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Regional perspectives on patient safety policies and initiatives: a focus group study with patient safety leaders in the Middle East and Asian regions

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ABSTRACT

Preventing and reducing risks and harm to patients is of critical importance as unsafe care is a leading cause of death and disability globally. However, the lack of consolidated information on patient safety policies and initiatives at regional levels represents an evidence gap with implications for policy and planning. The aim of the study was to answer the question of what patient safety policies and initiatives are currently in place in the Middle East and Asian regions and what were the main strengths, weaknesses, opportunities and threats in developing these. A qualitative approach using online focus groups was adopted. Participants attended focus groups beginning in August 2022. A topic guide was developed using a strengths, weaknesses, opportunities and threats framework analysis approach. The Consolidated Criteria for Reporting Qualitative Research checklist was used to ensure the recommended standards of qualitative data reporting were met. 21 participants from 11 countries participated in the study. Current patient safety policies identified were categorised across 5 thematic areas and initiatives were categorised across a further 10 thematic areas. Strengths of patient safety initiatives included enabling healthcare worker training, leadership commitment in hospitals, and stakeholder engagement and collaboration. Weaknesses included a disconnect between health delivery and education, implementation gaps, low clinical awareness and buy-in at the facility level, and lack of leadership engagement. Just culture, safety by design and education were considered opportunities, alongside data collection and reporting for research and shared learning. Future threats were low leadership commitment, changing leadership, poor integration across the system, a public–private quality gap and political instability in some contexts. Undertaking further research regionally will enable shared learning and the development of best practice examples. Future research should explore the development of policies and initiatives for patient safety at the provider, local and national levels that can inform action across the system.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Patient safety policies and initiatives have been shown to be successful in reducing harm when implemented in national or subnational contexts internationally, with varied success rates, as well as opportunities and challenges.

WHAT THIS STUDY ADDS

⇒ This qualitative analysis of strengths, weaknesses, opportunities and threats provides greater insights on the range of opportunities and challenges which impact patient safety policy and initiative success in the Middle East and Asian regions.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Given the importance of patient safety in reducing deaths and disabilities globally, it is important to develop regional learning on developing policies and initiatives that can inform best practice and improvement.

INTRODUCTION

Unsafe care is 1 of the 10 leading causes of death and disability globally. Improving the safety and quality of care is essential to achieving universal health coverage and better health outcomes in the Middle East and Asia where adverse events and patient and healthcare worker (HCWs) awareness are still an important challenge to be addressed across health systems.[1–3] Over the last 20 years, improvements have been made in reducing preventable harm, in part through global initiatives, including the WHO 'My Five Moments for Hand Hygiene' campaign and other guidelines to prevent healthcare-associated infections.[4 5] In 2021, the WHO published the 'Global Patient Safety Action Plan' providing a framework to meet seven objectives (policies, reliable system, safety of clinical process, patient and family engagement, education, information and partnership) by 2030.[6]

With its basis in recognising and reducing adverse events,[7] patient safety is a broad ranging concept with implications across disciplines, conditions, treatments and facilities. As such, prioritisation is a challenge for

health leaders, providers and HCWs across and within health systems. In 2010, the WHO commissioned a study to establish priorities for global patient safety, set direction to improve research methods and tools, and encourage further research in low-income and middle-income countries.[8]

Given the distinctions between priorities at the global and subglobal levels, regionally focused research has enabled a nuanced understanding of patient safety successes, challenges and priorities. In the Middle East, for example, a study of patient safety policies and practice described regional and national-level activities but did not evaluate the facilitators and barriers to improving patient safety.[9] A systematic review status of patient safety culture in Arab countries based on the findings of the Hospital Survey on Patient Safety Culture (HSPSC) similarly identified a pervasive culture of blame across the region, but the researchers focused on safety culture as only one element related to patient safety.[2] Similarly, Kang *et al* undertook comparative research on patient safety culture in Southeast Asian countries, which identified 13 studies using the HSPSC survey.[10] Analysis showed safety culture varied from low to moderate between countries, and that systematic and human factors influenced patient safety culture at the regional level, but again the research covered one area related to patient safety. Beyond academic research, a variety of regionally specific policies and initiatives have been established and reported on, but are hosted across different databases and stakeholder websites making it challenging to capture the breadth of activity regionally.

The lack of joined-up information on patient safety policies and initiatives at regional levels represents an evidence gap. It is important to gain expert insight and perspectives in the field of patient safety to track and facilitate progress. Currently, there is a sparsity of information on priority areas, as well as opportunities and challenges to drive new, or realise existing, patient safety policies and initiatives to improve patient safety. Quantitative research is not sufficient to collect detailed and nuanced information required to close this knowledge gap, instead qualitative focus groups enable researchers to elicit in-depth information from participants who can express themselves and clarify responses during the session, and can respond to and build on each other's responses. This qualitative study provides a snapshot of policies and initiatives by exploring regional perspectives the main strengths, weaknesses, opportunities and threats (SWOTs) to developing patient safety policies and initiatives from a group of experts working in the Middle East and Asian regions.

METHODS

Overview of the methods used

A qualitative approach using online focus groups was adopted to meet the study objectives. Focus groups are a method designed to enable the exploration of individual perspectives, facilitate discussion and ideas based on group dynamics and engagement.[11] Online focus groups were selected to enable maximum participation across the sample and bring individuals from different health systems together to discuss regional policies and priorities, which would not have been logistically possible without the digital conferencing technology used (Microsoft Teams). A recognised methodology for conducting focus groups through videoconferencing software developed by Abrams and Gaiser is widely used in academic research.[12] Researchers at The Riphah Institute of Healthcare Improvement & Safety (RIHIS) and Institute of Global Health Innovation (IGHI) with previous qualitative research experience performed the study. The process (both the design of the research and procedure followed) was underpinned by the recommended standards of qualitative data reporting outlined in the Consolidated Criteria for Reporting Qualitative Research and relevant information from the checklist is reported in the manuscript (eg, sampling, method of approach, sample size).[13]

Recruitment

Participants were recruited through RIHIS as individuals working in roles with a focus on patient safety and attended focus group meetings beginning in August 2022. The IGHI research team agreed on a participant list with RIHIS and sent invitations via email. Convenience sampling was used. The inclusion criteria were experts working with a focus on patient safety, or who are patient safety leaders in the Middle East and Asian regions. The predefined exclusion criteria excluded those who did not have any involvement in patient safety activities at a national or regional level.

Data collection

Eight focus groups were conducted between August and December 2022. The focus groups were facilitated using Microsoft Teams teleconferencing software. Each was recorded, and transcripts, hosted on secure servers, were compiled verbatim. To minimise bias, all focus groups were conducted in English and had minimal knowledge of the research team.

The topic guide (Multimedia online supplemental appendix 1), including open-ended questions, was used to cover relevant topics related to patient safety priorities during the focus groups, using a SWOT analysis approach. An SWOT analysis is a technique used to help organisations to identify these key topics in a structured way to enable strategic planning and improvement by identifying internal and external factors, both favourable and unfavourable, that impact the adoption of a project, a solution, an action or a set of actions (eg, patient safety policies and initiatives).[14] The approach has further been used in health research to support healthcare organisations and public health, including focusing on patient safety initiatives.[15] An example of this approach includes the use of SWOT to integrate the WHO patient safety curriculum into undergraduate medical education in Pakistan.[16] To

best answer the research question on patient safety priorities regionally, we adapted the SWOT analysis to consider strengths and weaknesses as current factors (rather than internal) and opportunities and threats as future factors (rather than external), enabling an assessment of implications on future policy and practice. The topic guide was designed with specific questions to integrate the SWOT analysis into focus group discussion, although this was checked and agreed by the research team during post-data collection analysis of focus group data.

