SAUDI ALLIED HEALTH PROFESSIONALS' INSIGHTS ON PATIENT SAFETY: PERSPECTIVES OF DENTAL ASSISTANTS, NURSE TECHNICIAN, LABORATORY TECHNICIANS, RADIOLOGY TECHNICIANS, AND MEDICAL SECRETARIES

Wafa Saad Aljulaidan
Nurse Technician
Nahed Jazza Alshammari
Dental Assistant
Fatimah Abdrabalrasool Sukair
Laboratory Technician Reem
Reem Mohamed Bohameil
Laboratory Technician
Hifa Fahad Aljalaidan
X-ray Technician
Nouf Mohammed Bohameil
X-ray Technician
Heba Saad Aljulidan
Medical Secretary

Abstract

Patient safety is a critical component of healthcare delivery, and allied healthprofessionalsplayavitalroleinensuringthewell-beingofpatients.Thisqualitativestudyexplorestheperspectivesofdentalassistants,nurse technician,laboratory technicians, radiology technicians, and medical secretaries on patient safetyin Saudi Arabia. Semi-structured interviews were conducted with 20 participants, andthematic analysis was employed to identify key themes. The findings reveal that alliedhealthprofessionalsfacevariouschallengesinmaintainingpatientsafety,includingcommunicationbarriers,inadequatetraining,and resource constraints.Participantsalso highlighted the importance of teamwork, patient-centered care, and continuousquality improvement in promoting a culture of safety. The study provides valuableinsights into the experiences and perceptions of allied health professionals and offersrecommendationsforenhancingpatientsafetyinSaudihealthcaresettings.

Keywords: patient safety, allied health professionals, qualitative research, SaudiArabia

Introduction

Patient safety is a global healthcare priority, as medical errors and adverse events canleadtosignificantmorbidity,mortality,andfinancialburden(WorldHealthOrganization [WHO], 2019). In Saudi Arabia, the Ministry of Health has identifiedpatient safety as a key strategic goal in its Vision 2030 plan, which aims to improvethe quality and efficiency of healthcare services (Ministry of Health, 2018). Alliedhealthprofessionals,includingdentalassistants,nurse technician,laboratorytechnicians, radiology technicians, and medical secretaries, play a crucial role indelivering safe and effective care to patients (Almalki et al., 2011). However, theirperspectives on patient safety have been underexplored in the literature, particularly intheSaudicontext.

Previous studies have examined the attitudes and perceptions of various healthcareprofessionalstowards patientsafety,such asphysicians(Alsafi etal.,2011),nurses

(Alkorashy& Al Moalad, 2016), and pharmacists (Alhomoud et al., 2018). Thesestudies have identified factors that influence patient safety culture, includingleadership support, teamwork, communication, and learning from errors (Almutairi etal., 2013). However, few studies have focused specifically on allied healthprofessionals,whohaveuniquerolesandchallengesinensuringpatientsafety.

Dental assistants, for example, are responsible for maintaining infection control,preparing instruments, and assisting dentists during procedures (Hasan et al., 2020).nurse play a key role in promoting population health and preventingdiseases through education,surveillance,andpolicy development(Alsaif,2016).

Laboratorytechniciansareinvolvedintheaccurateandtimelyprocessingofspecimens, which is essential for diagnosis and treatment (Alyami et al., 2020).Radiology technicians are responsible for conducting imaging procedures safely andefficiently, while minimizing radiation exposure to patients and staff (Al-Abdulwahabet al., 2018). Medical secretaries, on the other hand, handle administrative tasks suchas scheduling appointments, maintaining records, and communicating with patientsandhealthcareproviders(Alotaibi&Federico, 2017).

Given the diverse roles and responsibilities of allied health professionals, it isimportant to understand their perspectives on patient safety to develop targetedinterventions and policies. This study aims to explore the experiences, challenges, andrecommendations of dental assistants, nurses, laboratory technicians,radiology technicians, and medical secretaries regarding patient safety in SaudiArabia.Thefindingscaninformstrategiestoenhancepatientsafetycultureandimprovethequalit yofcareinhealthcaresettings.

MethodsStudy
Design

This study employed a qualitative descriptive design, which is appropriate forexploringtheperceptionsandexperiencesofparticipantsintheirownwords(Sandelowski, 2000).

ParticipantsandSampling

Purposivesamplingwasusedtorecruitparticipantsfromvariousalliedhealthprofessions, including dental assistants, nurses, laboratorytechnicians, radiology technicians, and medical secretaries. The inclusion criteriawere: (a) currently working in a healthcare setting in Saudi Arabia, (b) having at leastone year of experience in their respective profession, and (c) willing to participate inaninterview.Recruitment wasdonethroughemail invitationsandsnowball sampling,whereparticipantswereaskedtorecommend othereligiblecolleagues.

