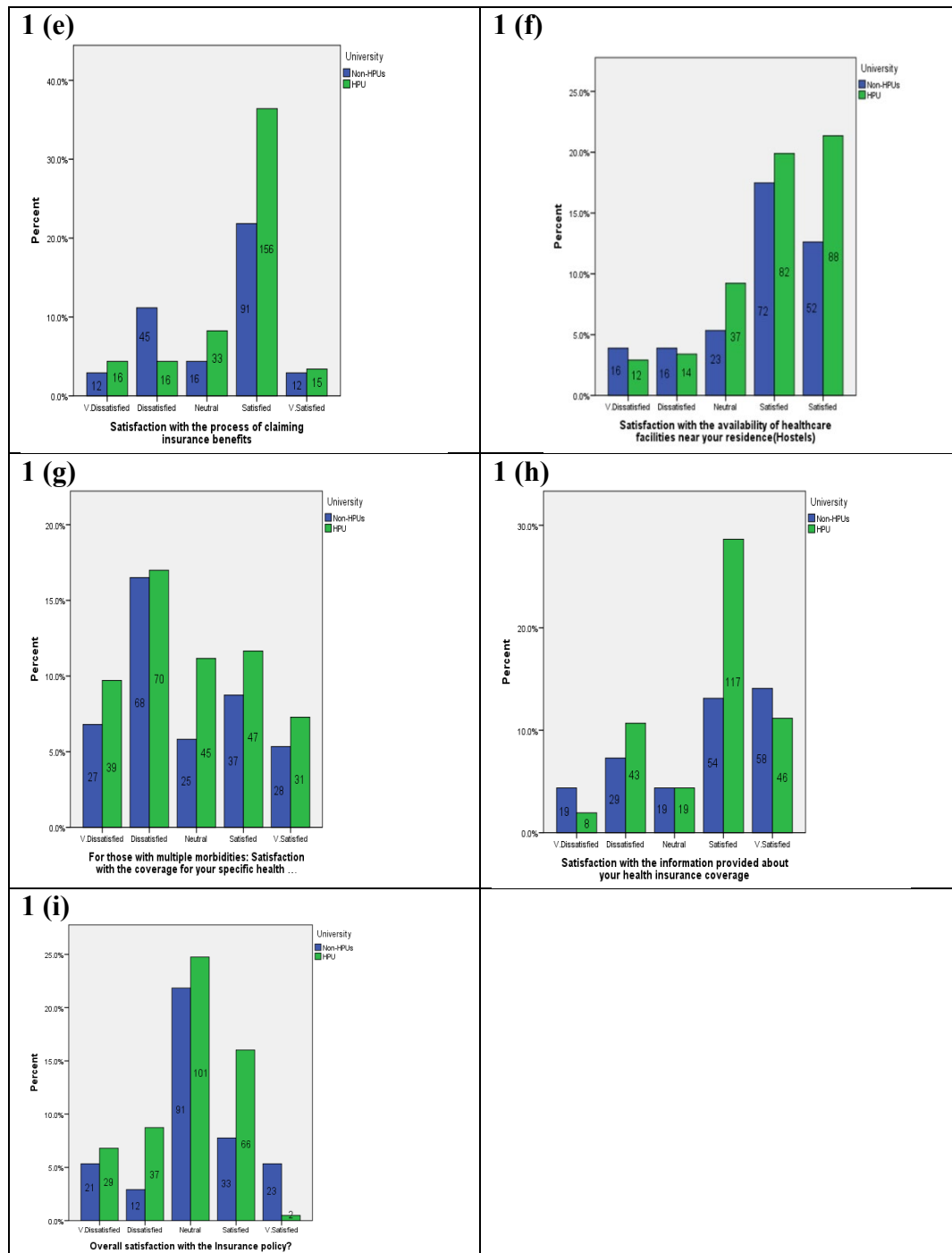


Figure 1. Individual factors of satisfaction level

The variables inside each respective bar represents the number of students with their corresponding percentages on the Y-axis.

