ORIGINAL ARTICLE

OPEN ACCESS

# Exploring the Causes of Shortage of Nurses: Policy Recommendations & Framework for Nursing Sector of Pakistan.

**Maleeha Jawed[1], Junaid Rehman [2*], Shahjehan Manthar [3]**

*Author's Affiliation:*

[1&2] Mohammad Ali Jinnah University, Karachi, Pakistan
[3] Higher Education Commission, Karachi, Pakistan

*Article History:*

Submitted: October 10, 2025
Revised: November 24, 2025
Accepted: December 26, 2025
Published online: December 31, 2025

*Corresponding author(s):*

Junaid Rehman
junaid.rehman@jinnah.edu

A B S T R A C T

Nursing professionals play an important role in managing healthcare facilities and improving public health outcomes, nevertheless, the shortage of nurses has remained a global healthcare challenge. While the prior studies have highlighted various causes pertaining to the shortage of nurses, however, they mostly focused on identifying the challenges, and as such there was little emphasis on recommending practical solutions to those problems. Based on the gaps in the extant literature, the current study not only identifies the key causes related to the shortage of nurses in Pakistan, it additionally explores these challenges from a practical solution perspective. Accordingly, the data were collected using semi-structured interviews that involved various nursing professionals (Practitioners, Instructors, Administrators & Regulators) working in various provinces of the country. The results uncover the main causes of the brain drain within the nursing sector including the overall retention challenges faced to the healthcare organizations of Pakistan. Notably, the factors such as under-staffing, burnouts, inadequate patient-nurse ratio, staff well-being, outdated curriculum and weak nursing policy framework, appeared to be the key contributors of nurses' shortage and subsequent retention challenges within the nursing sector of Pakistan. This research thus offers a qualitatively-validated framework that highlights the key challenges faced to the nursing professionals coupled with some practical recommendations for enhancing performance, efficiency and retention ratio of the nursing workforce in Pakistan.

*Keywords:* Shortage of Nurses, Nursing Professionals, Public Health Management, Qualitative Framework, Policy Recommendations, Nursing Sector of Pakistan

## 1INTRODUCTION

The increasing pressure on the healthcare system is directly associated with the growing population of elderly individuals and the overall bed-occupancy rates in public hospitals (Abdulmohdi & Huan, 2025). The COVID-19 pandemic caused dramatic stress, anxiety and tiredness & burnouts in the nurses and especially the ones working in the hospitals having lower nurse-to-patient ratio (Leung et al., 2020). Nurses serve as a significant part of the healthcare workforce, playing a substantial role in delivering preventive and curative healthcare (Singh et al., 2024). It is impossible to imagine healthcare delivery without nurses that constitute roughly 56% of the global healthcare workforce (Shamsi & Peyravi, 2020). A sufficient number of nurses are required to reinforce the healthcare framework and improve access to healthcare to achieve desired healthcare outcomes (Tamata et al., 2023). The World Health Organization (WHO) estimates that a global shortage of 7.2 million health workers will occur by 2035, with a particular need for 12.9 million nurses (Tamata et al., 2021). It is projected that the world will require 5.9 million more nurses, with 89% needed in low-and middle-income nations (Roth et al., 2022; Joarder et al., 2021).

Shortage of nurses is a major problem in many countries that directly affects the quality and effectiveness of the healthcare services (Glarcher et al., 2025). Nurse shortages impact patient safety and the quality of healthcare negatively (Naseem et al., 2024). It is necessary to address the issue of shortages as soon as possible by making reforms and policy changes with a view to enhancing the overall quality of nursing education and retention of nurses as a whole (Lasater, 2024). In Pakistan, this scarcity has become a more serious issue as it interferes with the provision of basic medical services and becomes a significant challenge to the healthcare system of this country (Khaliq et al., 2025; Noor et al., 2024; Punjwani & Anwar, 2024). Poor enrollment in nursing schools and high nurse migration to other countries are other contributors to the nursing shortage in Pakistan (Firdos et al., 2020).

Another significant cause of shortage is "brain drain", which refers to the movement of trained healthcare staff from developing countries to developed ones (Khaliq et al., 2025; Meo et al., 2024). Lowell and Findlay (2001) state that brain drain occurs when a significant number of skilled and knowledgeable individuals leave a country for short or long periods without receiving higher compensation in their home country. The developed countries offer nurse educators higher pay and more growth opportunities, which means that nursing schools and colleges don't have enough nursing teachers (Firdos et al., 2020). Thus, there has been a little attention from the government on creating a plan for planning and managing the nursing staff, and as a result, Pakistani nurses' decision to work overseas is like a "double-edged sword" because their personal growth internationally conflicts with the development of healthcare in their homeland (Khowaja-Punjwani et al., 2023). The shortage of nurses has extensive consequences beyond the provision of healthcare, not only to the patients but also to their health. Many of the nurses pay a huge price for their services due to work stress, and issues such as stress, anxiety, musculoskeletal pain, and low blood pressure are common with them (Bavier, 2018).

The current research therefore explores the key factors contributing towards the nursing shortages in Pakistan and presents the evidence-based policy recommendations that are particularly aimed at overcoming shortages and enhancing the capacity of national healthcare system owing to the increasing healthcare needs of the population. The research is therefore structured to systematically address the following research questions:

*What are the primary causes that contribute to the shortage of nurses in Pakistan and what are the international best practices that can be implemented across the nursing sector with a view to addressing these problems in Pakistan.*

## 2 | LITERATURE REVIEW

### 2.1 | Shortage of Nurses

The scarcity of nurses is a global issue with multiple causes, including problems with individuals, schools, businesses, managers, and the regulations governing them (Tata et al., 2023). Shamis and Peyravi (2020) concluded that the nursing shortage is a complex issue with varying levels of severity across different countries. According to Machitidze (2022), the WHO reports that there are 7.2 million healthcare staff shortages, and the problems are worse in Europe, Asia, and North America. The deficit is estimated to increase up to 12.9 million by the year 2035 (Abhicharttibutra et al., 2017; Al-Yahyaei et al., 2022). The registered number of nurses in Pakistan, according to the 2020 data, is 116,659 for 200 million, having a ratio of 1:40, whereas the recommended ratio by the Pakistan Nursing Council is around 3:10 (Hassan, 2023). The shortage of nurses and other healthcare staff has not only restricted the growth of the healthcare sector but also pushed the sector to the verge of collapse by overburdening it (Idrees et al., 2024).

### 2.2 | Nurses and Healthcare System

Nurses play an important role in promoting patient safety, management, and continuous care (Glarcher & Vaismoradi, 2025). Nursing professionals can also play their part in planning healthcare facilities and sustainable services (Yeboah et al., 2024). The shortage of nurses is linked with patients' health and can be a reason for complications, including their deaths (Machitidze, 2022). Wang (2024) noted that the healthcare system is linked with national security, and a shortage of nurses affects not only the healthcare system but also poses a threat to the national security. Machitidze (2022) found that the low number of nurses places both nurses and patients in danger, and the COVID-19 pandemic has exacerbated the global nursing shortage. These above-referred studies indicate how important coordinated international strategies and regional interventions are to effectively train and retain nurses. The shortage of nurses has increased the death ratio and has compromised the quality of healthcare systems around the globe (Rostoker et al., 2024).

