



Original Article

Perceptions of Infection Control Among Nurses Regarding Barriers: A Qualitative Study

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ABSTRACT

Infection in healthcare facilities is an alarming public health problem in most growing countries. Hospital infections are the most significant worldwide complication of healthcare delivery. **Objectives:** To acquire a deeper understanding of infection control nurses' perspectives on the barriers regarding the infection control practices at the tertiary care hospitals Lahore. **Methods:** A qualitative exploratory research approach was utilized. Data was collected from the infection control nurses. Semi-structured interviews were used to collect the data from the 10 study participants through purposive sampling technique. Each interview was transcribed. The data were manually analyzed before being processed by NVIVO. **Results:** A thematic analysis was conducted to determine the themes and sub themes through Braun and Clark's (2006) concept of thematic analysis. The researcher identified three major themes and few minor. The major themes were organization related barriers, health care workers related barriers and patients and family related barriers. Organization lack of facilities was among the top barriers to infection prevention and control. **Conclusions:** Most of the participants had good and enough information regarding the infection prevention and control programs, but it doesn't mean that these activities and implementations will be practiced in routine manners. Three major themes with different barriers were identified. Themes well explained regarding barriers in implementing infection control practices in both public and private hospitals.

INTRODUCTION

Nurses play an essential role in promoting patients' health and providing medical care and treatment. ICP practice, often known as IPC, is one basic responsibility of ICN at all health care settings. IPC practices are "scientific ideas and practical solutions to prevent infection-related harm to patients and health care personnel engaged in the delivery of health care" [1]. To limit HAIs in patients and nurses, it is vital to adhere to the IPC's principles and practices. Infection in healthcare facilities is an alarming public health problem in most growing countries. Hospital infections are the most significant worldwide complication of healthcare delivery. It complicates patient care and increases hospital stays [2]. Presently, the overall occurrence of hospital infection has been expanded in developing countries by 30%-50% and the burden of these infections surprisingly

increases [3]. HCWs especially nurses, are at high risk of occupational hazards because they perform their clinical duties in hospitals [4]. The hospital infection prevalence rate is increased worldwide. It accounts about 12 million in the united states in 2021, and the prevalence is high in intensive care units as compared to other units [5]. In the Asia-Pacific region, it is reported that 25% of patients carry hospital infection during their stay in the hospital, which has been estimated to be 20 times higher in growing countries compared to developed countries [6]. In South Asia, the HAIs prevalence rate is higher at 15.5 % in meta-analysis studies [7]. In Pakistan, the HAI rate in the intensive care unit is 25% as compared with the general medicine department [8]. According to recent research, 84,000-204,000 patients get infections from CLABSI and

around about 25000 die from this infection. 12–25% is a death incident rate of CLABSI. Another study shows that CAUTI account for about 40% which are 70% and 95% in intensive care units [9]. Additionally, of the patients who undergo surgery, 13% become infected with SSI [10]. SSI are the most common hospital infection [11]. SSI accounts for about 20% of all HAIs [12]. This could be related to poor IC practices or nurses may be unable to follow basic recommended measures due to barriers and challenges [13]. These are considered the major barriers to implementing infection prevention practices [14]. This study aimed to explore the perceptions of ICN on the main barriers to IC practices that hinder the effective implementation of IPC.

METHODS

The study was conducted in the infection control departments of different private and public tertiary Hospitals in Lahore. An exploratory qualitative study was used. The exploratory qualitative design is best fit in the study because it is flexible in nature [15]. This study aimed to explore the perceptions of infection control nurses regarding barriers of infection control practices. Purposive sampling was used to select the study participants [16]. The anticipated sample size ranged from 10 to 15. However, the definite sample size was 10 as data saturated. The data was collected between June and August, 2022. Interviews were conducted by the primary researcher in the Urdu language. Faces to face semi structured interviews were conducted. The interview questions were developed based on barriers in infection control practices. To enhance the quality of interviews, rigor was applied in terms of trustworthiness, credibility, and transferability. Conformability was checked by repeating the answer back to participants. Confidentiality of the data and interviews was assured in well manners. During the in-depth interviews, the following questions were asked:

1. What is infection and infection control practices? Please explain.
2. What is your point of view regarding the importance of infection prevention and control?
3. Tell me about the practices at your hospital?
4. What are the main barriers of infection prevention and control program at your hospital?
5. Your point of view regarding changes that need to improve infection control program

