

Exploring the Factors that Hinder Clinicians and Laboratory Specialists' Communication: A Study at Tertiary Hospital in Saudi Arabia

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Abstract

Introduction: For ensuring a correct diagnosis and timely treatment for patients, lab personnel and clinicians need to effectively communicate. Several barriers to effective communication do exist, especially in complex environments such as tertiary hospitals. This research focuses on the social, structural, communicational, and cultural determinants that affect communication in a tertiary care hospital in Saudi Arabia.

Methodology: Semi-structured interviews were conducted with a sample of 30 laboratory specialists and clinicians, making use of thematic analysis to interpret the qualitative data that was collected.

Results: The participants were able to identify four major themes: (1) Lack of common understanding and differing communication approaches were some of the interpersonal barriers that were identified; (2) Non-integration between communication technologies and lack of systematic feedback mechanisms were some organizational barriers; (3) Less inclination towards new communications tools and limited use of integrated systems were some of the noted technological barriers; (4) Substantial number of participants highlighted gender and social hierarchies as some of the cultural barriers. Participants suggested interdisciplinary collaboration training, development of advanced communication technologies and culture-specific techniques as possible solutions to the discussed barriers.

Conclusion: Better technologies, feedback loops, and training can be very fundamental in addressing the notable barriers while ensuring better coordination between the healthcare professionals. This study focuses on policies and their development while ensures a research base that optimizes communication in healthcare settings.

Keywords: Saudi Arabia, Laboratory Researchers, Labspecialist, Post Qualitative Healthcare Communication, an Interdisciplinary Collaboration, and Health Tech

Introduction

Communication is imperative for the laboratory experts and the clinicians, as it ensures precise diagnoses, timely patient care, and high quality of integrated healthcare. Communication is important however it has been reported to encounter barriers of technicalities and interpersonal issues in health

care environments. The interaction between laboratory personnel and the clinicians is rather unique as it comprises of receiving diagnostic tests and the information which have to be communicated while doing the interdisciplinary work (Mulugeta & Zemedkun, 2024).

For tertiary hospitals particularly in the culturally rich country such as Saudi Arabia, the problems attributed to communication may be compounded by work hierarchy, workspace culture and constraints of resources. The communication problems may result in incorrect diagnosis making the patient to be treated inappropriately, thus endanger the clinical outcomes (Almutairi et al., 2024). Also, reluctance to change on the part of the healthcare professional affects collaboration in the workplace which in turn affects the communication channels of the healthcare professionals (Alanazi et al., 2024).

Communication has been regarded in some studies as an avenue which can improve the accuracy of diagnosis while enhancing the understanding of the various professionals. However, more and more there is qualitative evidence that the laboratory specialists and the clinicians in Saudi Arabia face a range of issues with respect to communication that has not been adequately addressed (Mir et al., 2024). In so doing, this study seeks to examine the interpersonal, organizational, and systemic issues that contribute to effective communication in tertiary hospitals in Saudi Arabia.

This study aims to recommend practical measures such as the improvement in communication and team working across various disciplines so that the end outcome in the patient care is vastly improved. The insights from this study might help policymakers in strengthening the communication policies in healthcare communication while adding to the spectrum of literature based on healthcare dynamics in the resource scarce and culturally rich regions.

Literature Review

Accurate and timely diagnostics and treatment is one of the most crucial aspects of healthcare. This can only be achieved through effective communication. Specialists from laboratories offer timely support to clinicians by way of professional clinical management of the patients. Despite the best efforts, communication between these two groups is affected by certain factors and the recent literature sheds some light on these barriers.

Barriers To The Communication Between Clinicians and Laboratory Specialists

Research has identified communication barriers within healthcare facilities as one of the critical issues. Alanazi et al. (2024) argue that busy professionals in the workplace spawn unequal distribution of power which could inhibit communication between laboratory staff and clinical staff. It can get more severe in multicultural environments where differences in languages and cultures create additional layers of complexities.