### 2.3 | The Challenges and Policy Framework

In a review, Tamata et al. (2021) examined the reasons why hospitals lack sufficient nurses and found that the nursing employment shortage was caused by four main themes: policy and planning hurdles, barriers to training and enrollment, factors that cause nurses to leave their jobs, and the stress and burnout experienced by nurses. Improving the retention of current nurses is one of the most crucial steps that can be taken to address the nursing shortage (Shamsi & Peyravi, 2020). A policy analysis in Bangladesh found that nurses have faced numerous challenges regarding policy, education, and government oversight, and many problems regarding their standing, respect, and access to education persist (Joarder et al., 2021). Einhellig et al. (2020) showed that international collaboration and adapted educational programs for nurses can successfully improve leadership preparation and educational opportunities. Besides these challenges, nurses are facing horizontal

hostility in different forms at the workplace in Pakistan (Noor et al., 2024). The nursing professional often experiences burnout due to lack of organizational support and appreciation (Hameed, 2024). Machitidze et al. (2021) determined that various economic and social factors contribute to the nursing shortage, and insufficient awareness regarding the profession hinders its advancement. The core issues with policy making include the lack of participation from nurses' staff (Hussain et al., 2025). The national health policy addressing all these challenges requires the inclusion of nursing leadership in the decision-making process (Ashiqali & Ullah, 2024).

### 2.4 | Guiding Theoretical Framework

The literature highlights the key link between the causes of the nurse shortage and management theories. The retention of nurses and the brain drain are key challenges contributing to the nursing shortage (Khaliq et al., 2020; Lasater, 2024; Meo et al., 2024). Previous research indicates that the lack of personal development and investment in nurses has contributed to these issues (Hameed, 2024; Machitidze et al., 2021). The notion of Human Capital theory supports that investing in human capital leads to productive outcomes (Becker, 1992). Human capital theory further postulates that investing in training and development improves individual productivity and retention (Ramlall, 2004). Roth et al. (2022) found that numerous factors, including push and pull factors, influence decisions about whether nurses leave or stay, and that problems will continue until working conditions, fair pay, and job growth opportunities are improved. The pull-push theory of motivation also postulates that the decision to leave or stay depends on positive factors known as “pull factors” and negative factors known as “push factors” (Igwedibia & Ezeonu, 2023). The theory further suggests that organizations must enhance pull factors to keep employees motivated (Kirkwood, 2009).

## 3 | METHODOLOGY & DESIGN

### 3.1 | Sample Population & Data Collection

The current study recruited the participants from the healthcare sector of Pakistan. The sample was selected using the purposive sampling method from the participants involved in experiencing shortage and retention challenges. The data were collected from ten participants (n=10) using semi-structured interviews. For ensuring the representation of various groups and regions, the data were collected from the participants working in both private and public hospitals as well as from rural and urban healthcare settings. Three years of experience was set as inclusion criteria, whereas the exclusion criteria was adjusted according to the limited exposure to this environment. Morse (2021) has recommended using variation in sampling, as the qualitative research study design ensures that the diversity in perspectives is achieved by selecting participants from different backgrounds, different levels of organization, and people from different career stages (Morse, 2021). Table 1 presents the demographics of the interviewees:

**Table 1: Demographics of the Interviewee**

| Participant Id | Gender | Role | Organization Type | Experience (Years) |
|---|---|---|---|---|
| P1 | Female | Staff Nurse | Public | 7 |
| P2 | Female | Nurse Educator | Private | 12 |
| P3 | Male | Nursing Consultant | Public | 25 |
| P4 | Male | Nursing Manager | Public | 20 |
| P5 | Female | Clinical Nurse | Private | 10 |

| | | | | |
|---|---|---|---|---|
| P6 | Male | Nurse Administrator | Public | 18 |
| P7 | Female | Nurse Educator | Private | 14 |
| P8 | Male | Nursing Principal | Public | 22 |
| P9 | Male | Staff Nurse | Public | 6 |
| P10 | Female | Nurse Administrator | Private | 15 |

### 3.2 | Research Design

The qualitative research design is employed through the case study method to explore the causes of shortage of nursing professionals in Pakistan and offering practical recommendations for the policy making. The qualitative inquiry is best method to develop the understanding through iterative and interpretative procedure (Aspers and Corte, 2009). The qualitative inquiry enables researchers to get an in-depth information about the process and systemic challenges that individuals encounter, it also helps to brig and potential solutions through rich and descriptive data (Creswell & Poth, 2018).

### 3.3 | Data Analysis Approach

After obtaining the approval of the interview guide and taking into consideration all ethical approvals, the semi-structured interviews were conducted with the participants who showed their willingness to participate in this research. The interview guide has used open-ended questions that helped to investigate the research issues and different challenges encountered by the nursing professional at the workplace. As per the consent of the participants, the interviews were initially recorded and transcribed verbatim; the researchers later shared the transcription with the participants to ensure accuracy and reliability of the data analysis.

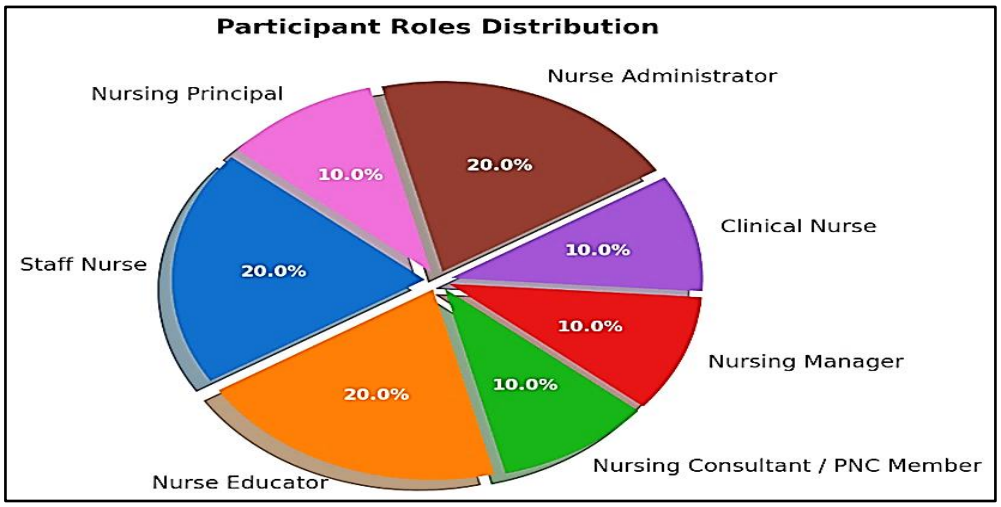


**Figure 1: Interview Participants' Role Distribution**

The data were analyzed by following Braun & Clarke's (2006) six-step thematic analysis method. The steps included in the data analysis were data familiarization, initial coding, searching for themes, reviewing themes, defining and naming and presenting the final results based on the transcribed data. Throughout the study, the researchers constantly compared the data to codes and codes with themes and other data sources (Glaser & Strauss, 2017).