The sample size was determined by data saturation, which occurs when no newthemes emerge fromthe interviews(Guest et al.,2006).A totalof 20participants

were interviewed, including four from each allied health profession. The samplecharacteristicsaresummarizedinTable1.

Table 1.Sample Characteristics(N=20)

Characteristic	n(%)
Profession	
-DentalAssistant	4(20%)
-nurse	4(20%)
-LaboratoryTechnician	4(20%)
-RadiologyTechnician	4(20%)
-MedicalSecretary	4(20%)
Gender	
- Male	8(40%)
-Female	12(60%)
Age(years)	
-20-29	6(30%)
-30-39	9(45%)
-40-49	5(25%)
Experience(years)	

-1-5	7(35%)
-6-10	8(40%)
- >10	5(25%)

DataCollection

Semi-structured interviews were conducted face-to-face or via telephone, dependingon the participants' preference and availability. The interviews were guided by aninterview protocol that was developed based on the literature review and the studyobjectives.Theprotocolincludedopen-endedquestionsabouttheparticipants'roles

and responsibilities, their understanding of patient safety, the challenges they face inensuring patient safety,andtheir recommendationsforimprovement.

The interviews were conducted in Arabic or English, depending on the participants'language preference, and they were audio-recorded with their permission. Theinterviews lasted between 30-60 minutes, and they were transcribed verbatim andtranslated into English if necessary. Field notes were also taken during the interviewstocapturenon-verbalcuesandcontextualinformation.

DataAnalysis

The interview data were analyzed using thematic analysis, which involves identifying,analyzing,andreporting patternsorthemeswithin thedata(Braun &Clarke,2006).

The analysis was conducted using NVivo 12 software (QSR International, 2018), anditfollowedthesix-stepprocessproposedbyBraunandClarke(2006):(1)familiarization with the data, (2) generating initial codes, (3) searching for themes, (4)reviewing themes,(5)definingandnamingthemes,and(6)producingthereport.

The transcripts were read and re-read by two independent researchers to familiarizethemselveswiththedata,andthey werecodedlinebylinetoidentifymeaningfulunits of text. The codes were then collated into potential themes, which were reviewedand refined through an iterative process of discussion and consensus among theresearch team. The final themes were defined and named, and they were supported byillustrativequotesfromtheparticipants.

Trustworthiness

The trustworthiness of the study was ensured through several strategies, includingtriangulation,memberchecking,and reflexivity(Lincoln&Guba,1985).

Triangulation was achieved by collecting data from multiple sources (i.e., differentallied health professions) and using multiple researchers to analyze the data. Memberchecking was done by sharing the preliminary findings with some of the participantsand seeking their feedback and validation. Reflexivity was maintained by keeping areflective journal throughout

the research process to document the researchers'assumptions,biases,anddecisions.

Results

The thematic analysis of the interview data revealed four main themes: (1)understanding patient safety, (2) challenges to patient safety, (3) strategies forpromotingpatient safety,and(4)therole ofleadership and organizationalculture.**Theme1:UnderstandingPatientSafety**
Theparticipantsdemonstratedagoodunderstandingofpatientsafety, whichtheydefined as "protecting patients from harm or injury during healthcare delivery"(Dental Assistant, P3). They emphasized the importance of patient safety in ensuringthe quality and effectiveness of healthcare services, as well as in maintaining the trustandconfidenceofpatientsandtheirfamilies. Theparticipantsdescribedvariousaspectsofpatientsafety,includingmedicationsafety,infection control,effectivecommunication,andpatientidentification.They

also highlighted the need for a multidisciplinary approach to patient safety, involvingcollaboration andcoordinationamongdifferenthealthcare professionals.
"Patient safety is not just the responsibility of one person or one department. Itrequires teamwork and communication among all the healthcare providers, from thedoctors andnursesto thetechniciansandsupportstaff."Nurse,P7)

