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Original Research

Perception of Enrollee Health Insurance Fraud among Healthcare Workers at a Tertiary Hospital in Kaduna State, North-western Nigeria

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Abstract

Background: Fraud in healthcare is an immense challenge that poses a direct threat to sustainable healthcare financing across low and high-income countries. Enrollee health insurance fraud is a relatively understudied form of fraud that thrives in settings characterized by weak and fragmented healthcare systems. This study examined the knowledge and perception of enrollee health insurance fraud among healthcare workers at a tertiary hospital in Kaduna State, North-western Nigeria.

Methodology: Using a stratified sampling technique, 232 healthcare workers were interviewed using a structured, self-administered questionnaire that was developed for the study. Data on knowledge and perception of enrollee fraud was obtained and analysed using IBM SPSS Statistics. The data was presented using frequency distribution tables, while figures were drawn using Microsoft Excel.

Results: The majority of the respondents were clinical staff, including medical doctors (29.7%), nurses (31.5%) and health assistants (14.2%). A total of170 (73.3%) respondents were aware of enrollee fraud and up to 113 (66.5%) encountered at least one case of enrollee fraud. The most common types of enrollee fraud identified by the respondents were impersonation (67.7%) and faking symptoms (57.1%). Respondents recognised adverse consequences of enrollee fraud, including depletion of resources (74.1%), blocking eligible patients from accessing care (73.6%), and exhaustion of healthcare workers (61.8%). A total of 111 (65.3%) agreed that enrollee fraud is common in the hospital and despite a high level of awareness, only 72 (42.3%) agreed that they are adequately informed about enrollee fraud.

Conclusion: There was a high level of awareness of enrollee fraud among the respondents with a good perception of its manifestations and implications on healthcare delivery. It is recommended that immediate steps be taken to educate healthcare workers and enhance their capacity to detect and deter enrollee fraud while investing in long-term strategic measures and technology-based solutions.

Keywords: Health Insurance; Insurance Fraud; Medical Fraud; Healthcare Financing; Nigeria; NHIA.

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Introduction

Health insurance is a form of health financing that involves pre-payment to avoid out-of-pocket expenditure, thus enabling access to the necessary healthcare services when needed, irrespective of the capacity to pay for such services. Essentially, health insurance involves the application of insurance principles to pay for predetermined services or medical benefits in a bid to achieve equitable access to health services.[1] The idea of Universal Health Coverage(UHC) aims to provide essential services to all individuals without financial hardship, thus, aligning with several developmental visions, including some of the Sustainable Development Goals (SDGs).[2] Health insurance also strengthens health system resilience and promotes sustainable development by ensuring equitable access to quality care. In Nigeria, initiatives like the National Health Insurance Scheme (NHIS) focus on improving access to healthcare for the population through revenue mobilization, risk pooling and strategic purchasing via Health Maintenance Organizations (HMOs). In 2022, the National Health Insurance Authority Act (NHIA Act, 2022) repealed the NHIS Act (2004), providing a legal basis for mandatory participation in the scheme and the establishment of a vulnerable group fund.[2,3]

Insurance fraud is an important economic problem that threatens the viability of insurance institutions and related businesses in the health sector. It is defined as "an act or omission intended to gain dishonest advantage either for the fraudster or for the purpose of other parties."[4,5] Health insurance fraud is the commission of fraud in health insurance claims[6] and based on who committed the fraud, it is categorized into subscriber (enrollee) fraud, service provider fraud, and insurance carrier fraud.[7,8] All forms of health insurance fraud are motivated by financial gain and facilitated by systemic vulnerabilities. They lead to increased healthcare costs and compromise patient safety, ultimately undermining trust in healthcare systems.[9,10]

Globally, health insurance fraud costs billions of dollars.[11,12] In 2015, the United States federal agencies estimated that of the nearly 3.2 trillion dollars expended on healthcare, at least 3% was lost to fraud, waste, and abuse.[8] The European Healthcare Fraud & Corruption Network also warned of increasing trend in healthcare fraud, noting that global annual loss to healthcare fraud could be as high as USD 455 billion. In addition, studies have shown that health insurance fraud is ripe in many climes, further compromising health systems in low, middle, and high-income countries.[13–19] While most studies focused on service provider fraud, being the most prevalent form, evidence suggests that enrollee fraud also persists, especially where services are fragmented and critical identification systems are lacking. This study, therefore, explores the problem of enrollee health insurance fraud in one of the largest health facilities in North-western Nigeria. Enrollee fraud, like other fraudulent activities, undermines the effectiveness of the national health insurance services and threatens the achievement of UHC. As studies are scarce, this study becomes timely and relevant to understanding the knowledge and perception of healthcare workers towards enrollees' health insurance fraud. Findings from this study would prompt further research in this area and may inform policy development, ultimately strengthening healthcare delivery and ensuring sustainable access to essential healthcare services.