## 4 | RESULTS AND ANALYSIS

The findings offered multi-dimensional insights from the participating nursing professionals on working conditions, career opportunities, and the best practices used by the healthcare organizations in Pakistan to ensure retention of nurses and cope with the shortage of nurses. The themes identified in this study are described below:

### 4.1 | Low Wages

The findings indicated that the most consistently cited theme that contributes to the shortage of nurses is the low wages and unavailability of proper incentive programs in the healthcare sector. The study used the samples from both public and private sector organizations, and the participants described their salaries as insufficient to even meet the basic living expenses. One of the aggrieved participants shared that:

***"The workload is a lot because there simply aren't enough nurses. We are stretched so thin, and yet the salaries and benefits are really low." (P1)***

The participants further highlight described that the lack of competitive pay packages undermines retention and forces people to leave the country in search of higher wages. The insights shared by the participants added that the Middle East, Europe, and North America are the places where most of the nursing professionals have migrated. The current theme is directly linked with the retention challenges, as participants have found financial dissatisfaction as the key element that negatively impacts the professional commitment and job satisfaction. The findings highlighted the disparity in pay packages for nursing staff working in private & public sectors. The private sector does not offer pensions and job security, this was another problem associated with wages. One of the participants said:

***"Private hospitals pay better in some cases, but you don't get pensions or long-term security. In government hospitals, the pay is low, but at least you have job stability." (P3)***


**Figure 2: Word Cloud for Low Wages**

Based on the findings, which tend to align with existing literature (WHO, 2020; ICN, 2021), salary is underscored as one of the most influential push factors driving nursing migration. In accordance with Pakistan, salary dissatisfaction operates both as a direct cause of attrition and as an amplifier of other dissatisfactions, such as workload and lack of recognition. Nursing staff working in Gulf states are paid ten times more than the nursing professionals working in Pakistan. The huge gap in pay is also experienced in public and private firms, which further weakens retention. This way, by compromising low pay, the value of the professional is downgraded, and a negative impact on future entrants is experienced that ultimately causes the shortage of nurses. A competitive pay and benefit system, although it cannot address all the problems of nursing professionals, will help organizations to reduce the brain drain and improve the retention ratio.

### 4.2 | Workload and Staff Shortage

The second theme of the study is workload and staff shortage. This study analyzed and found that the excessive workload and staff shortages emerged as one of the most prominent challenges. Nurses in both public and private healthcare settings have reported being assigned excessive patient loads, which far exceed the internationally recommended ratios. The availability of limited staff and serving the higher number of patients compromises the quality of healthcare. A participant said:

***"Some days I have to care for 25 to 30 patients at once. It is impossible to give quality care in such conditions." (P4)***

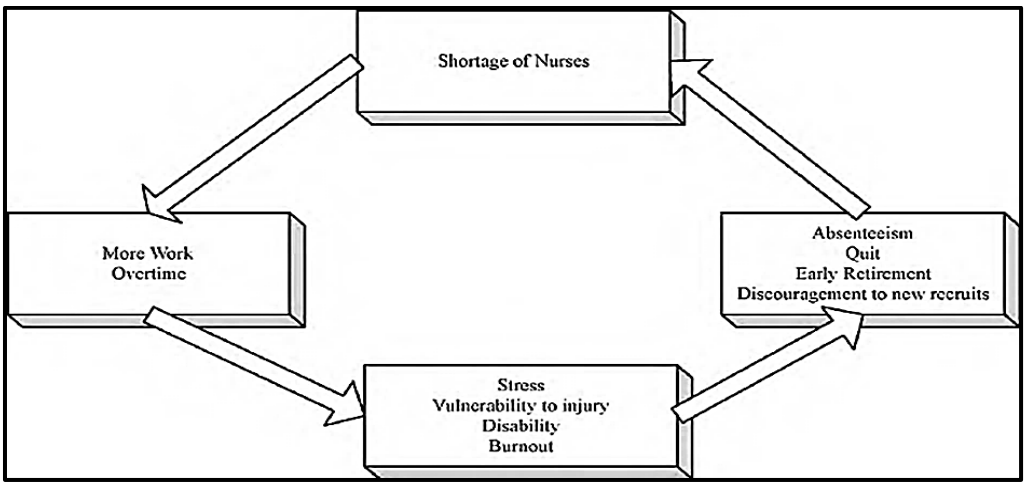


**Figure 3: Shortage of Nurses and their Causes**

Based on this situation, patient safety is compromised, which further causes the risk of clinical errors. The participants shared that the high turnover, burnout-induced sick leave, and the absence of a strategic recruitment pipeline also cause the increase in the shortage of nursing professionals. The recent studies have found that the continuous burden on staff is creating a vicious cycle of attrition and understaffing. Addressing the workload issues of nursing staff is essential for improving job satisfaction, reducing burnout, and enhancing retention rates within the nursing workforce. One of the people who took part said that:

***"In my department, the patient-to-nurse ratio is at least double what WHO recommends. This is dangerous for both nurses and patients." (P3)***

The study has reported a well-documented challenge in global nursing literature: the excessive workloads as a direct contributor to burnout and attrition (Shanafelt et al., 2019; ICN, 2021). In the Pakistani context, the participants have added that the staffing shortages are compounded by migration trends, inadequate local training capacity, and budgetary constraints that prevent timely recruitment. Participants found that the lack of workforce planning based on patient acuity and care needs results in putting additional responsibilities on the nursing staff. The hospitals and healthcare organizations do not regard the complexity of cases. Participants have shared that the nursing staff also face difficulties in support from the auxiliary support staff, forcing nurses to perform non-clinical duties. Accordingly, the overburden of the work creates morale issues amongst the nursing staff. The participants suggested to follow the WHO's recommendations on maintaining the ratio of 1 nurse to 4-6 patients in acute care. The workload pressures will continue to drive nurses out of the profession or out of the country.


**Figure 4: Word Cloud for Workload and Staff Shortage**

### 4.3 | Lack of Respect and Professional Recognition

The participants talked about the perception of nursing, which is perceived as an undervalued and often misunderstood profession within Pakistani society. Although there are multiple factors involved in patient care, the nursing staff plays an important role in healthcare. The nursing professionals are not recognized; they are rarely included in leadership roles. The participants share that the lack of recognition manifests in various forms; it ranges from limited decision-making authority and exclusion from policy discussions to social stigma and gender-based biases. A participant told:

***"There is a gender bias to male nurses often face skepticism about their career choice and female nurses face inappropriate comments or assumptions about their character." (P9)***

The findings of the study revealed that the attitudes of leadership and hospital administrations not only diminish the morale of nursing staff but also deter prospective candidates from entering the profession. The participants added that the respect and recognition are the crucial drivers of professional identity, job satisfaction, and retention.