In addition to the interviews, demographic data including age, gender, qualification, years of experience and placement of job were collected by a self-administered questionnaire. The investigator was consensus-based conversation with enough informant feedback, which acts as a member check to provide more insights into the data

and improve the study's validity. The trustworthiness of the data was checked by adopting several reflexive practices. Secondly, to guarantee impartiality and consistency in the study findings, the researcher designed an audit trail throughout the analysis phase and kept diaries and research memos within the software. Finally, to eliminate biased opinions or preconceptions, the researcher was conduct regular feedback sessions and meet with specialists who have an unbiased view of the current study, assuring the collection of valid data. After bringing several codes together, categories were created. Categories were labeled and describe the connection with them. Categories were converted into themes, then into Sub-themes and major themes. The text was analyzed thematically. Potential bias or personal motivation should be removed by providing a rationale for the decision. Audio-recorded data was transcribed into text files, and then imported to NVIVO Data analysis software was conducted with NVIVO version 12, and the contents was analyzing thematically. The elements of trustworthiness criteria were followed to ensure the rigor of the study. Trustworthiness means the capability of the investigator to convince the reader regarding the accuracy, applicability, consistency and neutrality of the study findings and interpretations. Credibility is the confidence in representation of the data [17]. Non-verbal gestures of the participants were noted in the field notes. Moreover, pilot testing of the interview guide was done on two clinical instructors to ensure the credibility of the interview questions. For the purpose of dependability and stability of the data, interviews were transcribed in Urdu then translated in the English language for a thorough understanding of readers. Additionally, transcripts were validated by repeatedly listening to the recorded interviews. Conformability refers to ensuring the objectivity and adequacy of information. Conformability was assured by writing reflections to avoid self-biases. Transferability refers to whether the findings of the study would be applicable to other settings [17].

RESULTS

A total 10 infection control nurses participated in this research. They were all skillful in their field of infection prevention and control program. The demographic characteristics were shown in table 1.

Gender	N(%)
Male	03 (30%)
Female	07 (70%)
Age	
28-34	03 (30%)
35-40	07 (70%)
Qualifications	
Post RN	03 (30%)
Generic BS	04 (40%)
NMSN	03 (30%)

NMSN	03 (30%)
Teaching Experience	
2-6 years	07 (70%)
7-11 years	02 (20%)
≥ 11 years	01 (10%)
Clinical Experience	
2-6 years	07 (70%)
7-11 years	02 (20%)
≥ 11 years	01 (10%)

Table 1: Characteristics of the Participants

The participant's narratives were analyzed and placed into three main themes which were related to the research questions of the study. Mainly these categories were organizational, and HCW, patient/ family members' visitor barriers. Each theme has some sub themes as discussed below (figure 1 and figure 2). Description of the sub themes is provided in proceeding sections along with the relevant interview of the participants.