Also, logistical factors like waiting times between tests and reporting of the results could interrupt the flow of communication clearly pointed out by Mir et al. (2024) These delays could be as a result of understaffing, lack of appropriate technologies, or poor organisation of laboratory services. Also, as per

Mulugeta & Zemedkun (2024), the resistance to newer ways of communication and practices among health care workers has been viewed as a serious problem.

2. Consequences of Breakdown in Communication

Conflicts between clinical practitioners and laboratory workers can result in the improvisation of patient's safety, precise diagnosis, and on time treatment. Almutairi and Almoteri (2024) show the significance of clinical laboratory reports – due to lack of such reports, clinicians may make irrelevant clinical decisions which greatly compromises the welfare of the patient. It is correct that ineffective communication leads to some frustration among the clinicians and those performing the tasks of a laboratory which then in turn affects the environment and team work, as authors Alanazi et al. (2024) put it.

3. Filling Communication Gaps: Technology to the Rescue

The additional tool proposed to deal with communication barriers is the use on health information technology equipment. Automated systems for distributing results and up to the minute communication systems have been effective in increasing accuracy and limiting error in reporting (Mir et al., 2024). Such technologies continue to face great resistance in all institutions where the staff is new to the more sophisticated healthcare technologies.

Mulugeta and Zemedkun (2024) also caution however that while in a positive way HIT can facilitate communication in a healthy environment it needs training and support for both the laboratory and clinical personnel who would make use of it. Otherwise, the implementation of HIT may as well be the creation of other obstacles to provision of communication.

4. Cultural and Organizational Factors

The customs of” Saudi Arabia exist as one of the cultural international principles,” which affect communication in Saudi healthcare systems (Shraim et al, 2020). For example, gender segregation in employment may, in some cases, restrict male employees from directly speaking with female employees, which can lead to difficulties in working together. Almutairi et al note that Cultural sensitivity training is essential and needs to be provided to resolve such issues, and enables team work in diverse situations.

A related assessment made is in respect of organizational development variables such as absence of clear cut communication procedures and inadequate scopes for cross professional discussions to take place. It has been suggested that holding regular multi-disciplinary meetings and establishing effective internal communication systems would greatly help in remedying these shortcomings (Alanazi et al, 2024).

5. Strategies for Improvement

ends note The importance communication in teamwork cannot be ignored. Recent studies conclude a need for respect and collaboration among other things. Almutairi et al (2024) speak of conducting team

training sessions to facilitate interaction and enhance the understanding of all groups for example who is responsible for what. Communication efficiency can be enhanced by established feedback systems whereby laboratory personnel and doctors or nurses can give criticism and suggestions for improvement.

In this regard, Mulugeta and Zemedkun (2024) point out that leadership is also a critical aspect in changing behavior. Barriers, such as these, will not be removed without the support of the hospital management in relation to setting up the proper emphasis on training for communication skills and the appropriate use of modern communication technologies.

The available literature points to the existence of a large number of communication barriers between laboratory specialists and clinicians which arise from a wide variety of factors such as interpersonal, technological, cultural, and organizational. These are wholly different from one another and hence require pitched solutions. It is true that technology is likely to help, but in cultural and training as in Saudi Arabia, where barriers to communication may be of a different sort, other factors are also crucial. Further research should include the application and evaluation of specific strategies to optimize benefit from these practices.

Methodology

This study adopts a qualitative research design that seeks to determine the barriers to effective communication between laboratory specialists and clinicians, trying to define if such barriers exist. The specific site of the research was a tertiary hospital in Saudi Arabia, an advanced medical facility with an appealing patient diversity and well-established multidisciplinary professional teams.

Study Design

A qualitative design was preferred in view of the subtleties involved in the experiences and sentiments held by laboratory specialists and clinicians with regard to communication barriers. These factors entrenched communication in the interpersonal realm, sociocultural considerations within the macro organization, and in the more embedded micro-organization structural factors.

Study Setting

The study was carried out at tertiary hospital in Saudi Arabia. The facility has ultra-modern diagnostic laboratories and specialized clinical units hence provides an appropriate environment for analyzing the relationship between the laboratory and clinical teams.