Data analysis

The focus group transcripts were systematically reviewed by two independent researchers (MS and NO'B), using deductive thematic analysis. The framework analysis method was used to determine the process and actions of the analysis: familiarisation, identifying themes, indexing, charting and summarising, and mapping and interpretation.[17] The term policy was defined as 'a plan, course of action or set of regulations adopted by government, businesses or other institutions designed to influence and determine decisions or procedures' to ground subsequent analysis of the transcripts to generate codes and themes. The framework analysis approach was selected as offers used within multidisciplinary teams whose members have varying levels of experience with qualitative research.[18] At every stage of the data analysis, the coding process was both deductive, based on the topic guide and researcher experience with the topic, and inductive to enable the development of emergent codes and themes, which were supported by relevant participant quotations. Following the initial analysis, themes were presented to a third reviewer (AS) using the Mural visual collaboration platform and discussed among the three researchers (MS, NO'B and AS) to identify any discrepancies, amend final wording and agreed. The researchers also discussed data saturation which was believed to be met based on no new themes emerging following the analysis of the final two focus group transcripts.

RESULTS

Participant characteristics

A total of 21 participants were included in the study. They represented 11 countries across the Middle East and Asian regions, with the majority of participants coming from Pakistan (table 1).

Table 1 Description of focus group participants by country

Country	n (%)
Pakistan	11 (52.3)
Egypt	1 (4.7)
India	1 (4.7)
Japan	1 (4.7)
Jordan	1 (4.7)
Oman	1 (4.7)
Qatar	1 (4.7)
Saudi Arabia	1 (4.7)
Taiwan	1 (4.7)
Turkey	1 (4.7)
United Arab Emirates	1 (4.7)

Categorisation of themes

Responses to the questions 'What patient safety policies have been released in your region recently?' were categorised across five themes and 'What are good examples of patient safety initiatives taking place at the present time?' were categorised across 10 themes (table 2). As noted, the term policy was defined as 'a plan, course of action or set of regulations adopted by government, businesses, or other institutions designed to influence and determine decisions or procedures', which is distinct from initiatives which encompass a broader range of patient safety activities that fall outside of policy actions.

In response the question 'What facilitated the release of patient safety policies'? responses were categorised into four themes: accountability, advancements in health policy, leadership and national-level regulations. Accountability subthemes were awareness of the need for healthcare improvement and awareness of patient safety through serious incidents. Specific advancements in health policy included COVID-19 and pandemic management.

> COVID-19 was a blessing in disguise, an eye opener for all of us that we need to do more in healthcare. […] we developed and launched national guidelines for infection prevention and control Participant 21

Themes emerging through analysis of responses to the question 'What impedes the development of patient safety policies at the present time in your region?' included: community acceptance, lack of research, leadership, legal and regulatory, patient and public involvement engagement, policy, political instability and resources, including the health sector not prioritised and a lack of human resources/expertise.

> I think the one of the most important reasons for the delay in implementation of patient safety policies is that the healthcare sector is not in the top priority areas of the government. Participant 8

> We have yet to develop a dedicated team at a ministry level or in the hospital levels, which would just concentrate on policies, their implementation, and their upgrading Participant 14

The full list of themes and subthemes are presented in online supplemental appendix 2.

SWOT analysis of patient safety initiatives

The framework analysis of the SWOTs related to patient safety initiatives identified overarching themes (table 3).

Table 2 Reported patient safety priorities and initiatives in the region

Patient safety policies		Patient safety initiatives	
Themes	**Subthemes**	**Themes**	**Subthemes**
1. Gender declaration		1. Accreditation	
2. Laws/regulations	► Antimicrobial Resistance (AMR) regulations ► Set up regulatory bodies	2. Community engagement	► Awareness campaigns ► Framework for community engagement
3. Policy	► Communicable disease policies (eg, COVID-19) ► International Council of Nurses (ICN) workforce policy paper ► National blood transfusion policy	3. Education	► Establishing institutions ► Infection Prevention and Control (IPC) training ► Patient safety certification courses/training ► Patient safety curriculum development/ integration
4. Programmes	► Maternal health programmes ► National transformation programme ► Payment incentives ► Pharmacovigilance programmes	4. Events	► Global Ministerial Summit on Patient Safety ► International conferences on patient safety ► World Patient Safety Day
5. Standards	► Standards from primary care and hospitals ► WHO accreditation standards	5. Guidelines	► Guidelines developed through COVID-19 ► IPC guidelines ► Medication guidelines ► Regional guidelines
		6. Health facility/clinical initiatives	► Hospital government committees ► Medication safety initiatives ► Occupational safety initiative ► Patient safety friendly hospital initiative ► Safety huddles
		7. National reporting	
		8. Patient engagement	► Patient experience unit ► Patient safety caravan
		9. Research	► COVID-19 patient safety research ► Pakistan patient safety journal
		10. Stewardship	► AMR stewardship programmes ► Establishing the Saudi patient safety centre ► National patient safety healthcare network ► Patient safety regional consortium

DISCUSSION

Key findings

Current regional patient safety policies described by research participants include laws/regulations (eg, AMR regulations such as the Pakistan Anti-Microbial Resistance National Action Plan), policies (eg, National Blood Transfusion Policy in Pakistan, communicable disease policies and workforce policies in countries across the regions), programmes with patient safety element(s) included (eg, maternal health programmes in India, pharmacovigilance programmes such as the Pharmacovigilance Programme of India, national transformation programmes such as the Health Sector Transformation Plan in Saudi Arabia's Vision 2030) and standards (eg, WHO accreditation standards). Patient safety policies were facilitated through accountability (eg, awareness of the need for healthcare improvement and awareness of patient safety through serious incidents), advancements in health policy (eg, during the COVID-19 pandemic), leadership and national-level regulations. Policy development was considered to be impeded as a result of limited community acceptance, lack of research (eg, inadequate reporting and learning), leadership (eg, lack of healthcare leader engagement and accountability), lack of legislation, lack of patient participation, policy challenges, political instability, limited resources and systems challenges.

A large range of initiatives were categorised into distinct areas including accreditation, community engagement, education, events, guidelines, health facility/clinical initiatives, national reporting, patient engagement, research and stewardship. Each of these areas included multiple specific activities, with health facility/clinical level containing the largest range of initiatives, including the development of hospital governance committees, medication safety initiatives, occupational safety initiatives, the WHO patient safety friendly hospital initiative and safety huddles.