Methodology

Study setting

This was a descriptive cross-sectional study carried out among healthcare workers at Ahmadu Bello University Teaching Hospital, one of the largest and pioneer hospitals in Northern Nigeria. The facility is an 800-bed capacity tertiary hospital located at Giwa Local Government Area of Kaduna State, North-western Nigeria. Currently, the hospital serves as a referral centre for states within the catchment area and provides services ranging from general outpatient services to highly specialized treatment services, including cancer treatment, neonatal care, and various surgical services.

Sampling of participants

A stratified sampling was used to select a representative sample of healthcare workers in the hospital based on cadre. The number of participants selected from each cadre was proportional to the size of the cadre and within each cadre, a systematic sampling technique was used to select participants. Overall, 232 healthcare workers were selected from a total of 2,107 healthcare workers in the hospital, comprising medical doctors, nurses, midwives, health assistants, pharmacists, laboratory, health information, and administrative staff. As the study could not find previous works to support sample size estimation, a pilot exercise was conducted. Forty participants were recruited during the pilot phase and 33 (82.5%) were aware of enrollee health insurance fraud. As such, using Cochran's formula,[20]and given a finite population of 2,107 healthcare workers, the study estimated that a sample size of 232 participants would have sufficient power to estimate awareness of health insurance fraud within a 5% margin of error.

Data collection

The data was collected using a structured, close-ended questionnaire developed by the researchers based on a comprehensive review of the literature. The questionnaire was pre-tested and validated by the research team before an electronic version of the questionnaire was deployed among eligible participants. Selected participants who consented to the study were given a link to respond to the questionnaire anonymously.

Data analysis

The data obtained from the study was managed in Microsoft Excel® (2019) and analysed using IBM SPSS Statistics® (version 25.0). Quantitative continuous data, such as the age of respondents, were explored and presented using mean (standard deviation). However, years of experience, which appeared to be negatively skewed, were grouped into age groups and presented as a categorical variable. Other categorical variables were presented using frequency tables. Additionally, simple and composite bar charts were drawn using Microsoft Excel® to aid visualization.

Ethical considerations

The protocol for the study received ethical approval from the Health Research Ethics Committee of Ahmadu Bello University Teaching Hospital on the 19th of October 2023 (NHREC/TR/ABUTH-NHREC/01/02/23). Written informed consent was obtained from all participants with the option to either voluntarily participate, decline, or withdraw at any point. The study did not collect any identifying information, and data collected during the study was kept confidential and used only for academic purposes.

Results

Socio-demographic characteristics

At the end of the data collection exercise, a total of 232 valid responses were obtained. Table 1 shows the sociodemographic characteristics of the respondents. The majority were young persons below the age of 40 years (67.7%), less than half of which were female staff (45.7%). The majority of them were clinical staff, including medical doctors (29.7%), nurses/midwives (31.5%) and health assistants (14.2%). About half of the respondents worked in the hospital for less than five years at the time of the study.

Table 1: Sociodemographic characteristics of the respondents (N = 232)

Variable	Frequency	Percent
Age group (years)		
20-29	39	16.8
30-39	118	50.9
40-49	56	24.1
50-59	18	7.8
60 and above	1	0.4
Mean (SD) = 36.5 (8.0) years		
Sex		
Male	126	54.3
Female	106	45.7
Ethnicity		
Hausa	120	51.7
Yoruba	25	10.8
Igbo	10	4.3
Others*	77	33.2
Cadre		
Doctors	69	29.7
Nurses/Midwives	73	31.5
Health Assistants	33	14.2
Laboratory staff	20	8.6
Pharmacy staff	10	4.3
Health Information staff	9	3.9
Administrative Staff	18	7.8
Work experience (years)		
Less than 1	40	17.2
1-4	66	28.5
5-9	45	19.4
10 and above	81	34.9

*Others: Anang, Awak, Bade, Ebira, Fulani, Gade, Idoma, Nupe, Tiv, Tula, Waja

Knowledge of health insurance fraud

Regarding the knowledge of health insurance fraud, 170 (73.3%) of the hospital staff heard of health insurance fraud, with the commonest sources of information being co-workers and patients (Table 2). Of the three categories of health insurance fraud, the most common type identified by the respondents was subscriber (enrollee) fraud, identified by 116 (68.2%) respondents, followed by service provider fraud (56.5%). The most common types of enrollee-related fraud identified were the use of an enrollee's folder (67.7%) and faking symptoms to obtain a prescription (57.1%). Regarding the consequences of health insurance fraud, many identified depletion of healthcare resources (74.1%), blocking eligible patients from accessing timely healthcare (73.6%), and exhaustion of healthcare workers (61.8%). In addition, up to 113 (66.5%) respondents confirmed that they had encountered at least one case of enrollee health insurance fraud during their practice at the hospital.