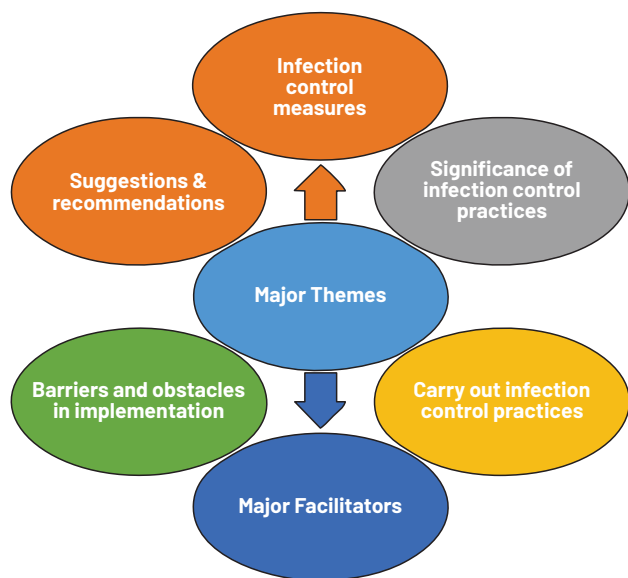


Figure 1: Major Themes of barriers

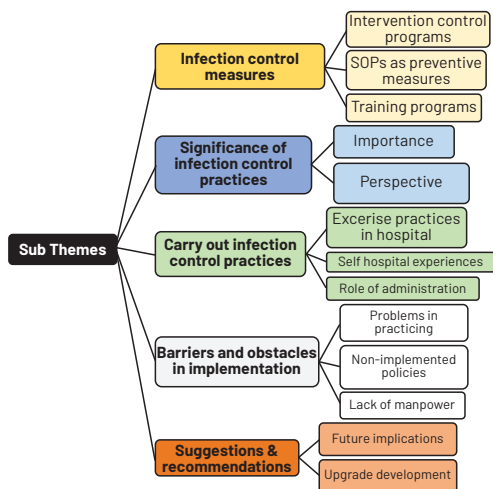


Figure 2: Sub themes of barriers

The participants identified various organizational factors as barriers to the IC practices. Some highlighted barriers are discussed below. The most of the ICN explain the shortage of resources in the departments as the leading barriers to IC practices. Some major facilities shortage addressed by the participants, such as lack of resources by the organization. Sometime participants faced the problems of unavailability of PPEs. Some time they have all facilities but there was no manpower to use these facilities. An important issue was present, and an ICN observed it. "I have never observed a single patient wash their body in the ward for the past few days, though there is a pipeline installed", but there was no hot water for winter season" (IC N-02). As illustrated by one of the ICN, "if we have good and advance facilities it will enhance our infection control practices but if equipment is not good and advance then it is a barrier in maintaining standards of " (ICN-04). In interviews most of the participants addressed the budget problems. Sometime very short budget kept for ICP or sometime this area ignored. An ICN stated that "Budget should be fixed so that we may know the availability of things in the budget. Budget is not fixed in any hospital." (ICN-01). Another participant said, "If our material and resources are short, budget is short, and then we are unable to control spread of infections. Reasonable budget for infection prevention material should be maintained" (ICN-06). Over all the participants mentioned in their interviews that regular monitoring should be done on regular basis for the maintenance of equipment and materials. In CSSD all equipment and apparatus must go through under proper observation and standardized procedures. Maintenance problems were reflected by most participants. One of the study participants stated that; "If we talk about administration, if it is good so it can be positive sign for the nurses as well as patients. Unfortunately, the management and administration is not fully involved in the maintenance of infection preventive equipment and measures so it may be proved as a main barrier." (ICN-7). Majority claimed that PPEs are available but not implemented strictly and it also becomes a barrier to IC practices. As stated by one of the participant that; "Poor maintenance of infection control measure can be cause of transmission of infection. Some healthcare providers have no knowledge and awareness about hand hygiene and they don't wear PPEs" (ICN-9). Participant mentioned that turn over of nurses create many problems in all dimention of work specially in IC practices. Skillful and experienced nurses leave their job due to lack of good oppurtunities . "We have a huge turnover of nurses in our hospital. We lose around one-third of our intensive care staff every six months to the west or the Middle East countries." (ICN-9). Participants told that it is difficult to

trained new nurses in IC practices and activities because of many reasons like time consuming and they need more nurses to supervise them. Also stated by another ICN that; "As patient inflow is very high but staff is short like ICU nurses. New employees are not trained due to shortage of time. It is also a big barrier." (ICN-3). As one of the participants stated that; "If the HCW providers, especially nurses short in number, then we are unable to provide good IC practices. High work load make us to just finish our work in a way where we cannot follow measures of infection control and prevention". (ICN-10). The main health care workers related barriers are described as under. Experience: Most of the participants in the discussion noted that less experienced HCWs did not adhere to proper standard measures. Participants in certain groups agreed that IPC practices were inadequate due to lack of experience. For instance, one of the participants articulated, "turnover is very important and basic barriers for infection prevention practices. When the experience staff leave and new staff join and new staff is not trained regarding the infection prevention measure it also affect infection control in hospitals." (ICN-05). As one of them articulated, "A clinical nurse should have clinical experience and should be able to supervise juniors in different areas like ICU, CCU, etc. she/he should be expert in handling different equipment and machinery used in clinical areas" (ICN-07). Most of the participants in the session agreed that nurses trained more effectively than other HCW. One study participant stated that; "negative behavior among HCW is also a barrier to the effective IC practices. Sometimes some health care workers don't want to learn, they don't act upon SOPs of ICP." (ICN-6). A participant said that "Negative attitude and non-compliance on professional care level is a barrier for practicing infection control measures. One person is giving good result while the other is not cooperating, it is also a hurdle." (ICN-4). Another participant stated that "lack of Professional communication is a perceived barrier." (ICN-8). It is essential for all hospital nurses and other HCWs to comprehend HAI and IPC standards. However, there was a knowledge gap regarding IPC practices, particularly among cleaners or caregivers. As stated by one participant "Lack of knowledge is a barrier as well. Nurses provide guidelines, lectures, implement on SOPs but audit and monitoring is not done." (ICN-3). One other participant stated that "if we have limited knowledge and lack of awareness regarding new technologies and new policies is also a barrier for prevention of IC." (ICN-5). In HCW, specifically nurses, are required to provide knowledge to patients regarding transmission based precautions. This information should be provided to Patients, as well as their family or cares. The most of the respondents in the discussion mentioned that