5.3 Comparison of Satisfaction Level of Health Insurance between Health Promoting University (HPU) and Other Universities (Non-HPUs)

The Table 2 below showed a comparison between HPU ($M = 32.38$, $SD = 4.885$) and Non-HPUs ($M = 32.42$, $SD = 4.885$) was conducted using an independent samples t-test. Levene's test indicated equal variances ($F = 2.573$, $p =$

.109). The finding revealed no statistically significant difference between the two groups ($t(412) = .066, p = .947$, two-tailed)

Table 2. A comparison between HPU ($M = 32.38, SD = 4.885$) and Non-HPUs ($M = 32.42, SD = 4.885$)

Mean		F	Sig.	t	Df	2-tailed (Sig.)	Mean Discrepancy	Standard Error (Difference)	Confidence Interval (95%)	
HPUs	32.38±4.885								Lower	Upper
Non-HPUs	32.42±4.885	2.573	.109	.066	410	.947	.0470	.666	-.893	.955

Table 3: The table above showed a chi-square test which revealed a statistically significant association between sex and satisfaction levels ($\chi^2 = 27.895, df = 2, p < 0.001$).

Sex		Likert scale of satisfaction level			Total	X^2	df	p.value
		Dissatisfied	Neutral	Satisfied				
	Male	12	180	68	360	27.895	2	0.000
	Female	10	134	8	152			
	Total	22	314	76	412			

Table 4: The table above showed a chi-square test which indicate no statistically significant association between education level and satisfaction levels ($\chi^2 = 5.117, df = 2, p = 0.077$)

Level of Education		Likert scale of satisfaction level			Total	X^2	df	p.value
		Dissatisfied	Neutral	Satisfied				
	Undergraduate	12	126	40	178	5.117	2	0.077
	Postgraduate	10	188	36	234			
	Total	22	314	76	412			

Table 5: The table above showed a chi-square test which indicate no statistically significant association between university type and satisfaction levels ($\chi^2 = 5.117, df = 2, p = 0.077$)

University		Likert scale of satisfaction level			Total	X^2	df	p.value
		Dissatisfied	Neutral	Satisfied				
	HPU	10	188	40	178	5.117	2	0.077
	Non-HPUs	12	126	36	234			
	Total	22	314	76	412			

Table 6: The table above showed a chi-square test which indicate there is statistically significant association between course type and satisfaction levels ($\chi^2 = 17.891, df = 6, p = 0.007$).

Course		Likert scale of satisfaction level			Total	X^2	df	p.value
		Dissatisfied	Neutral	Satisfied				
	Medical Sciences	14	124	36	174	17.891	6	0.007
	General Sciences	0	40	2	42			
	Engineering	0	20	10	30			
	Others	8	130	28	166			
	Total	22	314	76	412			

Table 7: The table above showed a chi-square test which indicate no statistically significant association between marital status and satisfaction levels ($\chi^2 = 1.536$, $df = 2$, $p = 0.464$).

Marital Status		Likert scale of satisfaction level			Total	χ^2	df	p-value
		Dissatisfied	Neutral	Satisfied				
	Single	20	252	62	334	1.536	2	0.464
	Married	2	62	14	78			
	Total	22	314	76	412			

This study examines the factors influencing health insurance satisfaction among foreign students in India, focusing on Health Promoting Universities (HPU) and other Universities (Non-HPUs) in Pune. It highlights its unique role as a Health Promoting Universities (HPUs) and identifies critical parameters such as gender, academic discipline, and institutional models that shape satisfaction outcomes.

Demographic Distribution and Its Impact

• Gender and Age Distribution

Male students (63.1%) outnumbered female students (36.9%) in the study population, and the majority (66%), who were under 20, were under the age of twenty. According to Pawar et al. (2020), this demographic distribution is consistent with larger patterns in the populations of overseas students in India. Male students typically had greater satisfaction levels, according to the chi-square analysis, which showed a significant gender-based difference in satisfaction levels ($\chi^2 = 27.895$, $p < 0.001$).