Table 2: Knowledge of health insurance fraud among the respondents (N = 232)

Variable	Frequency	Percent
Ever heard of health insurance fraud		
Yes	170	73.3
No	62	26.7
Sources of information (n = 170)*		
Co-workers	98	57.7
Patients	67	39.1
Family and friends	33	19.4
Television	29	17.1
Radio	21	12.4
Prefer not to say	9	5.3
Types of health insurance fraud (n = 170)*		
Subscriber (enrollee) fraud	116	68.2
Service provider fraud	96	56.5
Carrier (HMO) fraud	80	47.1
Types of enrollee fraud (n = 170)*		
Using another enrollee's folder	115	67.7
Faking symptoms to obtain a prescription	97	57.1
Manipulating diagnosis to obtain expensive drugs	73	42.9
Lying about eligibility	50	29.4
Visiting different hospitals to obtain multiple prescriptions	42	24.7
Self-referrals to obtain expensive services	37	21.8
Consequences of health insurance fraud (n = 170)*		
Depletion of healthcare resources	126	74.1
Blocking other patients from timely access to care	125	73.6
Manpower exhaustion	105	61.8
Moral hazard to other enrollees	83	48.8
Antimicrobial resistance	78	45.9
Drug overdose	65	38.2
Ever encountered a case of enrollee fraud (n = 170)		
Yes	113	66.5
No	57	33.5

*Multiple response questions

Perceptions of enrollee fraud

Figure 1 describes the perception of respondents on parties they believed could be involved in health insurance fraud. The majority of the respondents identified subscribers or enrollees' (71.2%). Other parties that were mentioned by the respondents included carriers or HMOs (58.8%), administrative staff (49.4%), and health assistants (45.9%) among several others.

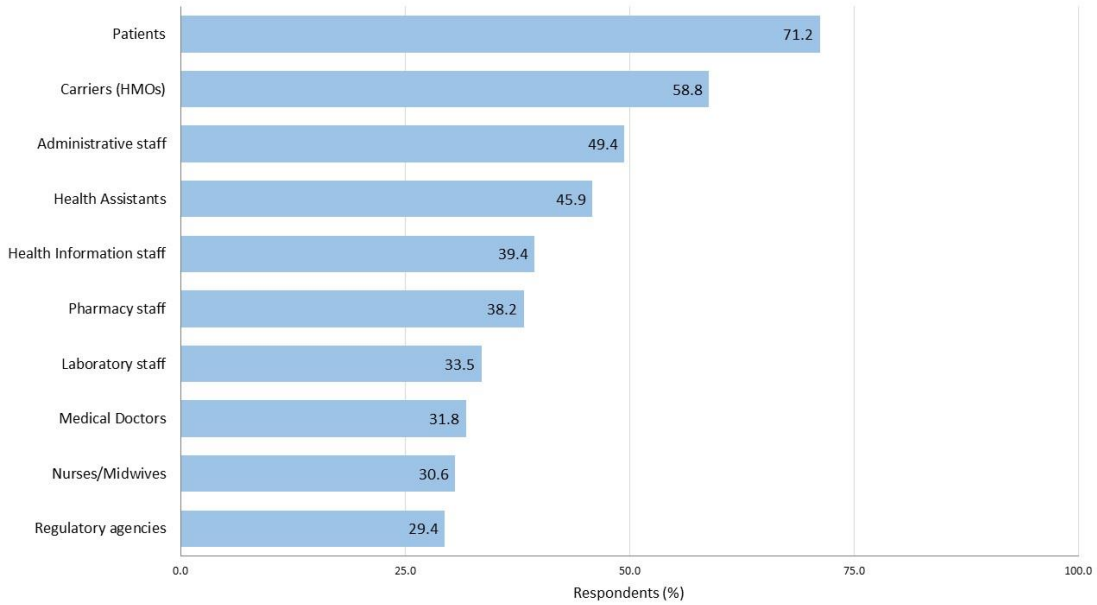

Figure 1. Perception of respondents on parties that could be involved in health insurance fraud (n = 170)

When the respondents were prompted to identify service areas within the hospital environment where they believed health insurance fraud was taking place, nearly all service areas were identified. As shown in Figure 2, service areas identified included health insurance offices (72.4%), general outpatients' department (72.4%), laboratories (67.6%), and pharmacies (65.3%) among several other service areas.