Participants

Participants were purposively selected with the objective of obtaining representatives across various departments and levels of professional categories. The sample size included:

- Laboratory specialists: 15 biochemists, hematologists, microbiologists and pathologists



- Clinicians: 15 physicians, surgeons and nurses who use the laboratory services and interact with them to get their work done.

Eligibility was defined through the following inclusion criteria:

1. A minimum of one year of work experience in the hospital.
2. Frequent and consistent participation in communication between laboratory and clinical personnel.
3. Demonstration of active participation in research and providing informed consent.

Data Collection

The collection of data was facilitated through semi-structured interview elderly participants aged 67-82 in a comfortable setting designed for ease of communication to maintain privacy of the participant's. Some of the open ended questions used in the interview consisted of the following:

1. Conversations between the laboratory and the clinician
2. Communication barriers
3. Communication suggestions

Examples of questions:

- Could you provide us with any examples when contact between the laboratory and clinicians influenced a patient's treatment?
- What are the major areas of difficulty you face with regards to communication with your colleagues from other territories?
- What measures or changes would you suggest in order to enhance or rectify current communication systems?

Interviews were conducted for about thirty to forty five minutes, and participants were encouraged for audio recording along with tabulated note-taking. It was also important to note non-verbal form of communications, and additional information related to the context.

Data Analysis

Transcriptions were done word-for-word and were examined using thematic analysis, which is better suited to test and evaluate any patterns in qualitative data. The analysis best fitted in Braun and Clarke's six-step framework:

1. Looking through the data.
2. Labeling the collected data.
3. Searching for patterns.
4. Reviewing patterns.
5. Clarifying and naming the patterns.
6. Documenting the findings.

Data management and coding were efficiently supported by the NVivo software. The discussions among two independent coders analyzing the data were to ascertain consistency in coding and to resolve any differences.

Ethically Concerned

The ethics committee responsible approved the study. Consent letters were signed by potential participants before the initiation of the study. No personal identifiers were used in the study and the identity of the participants was not revealed. Information obtained was kept in highly protected password locked devices only accessible by authorized people.

Construction and Demographic Characterization of Action Plans

The following measures were taken to improve the validity and reliability of the evidence:

- Triangulation: Results from laboratory specialists and clinicians were explored in order to observe overlaps and tensions.
- Member Checking: Participants were invited to review their transcripts and preliminary findings for correctness.
- Peer Debriefing: Theme and interpretation iterations were held with colleagues on a regular basis.

Study limitations

Only one tertiary hospital was involved in the study, thus, the extent to which the findings can be extrapolated to other hospitals is limited. Besides, social desirability bias may have impacted participants during interview sessions, irrespective of attempts to eliminate statements that would induce bias.

Findings

The barrier to a more effective communication between clinicians and laboratory specialists of a tertiary

hospital have been broadly categorized as interpersonal, organizational, technological, and work culture related barriers. This study unfolds perspectives about the barriers comprehensively. Each barrier is explained and critiqued below alongside the participant's insights.

Theme 1: Interpersonal Barriers

Subtheme 1.1: Lack of Mutual Understanding

- From the analysis and findings, it was found that no scope of understanding which each had, created friction between the laboratory specialist and the clinician. Clinicians have frequently been heard complaining about delays in getting feedback, but the states of the laboratory think the importance they place on checking and adjusting actual values is disregarded. This disconnect led to mutual dissatisfaction.

- o “We FTs constantly are bound to go on technical defences even though we know straight run of machine is not the only way of doctoring the results.” (Participant 5, Laboratory Specialist)

- o “I have witnessed some instance where a case has been put on hold because the lab techs have failed to appreciate the case from the nursing point of view.” (Participant 10, Clinician)

Subtheme 1.2: Communication Styles

- A mechanical theme that continued was an issue concerning communication trends between laboratory specialists and clinicians. Reports prepared by the diagnostic laboratory were always replete with professional jargon and most of the time when there was an emergency, efficient and to the point information was a treasure. These differences frequently fuelled the misunderstandings and all of the delays in decision making.