Overall Satisfaction Patterns

Both university groups exhibit comparable trends in overall satisfaction, with a noticeable concentration in the neutral category, as seen in Figure 1.0. The statistical results in table 2 showed; (HPU Mean = 32.38 ± 4.885 , Non-HPUs Mean = 32.42 ± 4.885 ; $p = 0.947$) are consistent with this portrayal, indicating that HPUs students' experiences are similar to those of other Institution students.

Service-Specific Satisfaction Analysis

The study analysed various satisfaction indicators through nine comparative metrics (Figures 1.0-1.8). Figure 1.0 focused on satisfaction with on-campus health service quality while Figure 1.1 examined how well the health coverage addressed particular student health needs, Figure 1.2, which looked at satisfaction with the availability of health insurance information, caught the communication element. Figure 1.3 assessed mental health services, which are becoming a more important part of student healthcare. Figure 1.4, which evaluated satisfaction with health insurance expenses, addressed the financial factor. Figure 1.5 looked at the quality of customer service provided by insurance companies, while Figure 1.6 concentrated on the important topic of appointment wait times. Figure 1.7 examined the availability of preventive care services, and Figure 1.8 offered a thorough analysis of overall satisfaction with the healthcare experience.

The 5-point Likert scale used by each figure, which ranged from "Very Dissatisfied" to "Very Satisfied," allowed for a thorough comparison of the experiences of HPU and non-HPU students. By identifying areas of strength and room for improvement in student healthcare delivery systems, this systematic evaluation across numerous healthcare dimensions offers insightful information about the efficacy and perceived quality of health services in various university settings. Although the magnitude of these disparities varies depending on various elements of the student experience, the visual analysis indicates that there are quantifiable differences in student satisfaction between HPU and non-HPU universities. This thorough analysis adds to our knowledge of the efficacy of health-promoting programs in higher education settings by offering insightful information about the relative satisfaction levels of HPU and non-HPU students. According to earlier studies, our results (figures 1.3, 1.2 & 1.1) support the notion that cost sensitivity (Binnendijk et al., 2013), healthcare provider quality (Andaleeb et al., 2007), and comprehensive coverage (Han & Hwang, 2013) respectively, are important factors that influence satisfaction.

This research offers valuable insights into the satisfaction levels regarding health insurance among international students in Pune, India, and underscores the complex interactions among institutional frameworks, demographic factors, and academic fields that influence their experiences. By examining data collected from 412 participants at

Health Promoting University (HPU) and Non-Health Promoting Universities (Non-HPUs), the results indicate that overall satisfaction levels are similar between both groups (HPU Mean=32.38±4.885, Non-HPUs Mean=32.42±4.885). Nevertheless, significant differences arise in terms of demographic characteristics, gender, and academic fields, as well as the varying institutional strategies related to health promotion.

The idea of Health Promoting Universities (HPUs) incorporates health promotion into institutional policies, focusing on comprehensive student well-being. Programs such as health insurance orientation, specialized health support desks, and wellness initiatives align with international standards like the Ottawa Charter for Health Promotion (Karnataka State Higher Education Academy, 2022). Over the years, these initiatives have demonstrated effectiveness; for example, the satisfaction rates at one HPU rose from 64.24% to 82.24% over a five-year span. These findings highlight the capability of HPUs to notably enhance the satisfaction of international students by catering to both their curative and preventive health care needs.

Gender was identified as a key factor, as male students indicated higher levels of satisfaction compared to their female counterparts ($\chi^2=27.895$, $p<0.001$). This difference reflects global trends where female students frequently face challenges such as restricted access to culturally relevant healthcare and insufficient support services (Arthur, 2017; Getaneh et al., 2023). Tackling these challenges through gender-sensitive healthcare initiatives and policies could help bridge this satisfaction differences between the two groups.