***"Recognition programs are almost non-existent. Even simple appreciation can go a long way, but we don't see much of it here." (P5)***

According to the devaluation of nursing, it is not unique to Pakistan, but its effects are particularly pronounced in contexts where hierarchical medical structures dominate (Salmon et al., 2021). The Pakistani healthcare system works under the physician-centric model, which ignores and discredits the nursing expertise and builds a perception of nurses as their subordinates, which further undervalues caregiving roles, particularly when performed by women. Participants therefore found that the institutional recognition, such as inclusion in decision-making, structured career advancement pathways, or formal awards—further entrenches feelings of marginalization. The participants also discussed that to improve nurses' professional development, organizations must work on the policy reforms and public awareness campaigns. Participants believe that organizations can boost retention and attract new entrants to the field. In accordance with Pakistan, addressing societal and institutional perceptions is as critical as improving material conditions, as both directly influence morale and workforce stability.


**Figure 5: Word Cloud for Lack of Respect and Professional Recognition**

### 4.4 | Migration and Brain Drain

Based on the analysis, nurse migration emerged as a significant and interconnected factor in the nursing shortage in Pakistan. However, it includes the participants consistently reported that skilled nurses are leaving the country in pursuit of better salaries, improved working conditions, professional recognition, and opportunities for career advancement.

***"Every year, several of our best-trained nurses leave for Saudi Arabia or the UK. Once they go, they rarely return." (P8)***

On the basis of that this migration is not limited to early-career professionals; experienced senior nurses, nurse educators, and administrators are also part of this exodus. Despite the factors such as push factors (low pay, heavy workloads & lack of career progression) combined with pull factors from high-income countries that actively recruit foreign-trained nurses.

***"It's not just about money, nurses leave because they want structured working hours, better staffing, and respect for their profession." (P2)***

As per analysis, it tends to be cumulative effect is a loss of human capital and institutional knowledge, creating a vacuum that is difficult to fill domestically and migration and brain drain therefore represent both a symptom of systemic shortcomings and a driver of further shortages.

**Figure 6: Word Cloud on Migration and Brain Drain**

The migration of nurses from low- and middle-income countries to higher-income destinations is a well-documented global trend (WHO, 2020; ICN, 2021). In accordance with Pakistan, migration is accelerated by the widening disparity between domestic and international opportunities, and while salary differences are a strong motivator, participants stressed that professional respect, manageable workloads, and better career development pathways abroad also play a central role. Participants shared that the push–pull framework is widely used in migration studies. Some of the elements can positively impact the retention of employees, whereas some of the factors can negatively affect the retention; these factors are called push factors. Participants concluded that the recruitment made through the foreign agencies often targets high-performing nurses, whereas in Pakistan no such merit-based recruitment is done. Currently, there is no national retention strategy in Pakistan; the lack of proper pay structure, limited professional development opportunities, and recognition programs are causing the migration of nursing professionals from Pakistan.

### 4.5 | Educational Gaps and Training Limitations

The findings revealed that the inadequacy of the education system is one of the major systemic factors causing the nursing shortage in Pakistan. Participants found that persistent gaps in curriculum relevance are examined in Pakistan, another problem is the shortages of qualified faculty, and there is limited access to high-quality clinical training environments. One of the participants shared that:

***"Our curriculum has not been updated for years. Nurses are expected to handle advanced equipment, but they are not trained on it during their studies." (P7)***

The participants shared that the mismatch between the number of graduates produced is often dependent upon the number of people required at the workplace. The large demand for nurses continues to compromise the quality of graduates in Pakistan. Nevertheless, the outdated curricula may be the one reason for this, as they are not aligned with international best practices. The graduates are underprepared for the realities of modern healthcare, such as limited opportunities for postgraduate specialization and professional development. This further complicates the issue of their career development; it reduces the motivation and works as a cause of retention issues.


**Figure 7: Word Cloud for Educational Gaps and Training Limitations**

According to the Pakistani context, the participant highlighted that the shortage of qualified faculty is one of the reasons reducing the depth and quality of instruction in Pakistan. The outdated curricula and lack of proficiency in contemporary clinical skills are also perceived as educational and training gaps. According to the participant, nursing staff is not placed in well-equipped facilities where they could contribute to gaps in competence. The participants added that the expansion and modernization of nursing education through simulation labs, competency-based curricula, and professional faculty development may improve the retention and patient outcomes. However, on the other hand, as per Pakistan's failure to make similar investments, it risks perpetuating a cycle where underprepared graduates are either quickly disillusioned or recruited abroad.

### 4.6 | Workplace Environment and Safety Concerns

As per the recent analysis, beyond pay and staffing, participants repeatedly framed safety, both psychological and physical as a decisive factor in whether nurses stay, leave the organization, or exit the country. One of the participants shared that:

***"Verbal abuse and harassment are common, and there are no real protection mechanisms. A recent case at Jinnah Hospital showed how severe harassment can end in self-harm. People are scared to report." (P9)***

Based on the accounts described routine exposure to verbal aggression, harassment, and threats, alongside thin security protocols, especially on busy wards and night shifts. According to the several participants linked safety lapses to toxic supervisory cultures (e.g., public shaming, punitive scheduling) and weak complaint mechanisms that fail to protect complainants.

***"When complaints are filed, you rarely get updates. Sometimes the person who complained is moved to a tougher shift instead." (P2)***

On the basis of that the cumulative effect is a climate of hyper-vigilance and moral distress that accelerates burnout, undermines team cohesion, and erodes patient-safety culture such as these realities connect directly to working conditions, effectiveness of policies and protections and indirectly, addresses why international environments, that are safer and procedurally clearer, pull nurses away. It is important to understand that participants' narratives depict safety as infrastructure: not just guards and cameras, but policies, training, and trustworthy processes that prevent harm and respond when harm occurs. It tends to illustrate that where these pillars are weak, nurses internalize risk as part of the job, normalizing avoidance behaviors (skipping confrontation, not reporting incidents), which silences early warning signals within the system. Participants shared that, in Pakistani context, two dynamics amplify risk: (i) crowded public facilities with high attendant presence and volatile expectations, and (ii) hierarchical cultures that can discourage upward feedback and protect influential perpetrators. It also tends to analyze that the participants contrasted this with overseas settings where zero-tolerance harassment policies, whistle-blower protections, incident tracking, and post-incident support are routine and the implication for retention is clear: safety improvements are retention interventions. Systems that reliably prevent and address harm keep nurses at the bedside.


**Figure 8: Word Cloud for Workplace Environment and Safety Concerns**

### 4.7 | Government Policy Gaps and Weak Implementation

This theme tends to represent the participants highlighted a disconnect between policy intent and practical enforcement in addressing the nursing shortage and while Pakistan has adopted various health sector reforms and nursing policy frameworks, their translation into measurable workforce improvements has been slow, inconsistent, or absent.

***"We have policies on paper, but they are rarely implemented fully. Announcements are made, committees are formed, and then nothing happens." (P3)***

According to the recurrent critique was that policies are often reactive, developed in response to crises but lack sustained funding, monitoring, and enforcement mechanisms. It also includes the stakeholders described fragmented governance, where responsibilities for nursing education, regulation, and workforce planning are spread across multiple ministries and provincial bodies, leading to policy dilution and slow execution. It also comprises of absence of retention-specific strategies, particularly in rural areas, coupled with weak enforcement of existing labor protections, creates an environment where structural shortages persist despite official commitments and this theme directly informs policy effectiveness and intersects with all other themes by influencing systemic conditions.