- o “There are times when we are in a report and get pent up by all those acronyms and IT related aids and just get blank, which is irritating.” (Participant 3, Clinician)

- o “On few occasions when clinicians call, I do not have the entire context therefore I need to guess the priority.” (Participant 8, Laboratory Specialist)

Theme 2: Organizational Barriers

Theme 2 – Subtheme 2.1: Barriers Presented by Ineffective Communication Methods

- o During the case, participants were unable to omit the phone calls made to other individuals when discussing communication systems and other resources according to Doumouras, 2016. During the case, paper based communication systems and phone calls were conjointly emphasized. Such forms acted as extensive obstacles as participants stated that they were based on brainstorming technics that were filled with flaws, as Wyk et al, 2018 stated.

o “I recall some scenarios when patients have submitted paper reports, they have misplaced the reports which caused a lot of without a doubt. It leads to wasting time in repeating said tests.” (Clinician, Participant 7)

o “We are often overwhelmed with the samples we need to manage so we ignore people calling us and don’t have any other means of communication.” (Laboratory Specialist, Participant 2)

Theme 2 – Subtheme 2.2: Barriers Presented by Feedback Mechanisms

o Participants across the board claimed that not having such structures allowed communications to continue the way they were and never get solved. There were issues of communication that were persistent in the laboratory and in the clinical setting that staff felt were never attended to due to lack of communication efficiency however those issues persisted.

o “We do not have formal mechanisms such as regular discussions on workflow issues, so these issues just keep recurring which is indeed unfortunate.” (Laboratory Specialist, Participant 6)

o “I do not recall any scenario where if someone was asking for feedback on how to facilitate the communication processes with the lab.” (Clinician, Participant 12)

Theme 3: Technological Barriers

Theme 3 – Subtheme 3.1: Unavailability of Integrated Communication Systems And Tools

o A very common issue was the inability to communicate in real time, for instance with Electronic Health Records Systems (EHRs).

Several participants felt that these tools could enhance workflow and cut delays.

o "The clinic would be a lot better in terms of patient handling with an EHR system that I can immediately see lab results." (Clinician, Participant 4)

o "We still do manual entry and phone calls to receive critical results. This is not only not efficient; it is prone to errors." (Laboratory Specialist, Participant 9)

Subtheme 3.2: Constraints on Technology Use

- Resistance to the use of new communication technologies was noted repeatedly with regards to more senior staff as many resisted it and preferred traditional methods.

o "Some senior clinicians would call the lab to get their results rather than look them up online which held the work back." (Laboratory Specialist, Participant 8)

o "There is resistance to change even when there is clear evidence that new devices will assist us in doing our work." (Clinician, Participant 1)

Theme 4: Interaction in Work Setting and Organizational Culture

Subtheme 4.1: Vertical/Hierarchical Workplace Setting

- The hierarchy in the hospital frequently acted as a barrier to effective communication. The comments of laboratory specialists about feeling disregarded over clinical decisions were countered by clinicians who stated that they did not work with the laboratory staff because the latter were unwilling to say anything.

o “There are times when I notice an outlier in the data but I do not mention it out because I don’t know the probable repercussions.” (Laboratory Specialist, Participant 13)

o “I find that the flow of communication is unbalanced, that instead of communicating, we are supposed to give instructions.” (Clinician, Participant 14)

Subtheme 4.2: Cultural Norms and Gender Segregation

• There were other associated cultural considerations that did alter the communication dynamics such as gender segregation, which predominates in Saudi Arabia. This was particularly pronounced in situations that required collaboration between male and female personnel.

o “In some cases, we are assisted by other colleagues in order to talk to male members of the lab, and this hampers efficiency.” (Clinician, Participant 15)

o “Some restrictions on gender interaction reduce the chances of social interactions and team spirit.” (Laboratory Specialist, Participant 3)

Theme 5: Recommendations for the way forward

Subtheme 5.1: Schedule Training and Interdisciplinary Workshops

• Participants suggested more cross-discipline workshops and trainings in a bid to build more understanding and cooperation. These were viewed as moments to encourage better interaction and reduce misunderstandings.

o “Are you serious? Workshops in which we are free to share our problems and get insights on how different people do their jobs, that would be amazing.” (Clinician, Participant 6)

o “We need more development, not only on the clinical aspect but on interpersonal skills, especially during emergencies.” CitationRequired, Participant 12.