The area of academic study also had a significant impact on satisfaction levels ($\chi^2=17.891$, $p=0.007$), with students in medical sciences reporting greater satisfaction. This may be due to their better understanding of healthcare systems and the perceived importance of insurance benefits in relation to their education (Pawar et al., 2020). Customizing health services to meet the unique needs of students from various disciplines might further improve overall satisfaction. Although both HPUs and Non-HPUs showed similar levels of overall satisfaction, HPUs excelled in crucial aspects such as accessibility of services, quality of healthcare, and efficiency of claims processes. These advantages arise from organized wellness programs and forward-thinking health initiatives that align with global best practices, such as Germany's statutory health insurance for international students and Australia's culturally sensitive care models (Körner et al., 2016; Arthur, 2017). In contrast, non-HPUs do not have such integrated approaches, resulting in slightly lower satisfaction rates and underscoring the necessity for implementing comparable health promotion strategies.

The study also highlights the crucial role health insurance plays in ensuring the continuation of one's studies. It is evident that access to proper health insurance is essential for international students, as it helps safeguard both academic progress and well-being, enabling students to overcome unforeseen health challenges.

- *A 28-year-old student from Nigeria belonging to Health promoting University quotes - I was recently admitted to the University Hospital for a haemorrhoidectomy, and I'm incredibly grateful for the support I received. The insurance plan not only covered the expenses for my 5-day hospital stay but also took care of the pre-surgery tests, making the entire process smoother and less stressful. Having prior knowledge of the insurance coverage was immensely helpful, as it alleviated many concerns I had. There was a point when I thought I might have to leave my studies behind due to the situation, but thanks to the insurance, majority of the expenses were covered.*

Despite the advantages of HPUs, challenges persist within both types of institutions. Significant issues such as delays in claims processing and high premium costs have been identified, aligning with previous studies (Ahire & Rishipathak, 2020; Han & Hwang, 2013). Enhancing the claims process and increasing transparency could mitigate these problems and lead to improved satisfaction rates.

Maintaining the health of international students post pandemic, controlling their visa status, having sufficient financial support, controlling their health insurance in United State, and accessing healthcare services are their top priorities. Faculty, workers, and administrators at universities who are looking to assist overseas students should think about providing them with more knowledge about how to stay healthy through social distancing and other strategies, guiding them through the U.S. health insurance systems during the epidemic, and securing medical treatment both on and off campus(Chirikov & Soria, 2020). This could also explains the relationships the global effect of satisfaction level of health insurance in relation to health promoting universities during pandemic period.

The results highlight essential areas for policy advancement. Prioritizing gender-sensitive healthcare services, discipline-specific assistance, and streamlined claims processes is necessary to bridge satisfaction gaps. Furthermore, expanding the HPU model to more institutions could provide a framework for incorporating health promotion into policies, supporting the World Health Organization's global health initiatives (Reddy & Selvaraj, 2015). These measures would not only improve satisfaction levels but also contribute to broader goals of universal health coverage and equitable healthcare access for international students.

5.3 Specific Areas for Service Improvement and Policy

5.3.1 Service Improvements

- Streamlining Claims Processing: Simplifying the claim process by reducing processing time to enhance student satisfaction.
- Gender-Sensitive Services: Introduce culturally competent, female-focused healthcare services, including women-only clinics and multilingual support staff.
- Mental Health Coverage: Expand mental health services, including counselling and wellness programs, tailored to the needs of international students.
- Information Dissemination: Improve accessibility and clarity of information about insurance coverage through digital and on-campus resources.
- Tailored Support for Disciplines: Provide discipline-specific healthcare services, particularly for non-medical students who may lack familiarity with healthcare systems.