***"There is no dedicated retention strategy everything is lumped under general HR policies, which don't address nursing-specific needs." (P2)***


**Figure 9: Word Cloud for Government Policy Gaps and Weak Implementation**

Based on the policy-practice gap in Pakistan's nursing workforce governance, it mirrors patterns documented in other low- and middle-income countries (WHO, 2020; ICN, 2021), where policy frameworks exist but lack operational traction. Participants also highlighted several systemic issues, such as funding issues, where budgetary allocations do not match the requirements of the organization. It also consists of the low bureaucratic processes, which further cause delay in organizational processes such as recruitment, curriculum reforms, and other programs. Lack of performance monitoring is also one of the key issues in healthcare settings; there are few mechanisms to evaluate policy outcomes or hold implementing agencies accountable. Participants also shared that the nursing voices are underrepresented in policy development forums, as there are limited people in leadership roles from the nursing profession. The frustration of participants reflects that policy is volatile, and it lacks government priorities for reducing the shortage of nurses. The participants added that without structural reforms in the healthcare system, Pakistan's nursing shortage will continue to persist.

### 4.8 | Rural Retention Challenges and Incentives

The insights received from the participants showed that the retention of nurses in rural and remote areas are comparatively low and one of the persistent challenges in Pakistan. They highlighted many reasons, including inadequate infrastructure, professional isolation and absence of incentives that finally result in retention issues. One of the participants shared:

> ***"There is no proper accommodation for staff. Many have to rent homes in poor conditions, far from the facility." (P6)***

It also includes some nurses expressed willingness to serve rural communities, they reported that poor living conditions, lack of educational opportunities for their children, and absence of career advancement pathways were significant deterrents. On the basis of shortage in rural areas is further compounded by a high turnover rate—many nurses accept rural postings only as temporary arrangements before securing positions in urban centers or abroad and this theme intersects with policy gaps and educational limitations, as without targeted strategies, rural healthcare facilities struggle to retain skilled nursing staff, compromising equitable access to care.

*"In rural postings, you might be the only nurse on duty for an entire tehsil hospital. It's overwhelming and unsafe." (P4)*

It tends to be analyzed from the above analysis that the difficulty of retaining nurses in rural Pakistan aligns with global evidence showing that geographic maldistribution of health workers is driven by both professional and personal considerations (WHO, 2010; Lehmann et al., 2018). Participants found many structural deficiencies, including inadequate accommodation, limited transport facilities, infrastructure challenges, and lack of continuing education, as inherent challenges of nursing professionals in Pakistan. Participants shared that sustained financial and non-financial incentives make it unattractive for nursing professionals to join rural areas. The international models demonstrated that bundled incentives, including proper residential facilities, hardship pay, career development, and continuing education, are some of the key strategies that may improve rural retention.


**Figure 10: Word Cloud for Rural Retention Challenges and Incentives**

## 5 | DISCUSSION

The findings of the current study revealed that nursing professionals across public and private healthcare settings are working on very low wages in Pakistan, which is insufficient to meet even their basic living expenses. Private hospitals pay them a little more, but they do not offer them the long-term benefits. Similarly, in the public sector organizations, the pay structure is not that attractive, but there is job security. The shortage of nurses is caused by the wage gap. Nursing professionals are paid ten times higher in Gulf states as compared to the wages in Pakistan, which is causing the brain drain of nursing professionals from Pakistan. These findings of the current study are consistent with WHO (2020) and ICN (2021), which identify salary as a primary retention factor. In low-middle-income countries, wage disparities create powerful pull factors (Dussault & Franceschini, 2006). Findings suggested that standardizing pay scales, non-monetary benefits, pension reforms and inflation-linked adjustments are required to improve employee retention and reduce the shortage.

The patient-to-nurse ratio was another challenge revealed by the findings of the current study. The nursing staff in Pakistan usually entertain 20–30 patients at once. Understaffing, unpaid overtime, and slow recruitment are some of its basic causes. WHO recommends a ratio of 1:4-6, yet the health care settings often exceed 1:20 (Shields & Wilkins, 2009). Studies in Nigeria and Bangladesh also show that burnout

compromises the patient healthcare quality (Joarder et al., 2021). Some of the other concerns include societal undervaluation of nursing, gender bias, and exclusion from decision-making, as nursing professionals are not included in leadership roles. Findings revealed that nurses are perceived to be the "assistants" to doctors, and the system is dominated by them. Research by Abbas et al. (2020) and Yasir et al. (2020) also confirms such sociocultural stigma of dominance by doctors. Professional identity theory highlights recognition and respect as vital elements for self-motivation (Adams et al., 2006). Participants felt recognition programs were rare.

The findings show that there is a gap between the policy announcements & execution, with fragmented governance and slow bureaucratic processes. Other Southeast Asian countries implemented integrated workforce strategies (WHO, 2020) involving multi-year retention plans, central coordination and linking funding to performance metrics. Nursing-specific needs were often subsumed under general HR policies. According to the eight themes: low salary, workload and staff shortage, lack of respect, migration and brain drain, educational gaps, workplace safety concerns, policy gaps, and rural retention challenges, these interact and perpetuate Pakistan's nursing shortage. Low salaries amplify migration; migration increases workloads; high workloads cause burnout; burnout increases turnover; turnover weakens mentorship; weak mentorship produces underprepared graduates; underprepared graduates lower care quality and public trust; negative perceptions reduce entrants. A governance deficit weakens policy execution.

Moreover, this study found that in Pakistan, the nurses in rural areas face poor living conditions, lack of support and unfulfilled incentive promises. WHO's "Stay and Serve" framework and experiences from Thailand/Philippines show how bundled incentives improve retention (WHO, 2010). As a whole, based on the participants responses, views and opinions and their subsequent qualitative analyses in terms of identifications of codes, patterns and emerging themes, the following qualitative framework is suggested that highlights the key challenges faced to the nursing sector of Pakistan. Subsequently, some practical recommendations are suggested in the next section for enhancing the performance & efficiency of the nursing workforce in addition to improving their retention ratio in Pakistan.