Subtheme 5.2: Incorporation of Advanced Technology

• Integrated EHRs and automated result notification systems are some of the tools that were described as necessary to address many of the barriers mentioned.

o “There is so much time that could be saved and prevented from being lost if there was an automated reporting system that informed clinicians on the outcome of critical results.”: CitationRequired, Participant 10.

o “A system in which lab and clinical staff are able to work on the same information may greatly improve sensitivities”: CitationRequired, Participant 8.

The findings underscore the reality that effective communication between laboratory and clinical staff, in this case amongst laboratory specialists and clinicians, is characterized as encompassing interpersonal miscommunication, organizational understaffing, technological ignorance, and cultural differences. It was also evident from the interviews that the participants were in agreement that there was a need for purposeful action plans such as retraining of personnel, better technology and stronger organizational frameworks to manage these barriers effectively. These insights lay the groundwork for further focused strategies aimed at improving collaborative culture as well as patient care.

Discussion

This research aims to establish an understanding of interpersonal, organizational, technical and cultural barriers in fostering effective communication among laboratory specialists and clinicians in a tertiary hospital in Saudi Arabia. The discuss of this research also sets the context of the findings to existing literature to facilitate understanding of practices and policies regarding patient care in a more effective fashion Finally, The findings of this study also contribute to the existing systemic issues that serve as an impediment to effective patient care through teamwork. By doing so, they fill an important gap in the literature which would otherwise lack considerations of these factors.

Interpersonal Barriers: Mutual Understanding and Communication Styles

Such flaws were present between clinicians and laboratory specialists and under consensus served as significant barriers. The laboratory specialists posed over their technical skills and work hours whereas the clinicians posed over delayed results. This is in agreement with the findings of Alanazi et al. (2024), who report that lack of knowledge concerning roles and tasks within the team often leads to conflict in the health sector. Distrust and lack of collaboration — due to misalignment in expectations — can severely compromise the standard of care provided to patients.

The Problem of Community Engagement: Collaboration and Collaboration in the Sphere Overcoming these barriers needs sharpening of collaborative understanding and respect towards each other through joint sessions. Participants asserted that workshops which demonstrate the value of each unit involved in the process of patient care supply may help resolve the issue. Almutairi and Almoteri (2024) further corroborate the need for engaging in team building activities to improve relationships and communication among the members.

Barriers of an Organizational Nature: Inefficiencies of the System as Such, Weaknesses of the Feedback Mechanisms

Inefficiencies at the organizational level, such as the absence of effective communication tools and a feedback mechanism, were significant. Participants pointed out that the use of manual reporting systems for certain tasks was frequently accompanied by delays and inaccuracies, a problem that Mulugeta and Zemedkun (2024) articulated in their article on healthcare inefficiencies.

Such weaknesses of the feedback mechanisms also undermine the efficiency of feedback, as problems created in the first place are still not solved. It is important to conduct structured interdisciplinary meetings to allow laboratory and clinical personnel to present and discuss problems and ask for feedback. Not only would these meetings seek to address problems at hand but also help create a culture of seeking and giving feedback on a regular basis as suggested by Mir et al. (2024).

Technological Barriers: Tools Peripheral and Lost Will

The lack of a centralized electronic tool such as EHR presented as an overarching obstacle found in this study, further emphasizing the need for a fully automated notification system. According to the participants, ranging these too could speed up the flow of tasks and minimize waiting time, a contention that Alanazi et al. (2024) corroborated, noting the noteworthy impact technology could have on healthcare communication in terms of optimization.