caregivers' or patients' family faced difficulties in practicing IPC due to lack of knowledge. Some patients and their guests have negative opinions of the hospital setting. One study participant stated that; "Non-compliance on SOPs by family care givers as they are confusing between hand washing and sanitization. Nurses are not giving proper time to it. It is also a barrier or noncompliance or showing negligence, least interest." (ICN-7). One participant stated that; "Culture is also a barrier e.g. most of families strictly avoid alcohol based hand sanitization. Conflict arises which not resolved, proved as barrier". (ICN-4). All participants believe that the presence of too many families and visitors affects IPC practice and activities badly. One participant stated that; "We have a limited staff over a huge number of patients." (ICN-10).

DISCUSSION

The study's findings about barriers and difficulties had a significant impact on IPC procedures. The results can be used to other setups that are comparable in order to improve IPC actions. To maintain the IPC practices for HCWs, patients, and families or visitors at the hospital, the provision of toilet, shower, hand-washing material, and other facilities availability is crucial. In this study, the lack of resources was seen as a barrier to proper IPC practice. This was further substantiated by a related study on nurses who ignored recommended safety measures [18]. This conclusion for IP practice was validated by a similar study. The study results found many factors as barriers such as shortage of staff and lack of facilities. Other significant barriers to the practice of infection prevention were a lack of equipment and supplies, as well as their routine maintenance. Lack of time to practice activities like infection prevention techniques [19]. A similar study found that not having enough time to practice IC in the workplace was a barrier [12]. One of the main barriers to IPC practice in this study was HCW experience. Some of the participants in the discussion agreed that skilled HCWs did not adhere to proper standard precautionary measures. The importance of nurses' skills in addition to technical knowledge was emphasized to have an impact on the infection control practices. According to earlier studies, there may be a professional gap between nurses and other HCW, when compared and found that nurses are more adherent with acceptable standard procedures. The majority of participants in this survey agreed that nurses were superior to other HCW in some practice of IPC. On the other hand, it was found that attitudes toward IPC (educational background relations), support of organizations and, educational system' priority, availability of time and capacity of staff were identified as the barriers. This knowledge barrier was shown to exist particularly in

cleaning staff or sweepers. In a related study, this kind of difference was also noted [20]. In a hospital setting, patients are more likely to get HAI than non-patients. HC professionals are encouraged to educate patients on how to take care of themselves to avoid infections. According to studies, patients and HCWs did not communicate well about the prevention of infections. An interviews based study conducted and found that increase in number of patients increase task of nurses which becomes a key barrier to IC at the hospital. According to the findings, there was a high rate of nursing staff turnover and increased patients flow in the hospital which became the major and significant barriers in the clinical overburden [2]. The most of participants in this survey stated that patients, families, or caregivers did not practice good infection prevention. Families, caregivers, and visitors therefore increase their numbers unnecessarily in the hospital workplace atmosphere as a result of their negative perception, which makes it difficult for HCWs to complete their duties and makes it difficult to practice infection prevention.

CONCLUSIONS

In this study the participant discussed about the perceptions regarding barriers and most of the participants had good and enough information regarding the infection prevention and control programs. Organizations can find new and developing areas for improvement by conducting a work systems evaluation. Tasks, people, and organizational level elements were crucial to the effectiveness of infection control procedures. The successful adoption of infection control procedures depends on institutional support for the practice as well as resource prioritization for the recruitment and retention of skilled nursing staff.

Conflicts of Interest

The authors declare no conflict of interest

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