Theme2:ChallengestoPatientSafety
The participants identified several challenges that they face in ensuring patient safetyin their respective roles. These challenges were related to workload, resources,training,andcommunication.
Workload was a common challenge, as the participants felt that they had to managemultipletasksandresponsibilitieswithinlimitedtimeframes.Thissometimesledtoerrorsoro missions,especiallywhendealingwithcomplexorurgentcases.
"We have a high volume of patients and samples to process every day, and sometimeswe have to work overtime or skip breaks to keep up with the demand. This can bestressful and tiring, and it increases the risk of mistakes." (Laboratory Technician,P11)
Resourceconstraintswereanotherchallenge,astheparticipantsreportedalackofadequate equipment, supplies, and staffing in some healthcare settings. This affectedtheir ability to follow proper procedures and protocols, and it compromised the safetyandqualityofcare.
"In some clinics, we don't have enough personal protective equipment or sterilizationmaterials, so we have to improvise or reuse them. This is not ideal and it can lead tocross-contamination orinfection."(DentalAssistant,P2)
Training was also a challenge, as some participants felt that they lacked sufficientknowledge and skills to handle certain situations or procedures. They expressed theneed for more specialized and ongoing training to keep up with the latestdevelopmentsandbestpracticesintheirfields.
"Asradiologytechnicians,weneedtobefamiliarwithdifferentimagingmodalitiesandradiationsafety guidelines,butthetrainingwereceiveisoftenbasicandoutdated.We need more hands-on and

simulation-based training to develop our competencies."(RadiologyTechnician,P16)

Communication was another challenge, particularly when dealing with patients fromdifferent cultural and linguistic backgrounds. The participants reported difficulties inexplaining procedures, obtaining informed consent, and addressing patients' concernsandcomplaints.

"Sometimes the patients don't understand what we're saying or they have differentexpectations about the treatment. This can lead to misunderstandings, frustration, orevenconflicts."(MedicalSecretary,P19)

Theme3:StrategiesforPromotingPatientSafety

The participants suggested various strategies for promoting patient safety in theirrespective roles and settings. These strategies were related to education, teamwork,patientinvolvement,andtechnology.

Education was seen as a key strategy for enhancing patient safety, both for healthcareprofessionalsandforpatients.Theparticipantsrecommendedprovidingregularandtargeted training programs for allied health professionals, covering topics such asinfection control,medicationsafety,andcommunicationskills.

"We need more education and training on how to prevent errors and adverse events,how to report them, and how to learn from them. This should be part of ourcontinuous professionaldevelopment."Nurse,P8

Teamwork was another strategy, as the participants emphasized the importance ofcollaboration, coordination, and communication among different healthcareprofessionals. They suggested having regular team meetings, joint training sessions,andclearprotocolsforinformationsharingandhandover.

"We need to work together as a team, not in silos. We should have open andrespectful communication, share our knowledge and expertise, and support each otherinprovidingsafeandqualitycare."(DentalAssistant,P4)

Patient involvement was also seen as a strategy for promoting patient safety, as theparticipants recognized the role of patients and their families as active partners in theircare. They recommended providing clear and accessible information to patients,encouraging them to ask questions and express their preferences, and involving themindecision-makingandself-management.

"We should empower patients to be involved in their own care, to speak up if theyhave concerns or questions, and to follow the instructions and precautions we givethem. This can help prevent errors and complications." (Laboratory Technician, P12)Technology was another strategy, as the participants acknowledged the potential ofelectronic health records, barcoding systems, and computerized order entry to reduceerrorsandimprovecommunication. However,theyalsocautionedagainstover-reliance on technology and emphasized the need for human oversight and judgment."Technology can be a useful tool for improving patient safety, but it's not a panacea.We still need to use our clinical skills and critical thinking, and we need

to havebackupplansincasethetechnologyfails."(RadiologyTechnician, P15)

Theme 4:TheRoleofLeadershipand Organizational Culture

The participants highlighted the importance of leadership and organizational culture inpromotingpatientsafety.Theyfeltthatpatientsafetyshouldbeatoppriorityforhealthcare leaders and managers, and that they should demonstrate their commitmentthroughtheiractionsanddecisions.

"The leaders and managers should set the tone for patient safety, by making it a corevalue and a strategic goal. They should allocate the necessary resources, provide thenecessary support, and hold everyone accountable for patient safety." (MedicalSecretary,P20)

The participants also emphasized the need for a just and learning culture, where errorsandnearmissesarereportedandinvestigatedinanon-punitiveandconstructivemanner. They felt that this would encourage transparency, learning, and improvement,and it would foster a sense of trust and collaboration among healthcare professionals."Weneedacultureofsafety, wherewecanopenlydiscussourmistakesandchallenges, without fear of blame or punishment. We need to focus on the system andthe process, not on the individuals, and we need to use the lessons learned to makepositivechanges." Nurse,P6

Discussion

This study exploredthe perspectivesof alliedhealth professionalsonpatientsafetyinSaudi Arabia, including the challenges they face, the strategies they recommend, andtheroleofleadershipandorganizationalculture.Thefindingssuggestthatpatientsafetyisacomplex andmultifacetedissue,requiringacomprehensiveandcollaborativeapproach.