Strengths of patient safety initiatives described by participants included enabling HCW training, with shared learning as a key element, leadership commitment in hospitals, particularly in the private sector, and stakeholder engagement and collaboration. In discussing the strengths of initiatives at facility/clinic level, participants mentioned the development of organisational safety culture and improving accreditation, reporting and building patient-centric models of care. Regarding weaknesses, patient safety initiatives were challenged by

Table 3 SWOT analysis

Strengths	Weaknesses
Education (SWO) ▶ Initiatives enabling training of HCWs Health facility/clinical initiatives (SWOT) ▶ Development of organisational safety culture ▶ Improving quality through accreditation ▶ Realisation of the benefits of reporting ▶ Recognition for good work Leadership (SWOT) ▶ Leadership commitment in hospitals ▶ Private sector hospital leadership Stakeholder engagement and collaboration (SO) ▶ Patient engagement ▶ Provider engagement	Education (SWO) ▶ Disconnect between health delivery and education ▶ Lack of educational framework ▶ Lack of patient safety in medical curriculums ▶ Lack of patient safety training Health facility/clinical initiatives (SWOT) ▶ Implementation gap ▶ Language and communication barriers ▶ Low clinical buy-in ▶ Low patient safety awareness ▶ Poor employee retention ▶ Poor stakeholder communication/collaboration Leadership (SWOT) ▶ Lack of hospital engagement Legislation and regulation ▶ Lack of legal framework Patients moving between providers Policy (WO) ▶ Lack of national policy/standards ▶ Lack of patient safety framework ▶ Lack of policy-maker awareness Political instability (WT) Research (WO) ▶ Lack of available data Resources (WT) ▶ Financial limitations ▶ Lack of human resource/expertise ▶ Lack of infrastructure System challenges (WT) ▶ Conflicting priorities and initiatives ▶ COVID-19 ▶ Lack of basic health services ▶ Lack of HCW awareness ▶ Lack of monitoring systems ▶ Measurement systems not comprehensive ▶ Unequal process across the system
Opportunities	**Threats**
Education (SWO) ▶ Fellowships and further training ▶ Training programmes Health facility/clinical initiatives (SWOT) ▶ Designing for safety (eg, products, processes, services, environments) ▶ Development of a just culture ▶ Implementing best practice without accreditation ▶ Improved incident reporting/monitoring and evaluation ▶ Interprofessional teams ▶ Sensitising HCWs/hospital leadership Improved standards Leadership (SWOT) ▶ Develop committed Ministries of Health Patient and public inclusion and engagement Patient safety prioritisation ▶ Create patient safety champions ▶ Expand patient safety culture ▶ Global advocacy Policy (WO) ▶ Educating policy-makers ▶ National patient safety and quality policy ▶ Patient safety as a core indicator of Universal Health Coverage (UHC) Research (WO) ▶ National-level research and incident reporting ▶ Reframing patient safety in systems-based approach ▶ Using research/data to inform policy Stakeholder engagement and collaboration (SO) ▶ Shared learning	Community acceptance Health facility/clinical initiatives (SWOT) ▶ Lack of reporting culture Leadership (SWOT) ▶ Changing leadership ▶ Lack of leadership awareness and commitment Political instability (WT) Resources (WT) ▶ Human resource shortages ▶ Lack of funding Systems challenges (WT) ▶ Integration across the system/horizontal integration ▶ Public/private sector quality gap

HCWs, healthcare workers; SWOT, Strengths, Weaknesses, Opportunities and Threats.

a disconnect between health delivery and education, lack of training, implementation gaps, low clinical awareness and buy-in at the facility level, a lack of leadership engagement and low community acceptance. At a systems level, lack of basic health services and competing priorities and initiatives, exacerbated by financial limitations and lack of human resources/expertise were seen as current challenges, alongside a lack of national policy and policy-maker awareness and commitment. In some contexts, political instability was considered a challenge.

Participants noted a variety of future opportunities. At the health facility/clinical level, there could be greater development of a just culture and the design of products, processes, services and environments for safety. Education, including training programmes and fellowships, was considered opportunities alongside improved patient safety reporting and the collection of data to improve research and shared learning. Leadership was considered central to developing patient safety initiatives in the future, alongside improved standards, and developing national and global policies. It was also noted that multistakeholder collaboration will be central, including involving patients and the public, and creating patient safety champions. Future threats include a low leadership commitment and changing leadership, and challenges of integration across the system and a public–private quality gap. These threats are further challenged by resourcing and political instability in some contexts. At the facility level, a lack of reporting culture was considered a threat.

Comparison with existing literature

The patient safety policies and initiatives listed by participants in the research are largely in line with what is already well known globally, though this research was able to capture these in one place and alongside a range of global, regional, and national policies and initiatives that are being used in the Middle East and Asian regions. This work was also able to build on existing research. For example, the 2010 WHO research on global priorities identified inadequate competence and skills training as a priority,[19] and as such it is unsurprising that education was a theme raised by participants as a weaknesses in the Middle East and Asian region. However, this research provides greater insights on where the specific challenges lie in the Middle East and Asian regions, specifically a disconnect between health delivery and education, as well as a lack of patient safety training in the health facilities/clinics. Similarly, at the policy level, participants highlighted patient safety policy uses and gaps, but also opportunities to develop patient safety policies in the future through the development of committed leadership, accountability and awareness of the need for healthcare improvement, and learning lessons from serious incidents. Existing research further outlines the value of engaged national leadership, specifically, Ministries of Health, in enabling patient safety initiatives in the Middle East.[20]

Focusing on the SWOT analysis, a lack of appropriate knowledge and transfer identified in the WHO research resonates with participant views that there are future opportunities to develop research and stakeholder engagement to advance patient safety initiatives. SWOTs related to health facility/clinical initiatives have also been widely reported on in existing studies. Organisational safety culture, for example, has been widely researched internationally as an important aspect of driving safer care, although evidence on the link between safety culture and patient outcomes is scarce.[21] Alshammari *et al* found that nurse–patient communication barriers in Saudi Arabia had implications for patient safety.[22] Kodate *et al* note that healthcare practitioners in Japan were more likely to use incident data to improve patient safety where professional siloes were reduced, psychological burden was addressed, leadership showed a duty of care to junior staff, and educational and innovative models to reporting incidents in hospital and community care were embraced.[23] The centrality of leadership at all levels of the system in realising future opportunities or posing threats was a clear theme identified through the SWOT analysis, again mirrored in academic and grey literature focused on facilities/clinics,[24 25] as well as national policy.[26 27]

Implications for research, policy and practice

Future research should explore the development of policies and initiatives for patient safety at the provider, local and national levels to build up more nuanced findings that can inform action in each of these areas of the health system. Such research would advance knowledge on the current challenges and future threats identified by our research participants and enable quality and safety improvements across the regions and countries of the Middle East and Asia. The research highlighted some of the complex systems challenges associated with quality and safety improvements in some countries and regions. For example, human resource and financial constraints were noted in almost all settings, but some participants highlighted the threat of political instability in limiting advancement of the patient safety agenda. Urgent research is required to explore the impact of political instability, particularly the frequent changing of political leadership, on patient safety policies and initiatives, and how negative impacts can be mitigated to drive stable advancement of safety and quality.

Previous research highlighted engaged leadership across different levels of the system, as such a key area of need for further investigation is how to develop sustained engagement at Ministry of Health, local government and provider organisations. Mechanisms in engaging leaders will likely differ across these levels of the system, and so, developing a joint up approach to leadership engagement, including capacity building, will be essential in developing policies and initiatives for patient safety in the long term. The value of undertaking regional research enables the development of shared learning and best practice examples and case studies. For example, the qualitative approach taken enabled participants to outline positive examples in specific country contexts, including in Oman and Pakistan, that can be expanded on to provide regional best practice examples for others.

The importance of multistakeholder engagement in driving advancement in developing and implementing patient safety policies and initiatives was clearly expressed in the focus groups. However, the patient perspective is a key aspect missing from this research, and this must be embedded in further research and policy development. National and local policy-makers must ensure they

engage with relevant stakeholders, including patients and the public, in developing patient safety policies, while providers must seek to develop codesign methodologies and receive feedback from patients, families and caregivers when implementing patient safety initiatives in the healthcare setting. A top-down and bottom-up approach to patient and public engagement in safety and quality will strengthen policies and initiatives to bring benefits back to stakeholders and the wider system.