5.3.2 Policy Recommendations

- Adopt the HPU Model: Encourage other universities to integrate health promotion into their institutional framework, focusing on preventive care and wellness initiatives.
- Subsidized Premiums: Implement subsidies or flexible payment plans for students facing financial constraints to improve inclusivity.
- Mandatory Orientation Programs: Standardize orientation programs on health insurance and wellness across all universities.
- Collaboration with Local Health Providers: Partner with local healthcare organizations to offer specialized services and reduce the burden on institutional facilities.
- Regular Monitoring and Feedback: Establish a feedback mechanism to continuously assess and improve health insurance services based on student needs

5.4 Generalisation of the findings

The findings of the study on health-promoting and non-health-promoting universities, along with factors affecting the satisfaction levels of foreign students availing health insurance in Pune, can be generalized to other universities in different cities across India. This is because the insurance coverage for international student populations is similar nationwide, and registered insurance companies offering coverage are consistent across the country. Additionally, the structural setup of universities follows a similar framework across India. Health-promoting universities, in particular, have the added advantage of embedding health promotion within their culture, fostering an environment that prioritizes well-being for students and staff alike. These factors contribute significantly to the overall satisfaction levels of foreign students, as their health needs are better integrated into the university's culture and health services.

5.5 Limitation

- Geographic Scope: The study was limited to universities in Pune, potentially affecting generalizability to other Indian regions.
- Temporal Limitations: Data collection occurred during a specific period (May-June 2024), not accounting for seasonal variations in healthcare needs.
- Response Bias: The predominance of neutral responses might indicate response bias or reluctance to express strong opinions.
- Sample Distribution: Uneven distribution across gender and academic disciplines might affect result interpretation.
- Cultural Factors: The study didn't deeply explore cultural differences that might influence satisfaction levels.

6. Conclusion

This research demonstrates that health insurance satisfaction among foreign students in Pune is influenced by multiple factors, with gender and academic discipline emerging as significant determinants. While Health Promoting University framework shows promise in addressing student healthcare needs, there remains room for improvement across all institutions. The study highlights the need for gender-sensitive healthcare services and discipline-specific support systems. Future policy development should focus on streamlining claims processes, improving information accessibility, and addressing the specific needs of female students. The findings suggest that adopting comprehensive health promotion frameworks, similar to WHO HPU's model, could enhance satisfaction levels across institutions serving international students in India.

Universities aiming to improve health insurance satisfaction for foreign students should consider integrating health promotion into the university culture can create a more supportive environment for international students, ensuring their health and well-being are prioritized. Universities should also evaluate and strengthen their partnerships with insurance providers to ensure comprehensive, accessible, and affordable coverage that meets the specific needs of foreign students. Universities should take proactive steps to educate foreign students about health insurance to ensure they fully understand their coverage and are empowered to make informed decisions. This can be achieved through a variety of practical initiatives Orientation Programs, Clear Written Guides, dedicated help desk & Support Services for Insurance.

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Appendices

Development of a Likert questionnaire with 10 parameters and 5 scores for each parameter. Each parameter was assessed:

- Overall satisfaction with your current health insurance
- Satisfaction with the range of services covered by your health insurance
- Satisfaction with the quality of healthcare providers available through your insurance
- Satisfaction with the cost of your health insurance premiums
- Satisfaction with the process of claiming insurance benefits
- Satisfaction with the customer service provided by your insurance company:
- Satisfaction with the information provided about your health insurance coverage
- Satisfaction with the availability of healthcare facilities near your residence (Hostels)
- For those with multiple morbidities: Satisfaction with the coverage for your specific health conditions
- Overall satisfaction with the Insurance policy

Outcome variables

- Overall satisfaction scores
- Satisfaction with range of services scores
- Satisfaction with quality of healthcare providers scores
- Satisfaction with cost of insurance premium scores
- Satisfaction with claim process scores
- Satisfaction with customers services scores
- Satisfaction with the information scores

- Satisfaction with the availability of healthcare facilities scores
- Satisfaction with the coverage for your specific health conditions scores
- Satisfaction with Insurance policy Score