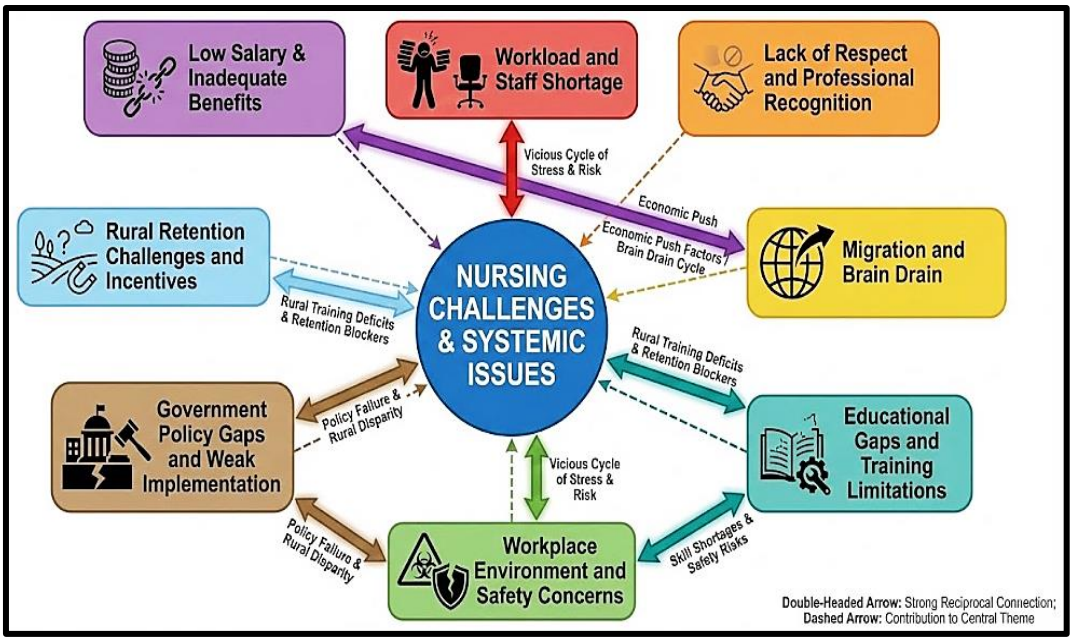


**Figure 11: Qualitative Framework Highlighting Interconnected Challenges Faced to the Nursing Sector of Pakistan**

### 5.1 | Research Implications and Contributions

This research offers numerous theoretical & practical insights and contributions for healthcare sector in general and nursing sector of Pakistan in particular. The results suggest a need to build the capacity of nursing professionals in order to enhance their retention. The study therefore supports the human capital theory and extends the relevant literature. Moreover, the current study also enriches the literature on push-pull theory of migration and provides that low wages and poor working conditions serve as 'push' factors. Whereas the higher wages and good working condition abroad serve as 'pull' factors that contribute to the migration of the skilled nursing workforce. The current study also extends the literature on professional identity theory by exploring the role of recognition and respect towards professional identity and development. The findings illustrate that nurses in Pakistan are often undervalued, which adversely affects their sense of self-worth and motivation.

The practical part of the study includes the tailored policies for compensation and benefits. As the current study underscores the critical role of salary in nurse retention, the organization must re-evaluate their policies in light of the global practices and implement a salary that not only meets inflationary demands but also provides long-term benefits to the nursing professionals. Similarly, the findings of the current study reported issues like burnout, understaffing and job insecurity in healthcare institutions. The organizations need to make clear rules to keep nurses from being burned out, enhance the number of patients per nurse, and make sure nurses can stay in their jobs for a long time. This might lower turnover and make nurses happier at work. The findings also revealed that the curriculum and faculty development are the core challenges. Both academicians and healthcare administrators should focus in revising the curriculum to align with global standards, to improve competency-based learning and enhancing clinical exposure for students.

### 5.2. Limitations and Future Research Directions

Like all research, the current study has some key limitations. The study was conducted from the perspective of Lower-Middle-Income Countries (LMICs), but Pakistan may not fully represent the healthcare structure of all LMICs. Thus, a future comparative study of different LMICs can improve the generalizability of the issue. Time is another constraint with the study. The findings are based on the cross-sectional data collected from the participants. A shift in time may bring variations in challenges, issues and overall policies related to nursing staff. The future research may therefore use longitudinal data to ascertain the changes in issues & shift in policies for nursing staff over the period of time.

## 6 | CONCLUSION

The current study explored the factors responsible for shortage of nurses in Pakistan and how these challenges can be addressed. The findings highlighted low salary and career issues as two of the key root causes that compelled nursing professionals to leave the country. The brain drain was dominantly caused by poor working conditions, inadequate compensation, lack of recognition, increased workload and safety issues. Moreover, workplace harassment, verbal abuse and weak security measures were also among the other causes that led to the brain drain in the nursing sector of Pakistan. As a result, the early career including the senior nursing professionals recently began to migrate for better future. The similar issues were also reported in the countries like Philippines, India and Nigeria. Considering these challenges, we recommended some key measures &

strategies on policy & practice front. These recommendations included: offering ethical recruitment agreements, introducing formal grievance redressal mechanisms, adopting zero-tolerance policy, offering specialized remuneration packages, promoting counselling and providing safer working environment, coupled with improving the quality of nursing education through provision of scholarships, revision of outdated curriculum and appointment of internationally-competitive teaching faculty. Adopting the suggested recommendations would assist the public & private sector healthcare institutions including the government regulators and practitioners in improving the retention ratio of the nursing workforce in Pakistan, while simultaneously boosting the overall performance of this sector in the days to come.

## REFERENCE


Abbas, G., Shah, S., Asghar, A., Faiz Ullah Khan, Mahmood, A., Khan, F., Azhar, S., Hussain, A., & Zhang, R. (2024). Nursing Education, Practice, and Research in Pakistan. Springer EBooks, 1–18.

Abbas, S., Zakar, R. and Fischer, F. (2020). Qualitative study of sociocultural challenges in the nursing profession in Pakistan. BMC Nursing, 19, pp.1-7.

Abbas, S., Zakar, R. and Fischer, F. (2024). Exploring perceptions of nursing identity construction in Pakistan: Qualitative study on self, public, and professional perspectives.

Abdulmohdi, N. and Huang, Y. (2025). Exploring critical care nurses' experiences of redeployment to general medical-surgical wards for covering staff shortages: A qualitative research study. Nursing in Critical Care, 30(2), p.e13267.

Abhicharttibutra, K., Kunaviktikul, W., Turale, S., Wichaikhum, O., & Srisuphan, W. (2017). Analysis of a government policy to address nursing shortage and nursing education quality. International Nursing Review, 64(1), 22–32.

Adaoma Igwedibia & Ezeonu, C. (2023). Push-pull factor theories of migration: An analysis of Chika Unigwe's on Black Sisters' Street. Nigerian Journal of Arts and Humanities (NJAH), 3(1).

Adeoye-Olatunde, O.A. and Olenik, N.L. (2021). Research and scholarly methods: Semi-structured interviews. Journal of the american college of clinical pharmacy, 4(10), pp.1358-1367.

Ahmad, I., & Shaheen, A. (2021). NURSES'SHORTAGE AND CHALLENGES DURING INTERNSHIP: AN EMERGING ISSUE. Journal of Postgraduate Medical Institute, 35(4), 197-201.

Akore Yeboah, E., Adegboye, A. R. A., & Kneafsey, R. (2024). Nurses' perceptions, attitudes, and perspectives in relation to climate change and sustainable healthcare practices: A systematic review. The Journal of Climate Change and Health, 16, 100290.

Al Yahyaei, A., Hewison, A., Efstathiou, N., & Carrick-Sen, D. (2022). Nurses' intention to stay in the work environment in acute healthcare: A systematic review. Journal of Research in Nursing, 27(4), 374–397.