As such, key priorities for research and policy are:

- Conduct research on the impact of political instability on patient safety priorities and initiatives.
  - Research on the impact of political instability, particularly the frequent changing of political leadership, on patient safety policies and initiatives, and how negative impacts can be mitigated will drive stable advancement of safety and quality.
- Develop a joint-up approach to leadership engagement
  - Developing a joint up approach to leadership engagement, including capacity building, will be essential in developing policies and initiatives for patient safety in the long term.
- Translate research findings into actionable shared learning and best practice examples
  - Undertaking regional research to enable the development of shared learning and best practice examples will encourage others to pursue tried and tested approaches.
- Engage patients and the public in policy-making and implementation of initiatives
  - National and local policy-makers must ensure they engage with relevant stakeholders, including patients and the public, in developing patient safety policies, while providers must seek to develop codesign methodologies and receive feedback from patients, families and caregivers when implementing patient safety initiatives in the healthcare setting.

Strengths and limitations

The research study offers a snapshot and insights into patient safety policies and initiatives across the Middle East and Asian regions. Such information is particularly important in understanding where health systems and providers are developing patient safety approaches, where gaps remain and critically, what future opportunities can be capitalised on to improve patient safety outcomes. A key strength of the study is the range of participants who attended the focus groups, as we were able to capture diverse observations and viewpoints. These individuals were from countries across the Middle East and Asia regions and represented academia, national and regional systems, and health facility leadership across public and private institutions. Semistructured interviews also enabled the multidisciplinary research team to gain nuanced insights from participants.

A primary limitation of the study is the relatively low number of participants given the regional scope of the research. However, the research was designed to explore the topic at a high level, providing a snapshot of information, rather than an in-depth exploration within and across countries. The self-selection of study participants is another limitation as the sample and their reflections may not be representative of all patient safety experts in the regions. Individuals with an interest in patient safety were more likely to agree to take part in the study, so their experiences with patient safety policies and initiatives may be more extensive, therefore, possibly causing the findings to have some bias towards stronger opinions on patient safety priorities. Similarly, as 52.3% of participants were from one country (Pakistan), results may also be biased towards the patient safety priorities nationally in Pakistan. However, as several themes were universally noted by all participants in the research and no themes raised were excluded, the bias should be minimal. Finally, conducting the focus groups online via Microsoft Teams may have excluded participants who were unable to attend online meetings due to individual requirements/preferences or infrastructure challenges (eg, limited network connectivity).

Contributors NO'B, MS, ZA and MD conceptualised the manuscript. MS, NO'B and AS undertook the focus groups. NO'B, MS, AS, KL and YW completed the data analysis. NO'B and MS co-lead on the administration and writing of the original draft with support from AS. All authors equally contributed to the writing, reviewing and editing. ZA and MD supervised the work. All authors contributed to and approved the revisions. NO'B is responsible for the overall content as guarantor.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Ethics approval The study protocol was approved by the Imperial College Research Ethics Committee (ICREC) (no. 22IC7427).

Provenance and peer review Not commissioned; externally peer reviewed.

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Multimedia Appendix 1: Topic Guide

Instructions for the researcher

Confirm that the interviewees understand:

- The purpose of the research
- What the focus group entails
- How confidentiality and anonymity will be assured
- That they can stop at any time without explanation

And that:

- They have had the chance to ask questions
- They are content to be recorded and that they have the option to switch off their video if they wish

Topic areas for the focus group

1. Introductions (including collection of organisation, role, and country information), ground rules and an overview of activities
2. What do you think are the priority areas to advance patient safety globally? In your region?
    a. Prompt – Brainstorm
3. What patient safety policies that has been released in your region recently and what facilitated their release?
    a. Prompt - In different subspecialties? Focused on the primary, secondary or tertiary level? Related to COVID-19? Others?
4. What impedes the development patient safety policies at the present time in your region?
    a. Prompt - Challenges in health sector? Challenges in wider government? Challenges at national, regional, and/or organizational level? Resource challenges? Others?
5. What are good examples of patient safety initiatives taking place at the present time?
    a. Prompt – What are the current **strengths** of the interventions and/or their implementation? What are the **future opportunities**?
6. What are the challenges with patient safety initiatives taking place at the present time?
    a. Prompt – What are the current **weaknesses** of the interventions and/or their implementation? What are the major **threats** to improving patient safety?

Multimedia Appendix 2: Select participant quotes from thematic analysis

What patient safety policies have been released in your region recently?

1. Gender declaration
"The gender declaration as an important, you know, policy paper came out of it." Participant 1

2. Laws / regulations
2.1 AMR regulations
"The [National Institute of Health] NIH is closely working for creating awareness about antibiotic awareness and antibiotic stewardship, they're working very well." Participant 18

2.2 Set up regulatory bodies
"The healthcare commissions at provincial level, they also [develop] quality indicators for measuring patient safety and for highlighting the patient safety issues" Participant 12
"There's also a few other isolated activities which has been launched by the government like formation of healthcare commissions." Participant 15

3 Policy
3.1 Communicable disease policies (e.g., COVID-19)
"We have the national guideline regarding COVID, COVID care, and treatment plans, and isolations." Participant 12

3.2 ICN workforce policy paper
"There was a white paper that came out at the same time with ICN, regarding staff, nursing safety, safe nursing and safe nursing ratios" Participant 1

3.3 National blood transfusion policy
"We are now presently developing national blood transfusion policy and I will make sure that quality is given due importance in that safety policy of Pakistan" Participant 19

4 Programs
4.1 Maternal health programmes
"There are a lot of programs on safe maternal healthcare which have been launched by the government" Participant 10

4.2 National transformation programme
"[The] National Transformation Programme 2020, called NTP 2020, is a foundation for the Saudi vision 2030." Participant 1

4.3 Payment incentives
"Since the policy was released […] I'd like to emphasize that each activity is promoted by a healthcare payment system by the Government. So, the more we promote patient safety, the more we get reimbursed by patients and healthcare payment system." Participant 6

4.4 Pharmacovigilance programmes
"In our country they have the Pharmacovigilance Program that the Government of India has started and […], both government and non-government organizations are participating" Participant 10

5. Standards
5.1 Standards from primary care and hospitals
"I take the example of Oman […] They have addressed patient safety. They are adopting a set of standards for primary care and for hospitals." Participant 11

5.2 WHO accreditation standards
"WHO's eastern Mediterranean region work on the strategic policy […] and they introduced some accreditation standards." Participant 16

What facilitated the release of patient safety policies in your region?

1. Accountability
1.1 Need for healthcare improvement
"We had a situation and analysis about four to five years ago with World Health Organization of understanding the status of patient safety and healthcare quality in the country." Participant 20

1.2 Awareness of patient safety through serious incidents
"They are willingly reporting drug reactions. So, when the government puts up something […] there is, you know, accountability, things really happen." Participant 10

2. Advancements in health policy
2.1 COVID-19 and pandemic management
"Recently, during the COVID-19, at the national level, infection prevention and control guidelines were released specially for the whole country by the National Institutes of Health" Participant 8
"COVID-19 was a blessing in disguise, an eye opener for all of us that we need to do more in healthcare. […] we developed and launched national guidelines for infection prevention and control" Participant 21

3. Leadership
"It's all through the leadership, all through the government, how stringent and how effective the controls are." Participant 10
"I take the example of Oman. They are very committed, and the commitment came from leadership, the top leadership." Participant 11

4. National level regulations
"We have good systems based on regulations. Regulators are there, not in the provinces, but at the federal level" Participant 19

What impedes the development of patient safety policies at the present time in your region?