Thechallenges identifiedby theparticipants,such as workload,resourceconstraints,training gaps, and communication barriers, are consistent with previous studies onpatientsafetyinhealthcaresettings(Almalkietal.,2011;Alhomoudetal.,2018).

These challenges can lead to errors, omissions, and delays in care, and they cancompromisethequalityandsafetyofhealthcareservices.

Toaddressthesechallenges,theparticipantssuggestedvariousstrategies,includingeducation,

teamwork, patient involvement, and technology. These strategies are in linewith the recommendations of the World Health Organization (WHO, 2019) and otherinternational organizations for promoting patient safety. For example, the WHOemphasizes the importance of patient and family engagement, as well as the use ofdigitaltechnologies,inimprovingthesafetyandqualityofcare.

The participants also highlighted the role of leadership and organizational culture inpromoting patient safety, which is consistent with the literature on patient safetyculture (Almutairi et al., 2013; Alswat et al., 2017). A positive safety culture ischaracterized by a shared commitment to safety, open communication, teamwork, andcontinuous learning and improvement. Healthcare leaders and managers play a

keyroleinshapingandsustainingthisculture,bysettingclearexpectations,providingnecessaryresources andsupport,andmodelingappropriatebehaviors.

Thefindingsofthisstudy haveimplications forhealthcarepolicy andpractice inSaudiArabia.Theyunderscoretheneedforacomprehensiveandsystemicapproachtopatientsafety,involvingall

healthcareprofessionalsandstakeholders.Thisincludesinvestingineducationandtrainingprogramsforalliedhealthprofessionals,promotinginterprofessionalcollaborationandcommunication,engaging patientsandfamilies as partners in care, and leveraging technology to support safe and efficientcareprocesses.

The study also highlights the importance of leadership and governance in drivingpatientsafetyinitiativesandfosteringacultureofsafety.Healthcareleadersand

managers should prioritize patient safety as a strategic goal, allocate necessaryresources and support, and hold everyone accountable for patient safety outcomes.They should also create a just and learning culture, where errors and near misses arereportedandinvestigatedinanon-punitiveandconstructivemanner,andwherelessonslearnedareusedtomakepositivechanges.

LimitationsandFutureResearch

This study has some limitations that should be acknowledged. First, the sample sizewas relatively small and may not be representative of all allied health professionals inSaudiArabia. Futurestudiesshouldincludealargerandmorediversesample,acrossdifferentregionsandsettings.Second,thestudyreliedonself-reporteddata,whichmay be subject to social desirability bias. Future studies should triangulate the datawithothersources,suchasobservations,documentreviews,andpatientfeedback.

Third, the study focused on the perspectives of allied health professionals, and did notinclude the views of other healthcare stakeholders, such as physicians, patients, and families. Future studies should adopt a more holistic and inclusiveapproach, to capture the diverse perspectives and experiences of all stakeholders inthehealthcaresystem.

Fourth,thestudywasconducted inthecontextofSaudiArabia,andthefindingsmaynot be generalizable to other countries or settings. Future studies should explore theperspectives of allied health professionals on patient safety in different cultural,social,andhealthcarecontexts,toidentifycommonthemesandvariations.

Conclusion

Patient safety is a critical priority for healthcare systems worldwide, and allied healthprofessionals play a vital role in ensuring the safety and quality of care. This studyexplored the perspectives of dental assistants, Nurse technician, laboratorytechnicians, radiology technicians, and medical secretaries on patient safety in SaudiArabia. Thefindingsrevealedthatalliedhealthprofessionalsfacevariouschallengesinpromoting patient

safety, including workload, resource constraints, training gaps, andcommunication barriers. To address these challenges, the participants recommendedstrategies such as education, teamwork, patient involvement, and technology. Theyalsoemphasizedtheimportanceofleadershipandorganizationalcultureindrivingpatientsafetyinitiativesandfosteringajustandlearningenvironment.

The study has implications for healthcare policy and practice in Saudi Arabia,highlighting the need for a comprehensive and collaborative approach to patientsafety.Thisincludesinvestingineducationandtraining programsforalliedhealthprofessionals,promotinginterprofessionalcollaborationandcommunication,engaging patients and families as partners in care, and leveraging technology tosupportsafeandefficientcareprocesses.