Ashiqali, A., & Ullah, W. (2024). The Role of Nursing Leadership in Shaping a Uniform National Health Policy in Pakistan. I-Manager's Journal on Nursing, 14(1), 20.

Aspers, P. (2009). Empirical phenomenology: A qualitative research approach (The Cologne Seminars). Indo-pacific journal of phenomenology, 9(2).

Aspers, P. and Corte, U. (2021). What is qualitative in research. Qualitative Sociology, pp.1-10.

Aung, K. T., Razak, R. A., & Nazry, N. N. M. (2021). Establishing Validity And Reliability of Semi-Structured Interview Questionnaire in Developing Risk Communication Module: A Pilot Study. Edunesia : Jurnal Ilmiah Pendidikan, 2(3), 600–606.

Banks, P. (2024). Effective Strategies to Manage Nursing Shortages (Doctoral dissertation, Walden University).

Bavier, A. (2018). An overview of health challenges faced by nurses. Journal of Applied Biobehavioral Research, 23(1), e12118.

Becker, G. S. (1992). Human capital and the economy. Proceedings of the American Philosophical Society, 136(1), 85–92.

Braun, V. and Clarke, V. (2006). Using thematic analysis in psychology. Qualitative research in psychology, 3(2), pp.77-101.

Creswell, J. W., & Poth, C. N. (2016). Qualitative inquiry and research design: Choosing among five approaches. Sage publications.

Creswell, J.W. and Poth, C.N. (2016). Qualitative inquiry and research design: Choosing among five approaches. Sage publications.

Cunningham, T., Brianna Barker Caza, Hayes, R., Leake, S., & Cipriano, P. F. (2023). Design health care systems to protect resilience in nursing. Nursing Outlook, 101999–101999.

Denzin, N.K. (2017). The research act: A theoretical introduction to sociological methods. Routledge.

Einhellig, K., Parker, C., McNeill, J., Dunemn, K. and Hummel, F. (2020). Addressing the Global Nursing Shortage: An International Collaboration. International Journal of Nursing, 7(2), pp.87-91.

Firdos, U.Z.M.A., Asghar, R.S. and Ashraf, S. (2020). Managing Nursing brain drain from Pakistan. European Academic Research, 7(10), pp.5231-41.

Glarcher, M., & Vaismoradi, M. (2025). A systematic integrative review of specialized nurses' role to establish a culture of patient safety: A modelling perspective. Journal of Advanced Nursing, 81(9), 5248–5263.

Glarcher, M., Ferguson, C., Patch, M., Steven, A., & Vaismoradi, M. (2025). Addressing Nurse Shortages and Pandemic Responses to Enhance Patient Safety Within Global Health Challenges. Journal of Advanced Nursing.

Glaser, B. and Strauss, A. (2017). Discovery of grounded theory: Strategies for qualitative research. Routledge.

Gray, C. E., Spector, P. E., Wells, J. E., Bianchi, S. R., Ocana-Dominguez, C., Stringer, C., Sarmiento, J., & Butler, T. (2022). How Can Organizational Leaders Help? Examining the Effectiveness of Leaders' Support During a Crisis. Journal of Business and Psychology, 38(1). https://doi.org/10.1007/s10869-022-09810-6

Guest, G., Bunce, A. and Johnson, L., 2006. How many interviews are enough? An experiment with data saturation and variability. Field methods, 18(1), pp.59-82.

Hameed, S. (2024). Underappreciation of Nurses in Pakistan: A Silent Catalyst for Burnout. NURSEARCHER (Journal of Nursing & Midwifery Sciences), 01–01.

Hasan, N., Rana, R.U., Chowdhury, S., Dola, A.J. and Rony, M.K.K. (2021). Ethical considerations in research. Journal of Nursing Research, Patient Safety and Practise (JNRPSP) 2799-1210, 1(01), pp.1-4.

Hassan, S. (2023). Nursing Shortage in Pakistan: Nursing Shortage in Pakistan. NURSEARCHER (Journal of Nursing & Midwifery Sciences), 24–25.

Hoang, V. L., Bui, H. T., Le, T. T., Tran, D. T., Hoang, H. T., Thi, H., & Hoan, T. (2025). Effectiveness of a train-the-trainer workshop series on teaching methods among nurse educators: an exemplar from Vietnam. Frontiers in Education, 9.

Hussain, N., Mukhtar, M., & Masih, S. (2025). Nurses' Participation, Perceived Benefits And Barriers In Health Policy Making In Pakistan. Journal of Neonatal Surgery, 14(22s), 692.

Hwang, E., Kirkham, R., Marshall, K., Kharrufa, A., & Olivier, P. (2022). Sketching dialogue: incorporating sketching in empathetic semi-Structured interviews for human-computer interaction research. Behaviour & Information Technology, 42(13), 1–29.

Idrees, M., Khan, M. M., Talha, M., Odat, R. M., Jain, H., Mehta, R., Mohanty, A., & Sah, R. (2024). Strengthening Pakistan's healthcare and economic resilience against potential mpox outbreaks. Asian Pacific Journal of Tropical Medicine, 17(12), 525–526.

Joarder, T., Parvage, M.A., Rawal, L.B. and Ahmed, S.M. (2021). A policy analysis regarding education, career, and governance of the nurses in Bangladesh: A qualitative exploration. Policy, Politics, & Nursing Practice, 22(2), pp.114-125.

Joarder, T., Parvage, Md. A., Rawal, L. B., & Ahmed, S. M. (2021). A Policy Analysis Regarding Education, Career, and Governance of the Nurses in Bangladesh: A Qualitative Exploration. Policy, Politics, & Nursing Practice, 22(2), 114–125.

Khaliq, A. A., Sri, D., Mohamed, A. A. A., & Ahmad, M. H. (2020). Consequences of Workplace Harassment/ Violence on Job Outcomes Among Women Employees in the Higher Education Sector of Pakistan: Moderation of Legal Environment.

Khaliq, F., Zaigham, W., & Malik, S. Y. (2025). The Pakistan Healthcare Sector at Stake: Brain Drain of Pakistan Doctors. Health Sciences Journal, 3(2), 89–94.

Khan, A. and Muhammad, D. (20220. Perspective of nurses regarding factors affecting quality of nursing care in intensive care

units: a qualitative study. Rehman Journal of Health Sciences, 4(2), pp.121-130.

Khan, K. (2023). Nurses' perceptions regarding the use of the nursing process; a descriptive qualitative study at Hayatabad medical complex, Peshawar, Pakistan.

Khowaja-Punjwani, S., Macer, D. and Rafique, N. (2023). A Qualitative Study Exploring Perceptions of Pakistani Nurses about Nursing Workforce Migration: Analysis and Policy Implications. Liaquat National Journal of Primary Care, 5(3).

Kirkwood, J. (2009). Motivational factors in a push-pull theory of entrepreneurship. Gender in Management: An International Journal, 24(5), 346–364.

Lasater, K. B. (2024). Addressing the nurse retention Crisis—Leveraging policies supported by evidence. JAMA Network Open, 7(7), e2421635–e2421635.