1. Community acceptance
1.1 Limited community awareness
"A lot of it depends on the education level of the communities [and] their understanding and the perception of patient safety." Participant 10

1.2 Slow community acceptance
"[…] but I know that the community has always resisted accepting new things, and not only that, the medical community in general, doctors, surgeons. So what we face is the resistance from medical staff, not only the communities themselves, but we try to approach that by introducing the change slowly." Participant 3

2. Lack of research
2.1 Inadequate reporting and learning

"So globally, I think reporting feedback, performance measurement, and medication safety is one of the challenges as well." Participant 16
"In Pakistan, because there are no systemised integrated reporting systems, how are we exposed to incidents? We get to know them through media. And that is not journalism that is sensationalism." Participant 17

2.2 Lack of data
"We have very little data related to hospitals. […] we are not recording the proper data, we are not doing any research. Any incident which is reported, we are not analysing the root cause" Participant 7
"If you don't have data you cannot improve, you cannot do the trend analysis." Participant 16
"I think the problem is we don't have data, we don't have enough research. Whatever research or data we have, it is still at the institution level." Participant 18

3. Leadership
3.1 Lack of healthcare leader engagement
"The other is healthcare leadership […] there's a lot of work that we need to do, and a big room for improvement to get the healthcare leaders also to be interested in safety" Participant 1

4. Legal and regulatory
4.1 Lack of legislation
"[A] challenge could be legislation around [patient safety], making it a liability for the organization, both in the public and private sector." Participant 13

5. Patient and public engagement and inclusion (PPIE)
5.1 Lack of patient participation
"We're very paternalistic in our approach, we think whatever we are doing is in the best interest of the patient, without taking a moment to understand what that best interest is." Participant 17

6. Policy
6.1 Lack of policymaker interest/political commitment
"If you talk about healthcare sector in low- and middle-income countries, especially such as Pakistan, it's overcome by multiple challenges […] and these challenges are driven by the factors at all levels, including national, regional, as well as organisational, and some of these factors are…[a] lack of political commitment." Participant 21

6.2 Lack of policymaker awareness
"The reason that we don't have policies in place backed up by stringent laws is […] a lack of awareness and we're very innocent beings, we don't know what patient safety is about. And I mean, the entire health care sector." Participant 17

"I think the awareness of advocacy at the high level, [among] the decision makers who develop the policies and implement these policies, was also lacking." Participant 21

6.3 Lack of national policy
"Actually, we don't have policies in most of the [regional] countries, at least in Pakistan we don't have a patient safety policy approved by the Government of Pakistan." Participant 19

6.4 Poor policy translation
"Proper implementation in true letter and spirit is needed at the grassroots level. Many hospitals are still not accredited with this healthcare standard, or the regulation which is available in the country" Participant 15

7. Political instability
"If you talk about healthcare sector in low- and middle-income countries, especially such as Pakistan, it's overcome by multiple challenges […] and these challenges are driven by the factors at all levels, including national, regional, as well as organisational, and some of these factors are [related to] political instability." P21

8. Resources
8.1 Cost
"For instance, at the beginning, I integrated all the Joint Commission International standards into our system, and then quit, for instance, because it is very costly." Participant 7
"They did not allocate a proper or sufficient budget for the healthcare sector, which [creates] a big delay for the implementation of the health care policies." Participant 8

8.2 Lack of infrastructure
"In low- and middle-income countries […] essential resources are still lacking. Water and sanitation, waste management and all these things are still not there" Participant 11

8.3 Health sector not prioritized
"I think the one of the most important reasons for the delay in implementation of patient safety policies is that the healthcare sector is not in the top priority areas of the government." Participant 8

8.4 Lack of human resources/expertise
"We have yet to develop a dedicated team at a ministry level or in the hospital levels, which would just concentrate on policies, their implementation, and their upgrading" Participant 14

9. Systems challenges
Patient safety not prioritized / Competing priorities
"At policy level we are dealing with other pressing priorities. They don't see patient safety as a key priority that needs to be integrated into all [health] programs" Participant 11

9.1 Lack of accountability
"So, in addition to this we don't have accountability mechanisms. The accountability is not well developed, so that the provision of care is continuously supported by information to the end user, the standards they expect to have based on their needs." Participant 11

9.2 Limited participation across stakeholder groups
"Policy by itself should be participatory, involving all stakeholders. It's not only the [responsibility of] the Minister of Health." Participant 11

9.3 Lack of coordination regionally
"The lack of coordination between the federal and provincial governments." Participant 21

9.4 Commercial interests of professional organizations
"[…] the professional associations try to block and stop the moving forward, especially in terms of accreditation and renewal for licensing […] These companies try to make money, and focus on the economical aspect of this part, and ignore all the safety and quality related important topics." Participant 4

9.6 Sustainability
"I would say we have very good support in my country for patient safety, but when we had the COVID pandemic, safety was put on the backburner." Participant 1

9.7 Absence of national health care system

"For [an] existing healthcare system, we have a very small GDP allocated towards it, among the whole financial budget. We don't have centralized system, 80% healthcare services are out of pocket." Participant 13

What are good examples of patient safety initiatives taking place at the present time?

1. Accreditation
"We are accredited by the Joint Commission." Participant 7

"Accreditation has been taken up by the private hospitals. We have the national accreditation board for hospitals. We also do joint commissioning. The government accepts, you know, it is an accreditation process" Participant 10

"[The] private sector also pursuing Joint Commission International Accreditation Standards and I think now we have three hospitals which are Joint Commission accredited." Participant 13

2. Community engagement
1.1 Framework for community engagement
"They developed a framework for community engagement." Participant 11
"Even the tier two cities have participated in the patient safety program. So, you know, overall the communities are getting educated." Participant 10

2.2 Awareness campaigns
"We have a big event [called] patient safety week, where universities and different hospitals [partner] to do different activities around the country to raise awareness on patient safety. Participant 2

3. Education
3.1 Establishing institutions
"2.5 years ago we launched a Center for Patient Safety here […] We have a three pronged approach […] [first] is research, second is academic and training, and third is advocacy" Participant 13

3.2 IPC training
"We have done some training, and in total during COVID we trained 3,000 healthcare workers and practitioners all over Pakistan. But that is even less than the tip of the iceberg." Participant 21

3.3 Patient safety certification courses/training
"We have 16 modules of Institute of Healthcare Improvement which are already added into the curriculums of MBBS, BDS, and the nursing degree." Participant 12
"Shiffa has started a fellowship program on the healthcare quality and health administration. There are almost 20 or 25 participants in this fellowship batch […] They're from procurement, they're from nursing, from the doctor side, [and the] pharmacy side" Participant 15

3.4 Patient safety curriculum development/integration
"We are integrating patient safety issues into our curriculum resources, these are very important" Participant 7
"We also launched maybe first ever quality patient safety module for undergraduate medical students. We also launched first ever undergraduate quality patient safety module for nursing students. This year we are moving towards postgraduates, and we are planning to offer them a quality patient safety module" Participant 13

4. Events

4.1 International conferences on patient safety

“We are running with the International Patient Safety conferences on a yearly basis, or twice a year. We [also] organize and deliver the seminars and conferences” Participant 12

4.2 Global Ministerial Summit on Patient Safety

“I was leading the Organising Committee of the Fourth Global Ministerial Summit on Patient Safety. So if you ask me, in our region, that was the biggest patient safety event that took place […] I think this is how we can get governments and get politicians to be interested in patient safety” Participant 1

4.3 World Patient Safety Day

“One example is the Patient Safety Day. It has come through WHO to various governments and you see a lot of participation.” P10