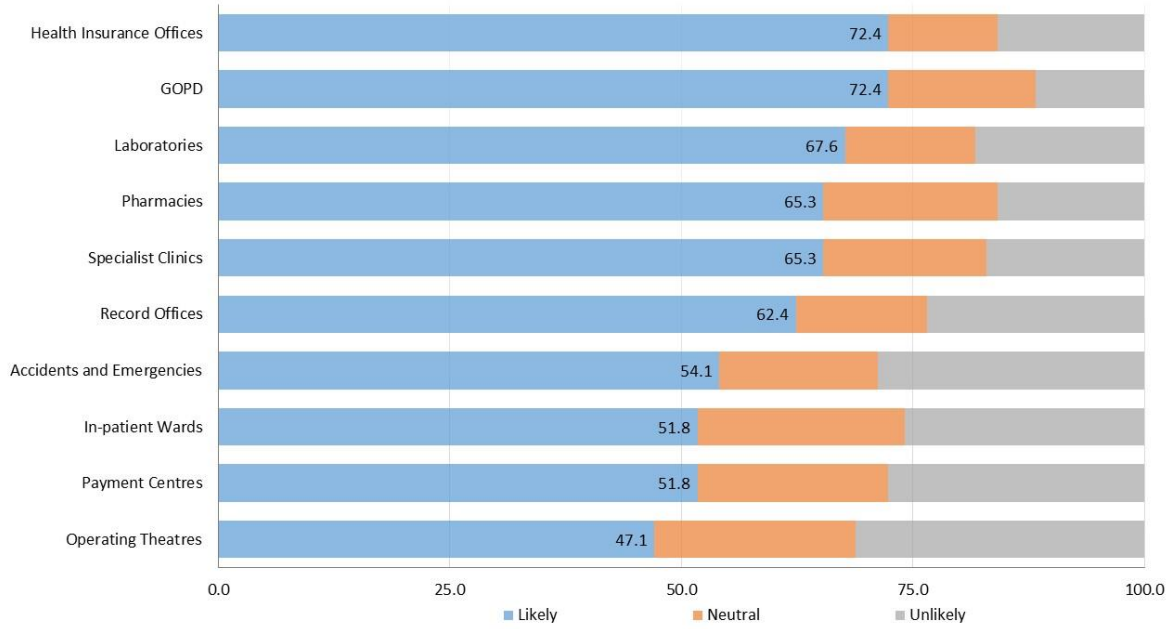

Figure 2. Perception of respondents on service areas where enrollees commit health insurance fraud (n = 170)

Table 3 shows the perceived commonality of enrollee health insurance fraud in the hospital. The majority (65.3%) of respondents agreed that enrollee fraud is common in the hospital, while 28 (16.5%) disagreed. Similarly, 130 (76.5%) agreed that enrollee fraud negatively affects the quality of healthcare being provided. Although the majority of respondents agreed that reporting enrollee fraud is important for prevention, less than half of the participants (42.3%) agreed that healthcare workers in the hospital were adequately informed about enrollee fraud.

Table 3: Perception of enrollee health insurance fraud among the respondents (n = 170)

Perception	Agree n (%)	Neutral n (%)	Disagree n (%)
Enrollee fraud is common in this hospital	111 (65.3)	31 (18.2)	28 (16.5)
Enrollee fraud negatively affects healthcare quality	130 (76.5)	14 (8.2)	26 (15.3)
HCWs are adequately informed about enrollee fraud	72 (42.3)	27 (15.9)	71 (41.8)
Reporting enrollee fraud is important for the prevention	141 (2.9)	12 (7.1)	17 (10.0)

HCW: Healthcare workers

Discussion

Universal access to health services is key to attaining a healthy life and well-being for all individuals of all ages.[21,22] This can be achieved through effective social health insurance schemes and other measures that protect individuals against catastrophic health expenditures.[23] However, the effectiveness of social health insurance schemes can be undermined by fraudulent practices. Enrollee fraud, like other forms of fraudulent practices, weakens the system and poses a direct threat to efficient and sustainable health financing.[15]As such, measures are needed to address it, and the level of healthcare worker's knowledge and perceptions on enrollee fraud may play a key role in determining their ability to mitigate it. This study sets out to assess what healthcare workers at Ahmadu Bello University Teaching Hospital knew and perceived about enrollee fraud.