Leung PP, Wu C-H, Kwong C, Ching WK. Nursing shortage in the public healthcare system: an exploratory study of Hong Kong. Enterprise Information Systems. (2020);14(7):913-31.

Machitidze, M. (2022). Impact of the nurses education and shortage on the patients care outcomes-literature review. American Journal of Biomedical Science & Research, 15(4), pp.441-443.

Machitidze, M., Nikoleishvili, E. and Gogashvili, M. (2021). Factors Affecting Nurses' Shortage–Literature Review. Nursing, 21(17-18), pp.2599-2608.

Mallah, F. A., Khan, S. A., Buriro, N. A., Baloch, M. B., & Parveen, Mrs. S. (2018). The Determinants And Developments In Choosing Nursing Profession As Career, A Qualitative Analysis Of Nursing Students At District Khairpur Sindh, Pakistan. Pakistan Journal of Public Health, 8(1), 13–17.

Marć, M., Bartosiewicz, A., Burzyńska, J., Chmiel, Z., & Januszewicz, P. (2019). A nursing shortage - a prospect of global and local policies. International Nursing Review, 66(1), 9–16.

Marshall, B., Cardon, P., Poddar, A. and Fontenot, R., 2013. Does sample size matter in qualitative research?: A review of qualitative interviews in IS research. Journal of computer information systems, 54(1), pp.11-22.

Meo, S. A., Eldawlatly, A. A., & Sultan, T. (2024). Impact of unstable environment on the brain drain of highly skilled professionals, healthcare workers, researchers, and research productivity in Pakistan. Saudi Journal of Anaesthesia, 18(1), 48–54.

Morse, J. M. (2021). Qualitative health research: Creating a new discipline. Routledge.

Naseem, S., Naseem, S., & Amir, Z. (2024). Effect of Staff Shortage on Patient Safety and Quality of Care. Annals of Human and Social Sciences, 5(4), 158–164.

Niu, F. (2022). A push-pull model for inter-city migration simulation. Cities, 131, 104005.

Noor, N., Rehman, S., Ahmed, Y., Rizwan, S., & Sarmad, M. (2024). Why do nurses leave their jobs? Understanding person-related hostility in the healthcare sector of Pakistan. PLOS ONE, 19(6), e0298581.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. International journal of qualitative methods, 16(1), 1609406917733847.

Punjwani, R., & Anwar, S. (n.d.). Oncology Nursing Education: Building a Specialty in Pakistan.

Rai, R., Thekkekara, J. V., & Kanhare, R. (2021). Herzberg's two factor theory: A study on nurses's motivation. RGUHS Journal of Allied Health Sciences, 1(1).

Ramlall, S. (2004). A review of employee motivation theories and their implications for employee retention within organizations. Journal of American Academy of Business, 5(1/2), 52–63.

Rostoker, G., Tröster, S., Masià-Plana, A., Ashworth, V., & Perampaladas, K. (2024). Dialysis nurse demand in Europe: An estimated prediction based on modelling. Clinical Kidney Journal, 17(7), sfae162.

Roth, C., Wensing, M., Breckner, A., Mahler, C., Krug, K. and Berger, S. (2022). Keeping nurses in nursing: a qualitative study of German nurses' perceptions of push and pull factors to leave or stay in the profession. BMC nursing, 21(1), p.48.

Scott, W.R. (2013). Institutions and organizations: Ideas, interests, and identities. Sage publications.

Shah, A., Munir, S., & Zaheer, M. (2021). Occupational stress and job burnout of female medical staff: The moderating role of psychological capital and social support. Journal of Management and Research, 8(1), 212-249.

Shahzad, M. N., Ahmed, M. A., & Akram, B. (2019). Nurses in double trouble: Antecedents of job burnout in nursing profession. Pakistan journal of medical sciences, 35(4), 934.

Shamsi, A. and Peyravi, H. (2020). Nursing shortage, a different challenge in Iran: A systematic review. Medical journal of the Islamic Republic of Iran, 34, p.8.

Singh, J., Mohamed, S. G. E. A., Mishra, V., & Rana, S. (2024). Unlocking retention: A prescriptive framework for retaining trained staff in critical care units. Journal of Health Organization and Management, 38(8), 1204–1227.

Smith, A. N., Baskerville, M., Ladge, J. J., & Carlton, P. (2019). Making the invisible visible: Paradoxical effects of intersectional invisibility on the career experiences of executive Black women in the workplace. Academy of Management Journal, 62(6).

Tahir, M. U., Nawaz, H., Arshad, H., ul Ain, H., Ahmed, M., & Khan, R. M. (2024). Prevalence and Correlates of Burnout and Mental Distress among Healthcare Professionals of a Public Sector Hospital in Lahore: A Cross-sectional Study. Journal of Society of Prevention, Advocacy and Research KEMU, 3(4), 8-13.

Tamata, A.T. and Mohammadnezhad, M. (2023). A systematic review study on the factors affecting shortage of nursing workforce in the hospitals. Nursing open, 10(3), pp.1247-1257.

Tamata, A.T., Mohammadnezhad, M. and Tamani, L. (2021). Registered nurses' perceptions on the factors affecting nursing shortage in the Republic of Vanuatu Hospitals: A qualitative study. Plos one, 16(5), p.e0251890.

Tanveer, F., Khalil, A. T., Ali, M., & Shinwari, Z. K. (2020). Ethics, pandemic and environment; looking at the future of low middle income countries. International Journal for Equity in Health, 19(1).

Wang, J.-J. (2024). Post-COVID nursing workforce crisis. Journal of Nursing Research, 32(5), e344

Wei, Q., Wang, Z., He, Y., Hong, X., Shen, X., & Zhang, S. (2024). A Qualitative Study on the Experience of Assisted Reproductive Technology in Women with Dyspareunia. International Journal of Women S Health, Volume 16, 543–553.

Witter, S., Wurie, H., Chandiwana, P., Namakula, J., So, S., Alonso-Garbayo, A., Ssengooba, F., & Raven, J. (2017). How do health workers experience and cope with shocks? Learning from four fragile and conflict-affected health systems in Uganda, Sierra Leone, Zimbabwe and Cambodia. Health Policy and Planning, 32(suppl_3), iii3–iii13.

Yaser Mohammed Al-Worafi. (2024). Nursing Education Training in Developing Countries. Springer EBooks, 1–15.

Yasir, M., Majid, A., Javed, A., Khan, Z.A., Malik, S., Naz, F. and Islam, E.U. (2020). Inquiring voluntary turnover for female nurses in pakistan through focused ethnography. Journal of Ayub Medical College Abbottabad, 32(2), pp.208-216.

Zahoor, S., Zahoor, M., Javed, F., Najam, M., Aslam, S., & Yasmeen, I. (2023). Determinants of Burnout Among Healthcare Professionals Working in the Labour Room of a Tertiary Care Hospital in South Punjab, Pakistan. Pakistan Armed Forces Medical Journal, 73(5), 1418.

Ziarukh, S., & Sabir, A. (2024). Burnout and patient safety culture assessment in a secondary care hospital. Pakistan Journal of Medical Sciences, 40(2ICON Suppl), S58.