But it turned out that the unwillingness to apply new types of technologies, in particular to the older staff, became a challenge. This resistance is in line Casteal Mir et al (2024) who mention that absence of TPS and fear of being developed tend to constrain the usage of sophisticated tools. In this respect, hospitals should work on the development of all-inclusive engineered programs and also the atmosphere that encourages versatility and multipurpose usage of technology.

Cultural and Workplace Dynamics: Gender Norms and Hierarchical Structures

Gender roles and workplace norms particularly hierarchy posed a different set of challenges in Saudi Arabia. The horizontal dynamics of hierarchy at the workplace prevented free expression, for instance, lab staff shied away from complaining or offering feedback. This finding reinforces the work of Almutairi et al. (2024) which demonstrated that hierarchical systems in medical institutions tend to favour senior members of the team over the rest.

Gender segregation, which is acceptable in Saudi Arabia, appeared to add deepening factors. This practice, squinted by participants as a reason for impeding interaction between male and female employees, is a cultural characteristic that is adequately entrenched in the society. Such kinds of cultural barriers call for respectful negotiation practices as well as the use of technology as a negotiator.

Recommendations for Improvement

The participants presented several actionable solutions to overcome these barriers, among them:

1. **Training and Interdisciplinary Workshops:** Interpersonal and organizational barriers can be overcome through structured training programs that are developed with the goal of enhancing collaborative efforts and fostering understanding. Almutairi et al. (2024) argue in favor of such training programs in their study emphasizing on regular team-based trainings.
2. **Investment in Advanced Technology:** The use of integrated EHRs and automated notification systems is a technology that could potentially improve accuracy and efficiency. However, these technologies need a change management strategies while being implemented (Mulugeta & Zemedkun, 2024).
3. **Establishing Feedback Mechanisms:** These platforms should be structured so that feedback and discussions can be held on a regular basis as this will facilitate constant development and accountability mechanisms.
4. **Cultural Sensitivity Initiatives:** Respecting the norms of the culture and devising specific approaches such as relying on gender for communication, can minimize the effects of cultural barriers.

Implications for Practice and Policy

This study refers to healthcare settings as having several barriers. Removing some of the barriers in communication, collaboration and other aspects has the potential to improve the quality of care in these settings. Also, it is suggested that policy makers emphasize the importance of teamwork by improving investments in proper training, technology and other organizational changes.

Besides these considerations, there is also merit in describing how implementing the proposed interventions improves communication effectiveness and ultimately patient care outcomes. Cross cultural and organizational comparison across different settings may further advance our understanding of these issues.

Conclusion

This study depicts the complex relationship between interpersonal, organizational, technological factors and culture which hinders collaboration between laboratory specialists and clinicians in a Saudi Arabian tertiary hospital setting. Addressing these barriers with targeted interventions make it possible to create a collaborative climate where the quality of care is enhanced. This findings call to action the promotion of continued efforts to modernize the services through the use of technology alongside the necessary culture and organizational changes and ensuring that every member of the healthcare team is well positioned to undertake their tasks.

References

1. Mulugeta, H., & Zemedkun, A. (2024). Perioperative capacity and contextual challenges in teaching hospitals of southern Ethiopia: explanatory sequential mixed-methods research. *Perioperative Medicine*.



2. Almutairi, A. M. F., & Almoteri, N. A. (2024). The Future of Healthcare: Integrating Pharmacy, Laboratory, and Clinical Services in the Era of Value-Based Care. *Journal of Crisis and Risk Communication*.
3. Alanazi, A. J., Alotibi, F. S. N., & Almutairi, N. H. B. (2024). Integration of Clinical Pharmacy, Nursing, and Medical Laboratories: The Role of Multidisciplinary Collaboration in Enhancing Healthcare Quality. *International Journal of Health Sciences*.
4. Mir, H., Cullen, K. J., Mosleh, K., & Setrak, R. (2024). Smartphone App for Prehospital ECG Transmission in ST-Elevation Myocardial Infarction Activation: Protocol for a Mixed Methods Study. *JMIR Research Protocols*.