5. Guidelines

5.1 IPC guidelines

“[The] National Institute of Health joined with the WHO and for the first time we made a national strategic plan for implementation, and this was for the implementation of IPC guidelines.” Participant 21

5.2 Guidelines developed through COVID-19

“We have the national guideline regarding COVID-19, COVID-19 care, and treatment plans, and isolations.” Participant 12

5.3 Medication guidelines

“The high alert medication guidelines at the national level [were] just released on 27th September [2022].” Participant 15

5.4 Regional guidelines

“[The Health Care Commission] have developed in Punjab their guidelines and policies or standards for the primary health care, secondary healthcare and tertiary healthcare sectors.” Participant 8

6. Health facility / clinical initiatives

6.1 Hospital governance committees

“We have an epic body, which is the Quality Council. There are formal structures that inform different committees, like the pharmacy and therapeutics committee, the risk management committee, the safety security committee. There are many committees that are looking at patient and staff safety from different angles.” Participant 15

6.2 Medication safety initiatives

“I think I have taken a lot of medication safety initiatives, which ultimately results in patient safety. [One] initiative would be the removal of concentrated electrolytes from the floor, and now we are making it available in the most readily usable form so that no death related to potassium will ever occur” Participant 18

6.3 Occupational safety initiative

“[The] central province started an initiative to help professionals to drive transformation changes in the neglected domain of occupational safety, especially [in] the hospitals” Participant 21

6.4 Patient safety friendly hospital initiative

"WHO allowed eight hospitals in Pakistan to implement the Patient Safety Friendly Hospital Initiative. It was known as PSFHI which aimed to put into practice a harmonized set of everyday based patient safety standards to which hospitals should adhere to ensure safer care" Participant 21

6.5 Safety huddles
"Every day at 7:30am on the usual days, and Thursdays 8am, the whole hospital leadership meets online or physically. We have a very simple organised huddle that takes around 15 minutes to address the climate, not just the culture. The different smaller areas also have a huddle" Participant 9

7. National reporting
"Every month, we are submitting indicators to the Ministry of Health, they are benchmarking and you know, sending us your current situation and doing a kind of dashboard and benchmarking institutes, hospitals, and you know, telling us that this is your third stage, you need to improve in this area" Participant 7

"They created something called Zelda, Zelda in Arabic means quality […] whereby all the hospitals private and governmental are mandated to report on a quarterly basis, specific [key performance indicators] that through some very electronic and technical ways can be tracked" Participant 9

8. Patient engagement
8.1 Patient experience unit
"We've always had [a] Patient Relations Office, which was actually being underutilised or mis-utilised as a complaint cell […] We are right now transitioning it into something called the Patient Experience Unit, where patients can, you know, share their experience" Participant 17

"Patient Relation Officers […] interact with our patients and their families every day, and our objective is to engage them and have that conversation with them where they can highlight their problems or questions, or if they feel that they were not given enough time with their doctor." Participant 17

8.2 Patient Safety Caravan
"[Patient Safety Caravan] is a project by the WHO, which is all about patient empowerment through patient engagement." Participant 17
"We give them booklets to sort of take care of their own health as an active stakeholder, rather than a passive person who's just being provided care by third parties" Participant 17

9. Research
9.1 COVID-19 patient safety research
"Our Research Institute are an associated partner with the European Union. We did research on COVID-19 and at the hospital level, health care facility level, we did many small projects." Participant 7

9.2 Pakistan patient safety journal
"We recently launched the BMJ journal for the Research for Patient Safety." Participant 12

10. Stewardship
10.1 AMR stewardship programmes
"One is antimicrobial stewardship programme, in which the steward is the pharmacist responsible for the rational use of antibiotics. There is a whole process and mechanism we follow. We review the cultures, we review the antibiogram, we work with ID physicians, and

with the help of critical information, the pharmacist helps physicians in escalating and de-escalating broad spectrum antibiotics" Participant 18

10.2 Establishing the Saudi patient safety centre
"Establishing the Saudi Patient Safety Centre in 2017, I think was a very important commitment, and a vehicle for change to kind of push safety forward within Saudi Arabia" Participant 1

10.3 National patient safety healthcare network
"Now the government of India has launched a national patient safety healthcare network […], the national health system resource center. This is a very good example of how the country, how the Ministry of Health, is structuring and bringing [patient safety] down to each and every level." Participant 10

10.4 Patient safety regional consortium
"We recently announced patient safety regional consortium in which we engaged regionally different countries and now we started working globally with the countries in our region to promote patient safety initiatives" Participant 8

What are the current strengths of the interventions and/or their implementation?

1. Education (SWOT)
1.1 Initiatives enabling training of HCWs
"[Through] the Patient Safety Friendly Hospital initiative we have trained more than 100 hospitals, both public and private [sector]" Participant 20

2. Health facility/clinical initiatives (SWOT)
2.1 Development of organisational safety culture
"In this hospital the leadership are continuously promoting safe culture, development of safe culture. And since last two years, we are working on the non-punitive culture and the development of the data so that at the policy level," Participant 16

2.2 Improving quality through accreditation
"Aga Khan University achieve accreditation that is JCI accreditation a long time ago, I guess, almost one and a half decade ago as their first accreditation […] this is one initiative that they adopted to improve equality and patient safety at the institution level." Participant 13

2.3 Realisation of the benefits of reporting
"I think it has been realized more that the reporting of adverse events is very, very important and to be used as a tool for quality improvement. That understanding was something totally unthinkable before that." Participant 20

2.4 Recognition for good work
"And very importantly, that [good behaviours] are encouraged and we identify the good catches, or the near misses and all of these people get either awarded, or they get to be recognised." Participant 9

3. Leadership (SWOT)
3.1 Leadership commitment in hospitals
"I think leadership commitment is important. I'm so lucky, for instance, since the beginning that I am building system at institutional level, that I already mentioned you, I'm working in this circle for more than 25 years, or in Saudi Arabia or in other countries that I'm working with hospitals leadership commitment, usually 100%." Participant 7

"I take the example of Oman […] They are very committed, and the commitment came from the leadership, the top leadership" Participant 11

3.2 Private sector hospital leadership
"The private sector in Pakistan actually took the lead in bringing patient safety or quality in healthcare service delivery. […] they formed quality units in their hospitals, they developed guidelines and training for their staff, and then they went in to apply for accreditation from DCI." P19

4. Stakeholder engagement and collaboration
"It's not just one entity or one organisation or one person that leads safety, we have different entities in Saudi [Arabia] that are contributing to safety. We've got our local/national healthcare accreditation organisation called Sebago. We have the Saudi Food and Drug Administration. We have the Saudi Commission for Health Care Specialties, of which, one of its values is patient safety" Participant 1

4.1 Patient engagement
"We give our patients flyers in the local language, which our nurses explain to the patient as well ([e.g.,] that you can ask your doctor if they have, for example, washed their hands before they came into your room to examine you)[…] We've given them the power to ask questions to become a part of healthcare that they're being provided." Participant 17

4.2 Provider engagement
"The healthcare providers are also participating. You know, becoming aware of the need for patient safety. So, there is an overall improvement in patient safety implementation" Participant 10

What are the future opportunities?