The study found that most of the hospital staff were aware of health insurance fraud. Such a level of awareness is expected, given that for many years, the hospital has been a major NHIS service provider. While being aware of the existence of enrollee fraud could potentially help in identifying it whenever it happens, the fact that less than half of the respondents felt they were adequately informed about it points to an urgent need for the facility to institute measures that will educate the healthcare workers and equip them with the necessary skills to prevent, detect and deter any incidence of fraud, be it enrollee or provider fraud.[10,24] It also speaks to the need for greater involvement and cooperation between healthcare providers and the regulatory authorities towards providing information-sharing, oversight functions, and tools necessary to combat health insurance fraud at all levels.[25]

This study found that many of the respondents were familiar with the various typologies of health insurance fraud, including the various tactics employed by enrollees to perpetrate fraud. They also identified some of the consequences of enrollee fraud on service delivery. The perceptions of the respondents equally portrayed good attitudes, as many viewed such actions as detrimental to the entire health system – an action that needed to be reported. The latter finding is in keeping with findings from an online survey in China, where the majority of the respondents (81.8%)indicated support for reporting health insurance fraud.[13] Reporting health insurance fraud, also known as "whistleblowing" is one of the key approaches used to deter the occurrence of health insurance fraud.[25] As such, the high level of awareness and favourable perceptions demonstrated by the respondents should be leveraged to make them agents of change in the collective fight against sabotage and corrupt practices in the health sector.

In this study, most of the respondents agreed that enrollee health insurance fraud was common, with more than half confirming that they had encountered a case before. Furthermore, most of the respondents expressed concerns that health insurance fraud harms patient care, which is consistent with conclusions made in a previous review of the literature.[8] Therefore, the facility management must take swift and appropriate actions against this development as further delay may create an atmosphere of acceptance and tolerance, with attendant moral hazard to other enrollees.

Concerning parties engaged in insurance fraud, respondents readily identified enrollees' as the majority. They also mentioned carriers or HMOs. Previous studies appear to suggest that provider fraud tends to be the most prevalent form of health insurance fraud.[8] However, this is understandable, given that the respondents, being healthcare providers, are more likely to notice or detect enrollee fraud compared to fraud committed by a fellow healthcare provider. Moreover, provider fraud may be perpetrated by someone at a level that is beyond ordinary healthcare workers to know or even understand. It would require some level of auditing or technical processes involving facility managers, HMOs, or even regulatory authorities to detect high-level fraud such as provider or carrier fraud. Another reason that could be argued is bias from the respondents. A social desirability bias on the side of the respondents, who were all healthcare providers, may encourage them to identify enrollee fraud as the most prevalent form of fraud instead of provider fraud, which would cast them in a bad light.

Findings from this study are limited by the cross-sectional nature of the study and the social desirability bias, which could prompt the respondents to feel more comfortable identifying enrollee instead of provider fraud. Also, because of the social nature of hospital environments and the interactions among healthcare providers, a single case of enrollee fraud may be widely publicised within a facility, thus, giving the impression among many that enrollee fraud is common. This is especially true in our study, given that the majority of the respondents identified co-workers as their source of information. In addition, because the study reported on knowledge and individual perceptions, the findings from the study must be interpreted as such, and regardless of how common a perception is, it may not be taken as factual evidence. Consequently, findings from this study cannot be used to indict any cadre of healthcare workers or individuals working at certain places. Empirical evidence must be obtained to arrive at such conclusions. Nevertheless, this study explored the level of awareness and views on enrollee health insurance fraud, a relatively understudied aspect of health insurance fraud. It also suggests areas and actions that facility managers and regulatory authorities could take to support healthcare workers to identify and curtail enrollee fraud.

Conclusion

This study explored the concept of enrollee fraud in one of the largest healthcare facilities in North-western Nigeria, with findings suggestive of a high level of awareness and frequency of occurrence across multiple service delivery areas. Further studies are recommended to broadly understand the nature, motives, and extent of health insurance fraud in healthcare settings in Nigeria, as this type of fraud appears to be grossly understudied. There is a need for health insurance regulators to work with key stakeholders to create more awareness of fraud and equip the relevant stakeholders with the necessary tools to prevent, detect, and deter fraud. Such measures may include sensitization programmes, comprehensive stakeholder engagements, use of innovative and technology-based solutions,[26,27] capacity-building initiatives for healthcare workers, creation of fraud reporting systems (e.g., anti-fraud hotlines), periodic audits and appropriate whistle-blower policies to encourage timely reporting of fraudulent activities.

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