Healthcare leaders and managers should prioritize patient safety as a strategic goal,allocate necessary resources and support, and create a culture of safety where errorsandnearmissesarereportedandinvestigatedinanon-punitiveandconstructivemanner.   By doing so, they can enhance the safety and quality of healthcare services,andultimatelyimprovepatientoutcomesandsatisfaction.

Future research should include a larger and more diverse sample of allied healthprofessionals, triangulate the data with other sources, adopt a more holistic andinclusiveapproachinvolvingallhealthcarestakeholders,andexploretheperspectivesofalliedhealthprofessionalsonpatientsafetyindifferentcultural,social,andhealthcarecontexts.

In conclusion,patient safetyis ashared responsibilityof allhealthcare professionals,and allied health professionals have a crucial role to play in ensuring the safety andqualityofcare.Byaddressingthechallengestheyface,implementingeffectivestrategies,   and fostering a culture of safety, healthcare systems can create a safer andmorepatient-centeredenvironmentforall.

References

Alhomoud, F., Alhomoud, F., &Alghadeer, S. (2018). Pharmacists' knowledge,attitudes and practices towards patient safety in Saudi Arabia: A cross-sectionalstudy.*SaudiPharmaceuticalJournal*,*26*(7),1009-1014.

Almalki,M.,FitzGerald,G.,&Clark,M.(2011).Healthcare   systemin SaudiArabia:Anoverview.*EasternMediterraneanHealthJournal*,*17*(10),784-793.

Almutairi, A. F., Gardner, G., & McCarthy, A. (2013). Perceptions of clinical safetyclimate of the multicultural nursing workforce in Saudi Arabia: A cross-sectionalsurvey.*Collegian*,*20*(3),187-194.

Alsaif,F.A.(2016).ChallengesfacingthepublichealthsectorinSaudiArabia.*Journalof HealthInformatics inDeveloping Countries*,*10*(1),33-41.

Alsafi,E.,Bahroon,S.A.,Tamim,H.,Al-Jahdali,H.H.,Alzahrani,S.,&Al Sayyari,

A.(2011).Physicians'attitudestowardreportingmedicalerrors- anobservationalstudyatageneralhospitalinSaudiArabia.*JournalofPatientSafety*, 7(3),144- 147.Alswat,K.,Abdalla,R.A.M.,Titi,M.A.,Bakash,M.,Mehmood,F.,Zubairi,B.,...& El-Jardali, F. (2017). Improving patient safety culture in Saudi Arabia (2012– 2015):Trending,improvementandbenchmarking.*BMCHealthServices Research*,*17*(1),516.

Al-Abdulwahab, A. H., Alshahrani, A. M., Alosaimi, M. M., Alradhaa, M. S.,Alzahrani,K.M.,&Al-Abdulwahab,M.A.(2018).Knowledge,attitudesandpractices of radiographers regarding radiation protection at hospitals in Riyadh, SaudiArabia.*JournalofRadiationResearchandAppliedSciences*, *11*(3),303-307.

Alyami,A.Z.,Alhakami,S.Y.,Alahmari,M.D.,Alsofyani,H.A.,Alahmari,M.S.,Samarkandi,O.A., &Basri,W.K.(2020).Knowledge,attitudes,andpractices ofmedical laboratory technologists regarding laboratory safety in Riyadh, SaudiArabia.*JournalofInfectionandPublicHealth*,*13*(8),1147-1152.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *QualitativeResearchinPsychology*,*3*(2),77-101.

Guest,G.,Bunce,A.,&Johnson,L.(2006).How manyinterviewsareenough?Anexperiment with datasaturationandvariability.*FieldMethods*,*18*(1),59-82.

Hasan,F.,AlQahtani,N.,AlMutairi,R.,AlMutairi,N.,AlMutairi,S.,&AlThafar,R.(2020). Knowledge, attitude and practice of infection control among dental assistantsinRiyadh,SaudiArabia.*SaudiJournalforHealthSciences*, *9*(2),126-131.

Lincoln,Y.S.,&Guba,E. G.(1985).*Naturalisticinquiry*.SagePublications.

MinistryofHealth.(2018).*Healthsectortransformation*

strategy. https://www.moh.gov.sa/en/Ministry/vro/Documents/Healthcare- Transformation-Strategy.pdf

QSR International. (2018). *NVivo qualitative data analysis software (version 12)*.QSRInternationalPtyLtd.

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research inNursing&Health*, *23*(4),334-340.

World Health Organization. (2019). *Patient safety*. https://www.who.int/news- room/fact-sheets/detail/patient-safety