1. Education (SWOT)
1.1 Fellowships and further training
"Shiffa has started a fellowship program on the healthcare quality and health administration. There are almost 20 or 25 participants in this fellowship batch […] once that batch is passing out the next batch will be from external [organizations] so that [staff from] other hospitals can come in and get the fellowship while they are working." Participant 15

1.2 Training programs
"[We need] a very robust methodology of training of healthcare workers because people will come and go. There has to be a structured training program so that we don't miss out, because patient safety is a lot of infrastructure, technology and resources, but it's a lot more to do with the mindset of the healthcare workforce." Participant 10

2. Health facility/clinical initiatives (SWOT)

2.1 Designing for safety (e.g., products, processes, services, environments)
"My Health Bank helps [clinicians] to see what [facilities] the patient visited, which doctor [they saw], and which medicine was prescribed. So, if they're going to visit another doctor in the same speciality, or if there are any medications for the patients, [clinicians are] able to see their history." Participant 5

"Really work in healthcare it should be designed in such a way that patient safety becomes inherent in the way we work, our work culture and buildings, our infrastructure, our policies, protocols, everything encompassed." Participant 10

"All activities should consider patient safety from the design, the provision of care and the evaluation of the outcomes based on patient safety indicators as well" Participant 11

2.2 Development of a just culture
"We are working on the culture development, development of the just culture, in which everybody in the organisation feels free to raise the safety concern, without fear of retaliation." Participant 16

"Anybody can very comfortably report if they're uncomfortable with anything happening around the care of a particular patient and the incidents are always looked at through a lens which does not result in penalisation, because we want to push them to come up with ideas to improve patient care" Participant 17

2.3 Implementing best practice without accreditation
"I will buy or purchase the Joint Commission, seventh edition, and I'll tell you why; I don't have to have my place accredited. I don't have to pay money for the survey, I will use this as a best practice [guide]" Participant 9

2.4 Improved incident reporting / Monitoring and evaluation
"There should be […] reporting of incidents and sharing of best practices so that we can learn [from] each other and within the organization. We [would] all have such reporting and monitoring surveillance programs." Participant 10

2.5 Inter-professional teams
"From a structure standpoint, having the appropriate teams, even the Minister of Health is key. You need to have teams that are not [just a] physician." Participant 9

2.6 Sensitising HCWs/hospital leadership
"The hospital leadership, who whoever owns the hospital, either public or private, should be sensitised [to understand] that patient safety is an issue and if they invest in it, if they train on it, this will ultimately [be] in their benefit." Participant 18

3. Improved standards
"I visited Pakistan for some time, yes, you have some minimum standards, but still there are some ways to go in Pakistan or in India, […] or the Central Asian republics" Participant 7

4. Leadership (SWOT)
4.1 Develop committed Ministries of Health
"So number one, have a department at the Ministry of Health, and the governance of a hospital, a clinic, a healthcare system that is truly dedicated to safety and quality." Participant 9

5. Policy (WOT)
5.1 National patient safety and quality policy
"We can improve ourselves by devising some strong policies for the national programmes" Participant 16
"We need to now put in place national and provincial policies on quality and we have to have quality being implemented in all other areas, whether this is infectious control disease, whether this is lifestyle disease, all other diseases, and the healthcare system needs to be, you know, tuned into the pattern of quality that needs to be put in place" P19

5.2 Patient safety as a core indicator of UHC
"One thing that we should explore is the link of patient safety to the current agenda, the current agenda at country level. If you have, for example, universal health coverage you can include the universal health coverage in this patient safety UHC agenda, so that all activities

should consider the patient safety from the design, the provision of care, and the evaluation of the outcomes based on patient safety indicators," Participant 11

5.3 Educating policymakers
"We have to advocate the policy aspect for our policy makers, so that they should be reflected into our future policies" Participant 21

6. Patient safety prioritization
6.1 Create patient safety champions
"It's the champion that would make sure that safety is always on the agenda" Participant 1

6.2 Expand patient safety culture
"Unless we develop a proper culture, in which all healthcare workers doctors, pharmacists, nurses, paramedics are the part of that culture, we can't do or achieve anything for the patient safety." Participant 8

6.3 Global advocacy
"We have to work on advocacy, we have to improve the safety culture, we have to work on human factors engineering, and ergonomics, and learn from high reliability industries. As I mentioned, we have to have platforms for learning." Participant 1

"We need to continue advocacy [and] providing needed support, showing the good examples, creating and networking […] and encouraging learning from each other." Participant 11

7. Patient and public inclusion and engagement (PPIE)
"Talk about safety culture and define the safety culture in a very simple way that is locally understood by the caregivers, the staff, clinicians and non-clinicians, so they can feel that they are part of the solution, not of the problem." Participant 9

"How are we going to become more aware or how do we give that awareness to our patients? That is only possible through patient engagement, which will result in patient empowerment." Participant 17

8. Research (WO)
8.1 National level research and incident reporting
"It would be ideal [to] have a centralised database reporting mechanism in place and everybody would record their incidents there and then we would review those to eventually [put] strong policies in place for patient safety" Participant 17

"We don't have to like reinvent the wheel, the structures [and] methodologies are available […] all the agencies should work together and do a grand study at a national level." Participant 18

8.2 *Using research/data to inform policy*
"It would be ideal [to] have a centralised database reporting mechanism in place and everybody would record their incidents there and then we would review those to eventually [put] strong policies in place for patient safety" Participant 17

"We need to review the data, or we have a lot of research work [that] has been published in international or national journals, which we can take up to the higher ups, to the Prime Minister or the health agencies." Participant 18

8.3 *Reframing patient safety in systems-based approach*

"I really strongly feel that until we extend patient safety culture to primary and secondary healthcare, we […] will not make a meaningful difference" Participant 14

9. Stakeholder engagement and collaboration
9.1 Shared learning
"We have to create a priority, learning from other countries or other neighbouring countries, or other experts, where we should really focus" Participant 7

"[At] the region level, national level, and the global level we [should] have platforms where we can learn from each other, where we can report. I think it will be helpful if we are able to do that." Participant 10

"There should be a system and institutionalization, in which one hospital which is ahead may take along the others which need to be pushed up" Participant 14

What are the current weaknesses of the interventions and/or their implementation?

1. Education (SWOT)
1.1 Disconnect between health delivery and education
"The other thing is the lack of coordination and collaboration between the healthcare delivery system and the healthcare educational system. In our educational setups, [students] are trained to be a doctor and to treat patients. When then they come into their practical life, then we start talking about quality the patient safety." Participant 8

"They have minimal information during their education on the medication safety or the patient safety aspects. But once they are in the profession, they are exposed to different scenarios. They see different kinds of incidents, so they have to know best practice to curtail such kind of incidents." Participant 15

1.2 Lack of educational framework
"Currently we are facing two major challenges. Number one is the unavailability of a structured educational framework for patient safety and quality" Participant 16

1.3 Lack of patient safety in medical curriculums
"In some private sector areas or private sector medical colleges, they [have started] inculcating a patient safety and health care quality curriculum into their medical education. But these are few." Participant 8
'The healthcare professionals who are currently working have not been taught of healthcare quality and safety as part of their curriculum" Participant 20

1.4 Lack of patient safety training
"Specific, or in-house, or in-service training linked with their licensure renewal, these kind of activities that are being performed in other countries is not very much implemented in Pakistan." Participant 15

2. Health facility/clinical initiatives (SWOT)
2.1Implementation gap
"I think our biggest challenge now is the implementation gap, and how to bridge the implementation gap" Participant 1
"At the federal level, […] we want us to have uniform standards and things to be implemented, but then there is somebody else in the provinces who is not ready to listen to it" Participant 21

2.2 Language and communication barriers

"One of the things that always comes up in our research in Qatar is the language barrier. A lot of our nurses and our hospital staff are nationals, or Arabic speaking, so we have a lot of problems with communication-related errors and stuff," Participant 2