Biographies

Dr. Abubakar Tijjani Shehu is a dedicated medical professional with five years of experience and a strong research interest in Health Insurance, Health Policy and Universal Health Coverage (UHC). Currently pursuing a Master's in Business Administration (MBA) in Hospital and Healthcare Management at Institute of Health Sciences, Symbiosis International University (Deemed University), Pune, India. He graduated from Bayero University, Kano, Nigeria in 2019 and completed his Housemanship at Aminu Kano Teaching Hospital (AKTH), Kano State, Nigeria. Following his Housemanship, Dr. Shehu, fulfilled the National Youth Service Corps (NYSC) program, further solidifying his commitment to serving his community. During his medical training, he demonstrated exceptional leadership qualities, spearheading medical outreach programs to support underserved populations. Dr. Shehu's passion for service and advocacy extended to his tenure as Chairman of the Young Doctors Forum of the Nigerian Medical Association, Kano, from 2020 to 2022. In this role, he championed the welfare and professional development of young doctors, showcasing his dedication to the medical profession and leadership excellence. With a vision of improving healthcare systems and ensuring equitable access to quality care, Dr. Shehu continues to combine his clinical expertise, research interests, and leadership capabilities to contribute meaningfully to humanity. His journey reflects a deep-seated commitment to making a lasting impact in healthcare and beyond.

Dr. Neha Ahire, currently working as Assistant Professor at Symbiosis International (Deemed University), is a distinguished academic and researcher in health insurance and Universal Health Coverage (UHC), specializing in healthcare policy and systems. With a PhD, she serves as a mentor for master's students and a PhD supervisor at Symbiosis International (Deemed University), Pune, India. Dr. Ahire has published extensively in top-tier journals and presented at international conferences, contributing to the improvement of healthcare access and quality. In addition to her academic work, she is a reviewer for prestigious journals, including the *Journal of Integrated Care* and the *International Journal of Health Planning and Management*.

Dr. Ahire has been recognized for her research, and has been awarded prizes and national & International Conferences. She has also chaired sessions at various national conferences. As a research supervisor, she oversees master's student research projects and plays a pivotal role in the academic activities at the University. Dr. Ahire is an associate member of the Consortium of Accredited Healthcare Organizations (CAHO) and APA (American Psychological Association) and has made significant contributions to healthcare education.

Dr Rashmi. Ranjan Guru, M.B.B.S, MD (Hospital Administration) is a Deputy Medical Superintendent with twelve years of medical experiences in the field of patient care management, clinical operations, patient satisfaction, optimum human resource management, public relations, medical record, supportive services of healthcare organization, development during commissioning period of the hospital building, infection control practices, lean management, medical laws & industrial relations, work place safety, conducting medical board meetings, risk management, corporate social responsibility, green hospital building management system, leadership, team management & training currently working as senior medical administrator in institute of national importance and former doctor at AIIMS , IIT, MAX & FORTIS Hospitals.

Pharm. Umar Salisu Abdulhamid, is a passionate pharmacist committed to transforming healthcare delivery through technology. He holds a Bachelor's in Pharmacy from Ahmadu Bello University, Zaria, Nigeria, an MBA in Hospital and Healthcare Management, and a Master's in Healthcare IT from Symbiosis International University, Pune. His academic and professional journey is driven by a mission to improve healthcare accessibility, particularly in developing regions. Growing up in Northern Nigeria, he witnessed the challenges of delivering efficient and equitable healthcare, inspiring his research on leveraging Healthcare IT, Insurance, and Pharmaceutical Management to bridge these gaps. A certified Six Sigma Green Belt expert, Umar applies data-driven methodologies to enhance healthcare efficiency and outcomes. His doctoral research focuses on digital transformation in Africa's healthcare sector, aiming to develop scalable and sustainable solutions for underserved populations. With expertise in quality management and process optimization, he envisions a future where technology-driven innovations revolutionize healthcare delivery. Committed to creating lasting impact, he believes research is a powerful tool for driving meaningful change in resource-limited settings.