2.3 Low clinical buy-in
"We still need to convince clinicians about safety" Participant 1

2.4 Low patient safety awareness
"Most of our healthcare facilities are not aware about the importance of patient safety issues" Participant 7

2.5 Poor employee retention
"Once we train and bring them to a certain level, then suddenly they leave. The attrition for healthcare workers is so high." Participant 10

"The first big challenge we face in the organization is turnover. Whenever employee comes, we train them and we debut them to the sites and we monitor them. Then at the end of the year, we evaluate them on their performance." Participant 12

2.6 Poor stakeholder communication / collaboration
"The big communication gap between the organisations, between the department, has both interdepartmental and intra-organisational aspects." Participant 16

"One of the challenges which I can see […] is [the gap] between the different stakeholders, which are your healthcare providers, because the patient is not only exposed to their primary consultant, but then there are other health care providers in place. There are different kinds of nurses, the shifts change, there are different kinds of doctors, especially at teaching hospitals, which are also changing on a day-to-day basis" Participant 17

3. Leadership (SWOT)
"If the leadership is in front of patient safety, everybody would be in front of patient safety. The quality department and the quality directorate they work hard, but sometimes it's blocked by the leadership. That's another challenge." Participant 3

3.1 Lack of hospital leadership engagement
"The hospital leaders are, I believe, still not that sensitised." Participant 18

4. Legislation and regulatory

4.1 Lack of legal framework
"There is no law, Pakistani cases where patient safety issues occur or where they are proven, regardless of what healthcare set up you belong to, which province you belong to, they go to the criminal court. We don't have health care lawyers, we don't have health care judiciary systems in place. Except for informed consent, which is covered in our legal code, there is no other law." Participant 17

5. Policy (WOT)
5.1 Lack of national policy / standards
"Pakistan does not have a national level policy or standard. Our millennium developmental goals or our health policy does not really cover this particular patient safety and quality aspect." Participant 17

"We do not have any policies as such that are pertaining to quality and safety in healthcare. So, that's a very big gap, both at the national level and at the regional level." Participant 20

5.2 Lack of patient safety framework
“I think lack of patient care framework or medication management framework is something that is adding to [patient safety challenges].” Participant 15

5.3 Lack of policy-maker awareness
“Awareness of the decision makers or the policy makers is another challenge. They are not very well aware of issues of quality and patient safety [which need] to be part of the policies and healthcare service deliveries” Participant 19

6. Patients moving between providers
“Patients always jump organization for affordability reasons, so patient loyalty is also the issue. If [an] organization makes the framework and structure for the patient and employee, if the end user is not there to receive all the benefits, it's all becomes useless.” Participant 12

7. Political instability
“Why [patient safety] is not being taking seriously is the political instability. If you talk about the West, you can see that the policies are consistent and because, if we are talking about the national level, I cannot play a role unless I'm part of the system. Unfortunately [in my country], due to political rivalry, if X party is doing a good job, just to let them down, the next party will discontinue even the good projects.” Participant 18

8. Research
8.1 *Lack of available data*
“We have very little data related to hospitals […] we are not recording the proper data; we are not doing any research.” Participant 7

“In Pakistan, we don't have any data related to infection prevention, surgical site infections, or anything.” Participant 8

9. Resources
9.1 Financial limitations
“We have very limited resources, either these are the human resource or financial resources. We are working in different hospitals, so we face a lot of problems with resource availability.” Participant 8

9.2 Lack of human resource/expertise
“We have very limited resources, either these are human resources or financial resources.” Participant 8

“I really feel that the most unsafe practices are occurring in public healthcare systems, especially secondary and tertiary, where the burden of population of the patients is very high but the number of doctors, nurses, and facilities is very poor.” Participant 14

“I think resources for public sector hospitals, and even in the private sector hospitals, is another big challenge because to improve quality you have to put in a lot of resources.” Participant 19

9.3 Lack of infrastructure
“Most of our healthcare facilities […] their infrastructure, is not appropriate” Participant 7

10. System challenges (WT)
10.1 Conflicting priorities and initiatives
“There are competing priorities whether to be at policy level we are dealing with other pressing priorities. They don’t see patient safety as a key priority that needs to be integrated in[to] all these programs.” Participant 11

10.2 COVID-19
“COVID-19 caused a few challenges, […] especially for staff, physicians, nurses, medical, clinical staff. We were really in trouble.” Participant 7

10.3 Lack of basic health services
“With time the primary and the secondary structures fell apart, their services lagged behind, and the major load then was put on the tertiary care hospitals which also led to a decrease in their quality and efficiencies.” Participant 19

“The lack of basic healthcare services, especially in remote and less developed regions of the country.” Participant 21

10.4 Lack of HCW awareness
“Then there’s a lack of knowledge and awareness of patient safety among healthcare workers as well as the general public” Participant 21

10.5 Lack of monitoring systems
“[…] then the lack of reporting and monitoring systems. Anything and everything done is ad hoc, not properly seen over time and the impact is not realized which undersells the initiative, or whatever the intervention is, in the long run.” Participant 20

10.6 Measurement systems not comprehensive
“The measurement and the system itself in terms of accountabilities are key challenges [for] the successful implementation of comprehensive patient safety programs” Participant 11

10.7 Unequal process across the system
“It's extremely encouraging the way some of the institutions are progressing, but I would still say that these are small islands” Participant 14

What are the major threats to improving patient safety?

1. Community acceptance
“At the individual level and the community level a lot of work needs to be done in terms of community participation, in terms of community awareness and engagement for patient safety” Participant 11

2. Health facility/clinical initiatives (SWOT)
2.1 Lack of reporting culture
“For all the other patient safety areas, we need a good incident reporting system.” Participant 7

3. Leadership (SWOT)
3.1 Changing leadership
“If the leadership is still committed and there are no changes in leadership they will continue, but most of the time in the region and country programs depend mainly on these persons.” Participant 11

3.2 Lack of leadership awareness / commitment
“There's a lot of work that we need to do, and a big room for improvement to get the healthcare leaders also to be interested in safety” Participant 1

"We still need to convince clinicians about safety, the fact that you need, you still need to convince healthcare leaders about safety, the fact that you still need to convince ministers of health about safety" Participant 1

4. Systems challenges (WT)

4.1 Integration across the system/horizontal integration

"How you can integrate it horizontally with the healthcare system? You cannot view safety as a vertical exercise, it has to horizontally integrate into all facets of the healthcare systems." Participant 1

4.2 Public/private sector quality gap

"This poor quality led to the […] growth of the private sector in Pakistan, and that's the reason that now 70% of the population is going to the private sector, compared to the public sector, because quality of care is hugely different in these two systems. So, everybody is now pushed to go towards private sector to achieve the quality that they expect." Participant 19

5. Resources (WT)

5.1 Lack of funding

"[Resources are] always a problem in public sector hospitals where resources are meagre, and the requirements are beyond their control" Participant 19

5.2 Human resource shortages

"I would think, given COVID-19 and burnout, and the current shortage in staff and healthcare professionals, they are already overworked, they're already tired, they're already working longer shifts." Participant 2

"If you try to pull the physician from their clinics and their hospitals to come and help you, sometimes they'll be away […] because of recent shortage of the staff everywhere, globally." Participant 3

6. Political instability (WT)

"Why [patient safety] is not being taking seriously is the political instability. If you talk about the West, you can see that the policies are consistent and because, if we are talking about the national level, I cannot play a role unless I'm part of the system. Unfortunately [in my country], due to political rivalry, if X party is doing a good job, just to let them down, the next party will discontinue even the good projects." Participant 18