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A CROSS-SECTIONAL STUDY ON COMMUNICATION KNOWLEDGE, PRACTICES, AND BARRIERS AMONG PRIMARY HEALTHCARE WORKERS IN AL-RAMADI, IRAQ

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SUMMARY

In resource-constrained, conflict-affected primary healthcare settings, communication hurdles persist despite the fact that efficient communication between healthcare personnel and patients is essential to attaining the best possible healthcare results. The purpose of this study was to evaluate the communication skills, behaviors, and perceived obstacles of primary healthcare workers in Al-Ramadi, Iraq. Between September and December of 2024, nine primary healthcare facilities in Al-Ramadi city participated in a descriptive cross-sectional study. Non-probability convenient sampling was used to enroll 92 healthcare professionals. A structured questionnaire addressing sociodemographic, communication styles, and perceived barriers was used to gather the data, which were then descriptively analyzed using chi-square tests of association. Most participants were under 40 years (77%) and married (65%). Good knowledge was found for eye contact (82%) and open-ended questioning (73%), while gaps existed in responding to emotions (27%), the biopsychosocial approach (34%), and SPIKES protocol (54%). Practice was strong for undivided attention (95%) but weaker for privacy (71%) and shared decision-making (70%). A significant knowledge–practice gap was found for empathy, where practice (73%) exceeded conceptual understanding (39%) ($\chi^2 = 21.25$, $p < 0.001$). The most common barriers were patients' diverse social backgrounds (82%) and time limitations (77%). Primary healthcare workers in Al-Ramadi demonstrated fair to moderate communication knowledge and practice, with specific, addressable gaps. To improve the quality of physician-patient communication, specific training programs for the development of empathy and good emotional communication are required, along with institutional initiatives targeted at resolving time constraints.

Key words: *communication skills, primary healthcare, health workers, knowledge and practice, communication barriers.*

INTRODUCTION

Communication can be defined in a variety of ways. Generally speaking, communication is the process of communicating and using symbolic interactions to make meaning of things. Another definition of communication is a process that includes writing, reporting, correspondence, and understanding the rules of speaking and writing [1].

Communication in healthcare is very important in order to provide optimal patient care and create a cooperative atmosphere among the healthcare staff. Ability to convey information effectively and compassionately can affect patient satisfaction, treatment compliance, and patient's health literacy. Also, effective communication enables healthcare practitioners to develop good relations and increase their level of trust toward patients, thereby providing a pleasant experience which affects patients' behaviors and attitudes. It can also improve patients' satisfaction, with their adherence to therapies and decrease malpractice claims [3]. Developing effective communication skills facilitates the development of a trustworthy relationship between the doctor and the patient and allows for a deeper comprehension of the patient's problems. As a result, the patient's illness is better diagnosed and managed. The foundation of clinical operations and the development of a successful therapeutic physician-patient interpersonal relationship is adequate communication between the doctor and the patient. The heart and art of medicine is the name given to it [4].

For medical personnel to have a good rapport with patients and enhance their health and quality of life, communication skills are crucial. Additionally, health workers' performance and self-efficacy can be enhanced by communication skill training. (6) Additionally, some research findings have highlighted the significance of the doctor-patient relationship and said that the primary cause of doctors' disregard for patients' feelings is a lack of communication skills. The ability of doctors to effectively communicate with their patients is negatively impacted [6].

The purpose of any contact with the patient is for the physician to know the patient's skills and support enhancing their well-being. Communication is the foundation for acquiring medical history and presenting a diagnosis and treatment plan. Good communication experience by physicians has been demonstrated to improve patient happiness, and adherence to therapies, and to lessen malpractice claims.[7] Three basic types of skills need to be covered in communication skills training: Content skills, what health care providers convey; process skills, how they do it; and perceptual skills, what they are thinking and feeling.

Essential components of communication skills: One significant way that healthcare professionals communicate with one another is through medical interviews [5]. Obtaining an accurate history is vital for diagnosis and medical management, and doing so is dependent upon effective communication; components include (nonverbal communication, verbal communication, active listening, introduction, eye contact with the patient, empathy, organization, concern, awareness of unspoken issues, wait time, and closure) [8] [10]. Communication hurdles in healthcare: Since communication is affected by many elements, there are several barriers that can hamper communication. It is proposed that the reason of the breakdown in communication in healthcare can be divided into one (or more) of the following five major causal barriers: Behavioral, cognitive, linguistic, environmental, and technology [13].

This study adds to the limited literature on communication abilities among Iraqi healthcare professionals, especially in primary healthcare settings in areas that have recently experienced conflict. The results offer an evidence base for the formulation of interventions and policy measures designed to enhance the physician-patient relationship in Al-Anbar Governorate.

Research Questions

This study was guided by the following research questions: What is the level of knowledge regarding communication skills among primary healthcare workers in Al-Ramadi city?

What communication practices are most and least consistently implemented during patient encounters?

What barriers to effective communication are most commonly perceived by primary healthcare workers in this setting?

The main goal of the present research was to examine knowledge, practice, and perceived impediments to communication skills of primary health care professionals in the city of Al-Ramadi in Iraq. The secondary purposes were to determine particular gaps in knowledge and practice of communication skills and to indicate the barriers to communication that were perceived most often.

The remainder of the document is organized as follows: The literature on the subject is summarized in Section 2, and the study design, setting, sampling, and data collection process are covered in Section 3. Section 4 discusses findings pertaining to knowledge, practice and barriers to communication, Section 5 discusses the interpretation of these findings in light of the literature and suggests practical implications while Section 6 highlights the conclusions and future research directions.

LITERATURE SURVEY

One important factor influencing the caliber of healthcare services provided is communication between medical staff and patients [11]. Training in communication skills is therefore crucial for healthcare professionals so that they can interact effectively and empathically with their clients in all circumstances [15]. Good communication skills have always been linked with increased client satisfaction, increased compliance, and low rates of malpractice cases. Primary healthcare professionals are the first line of defense in the community, and their ability to communicate health information will influence the adoption of healthy behaviors by the general public [19].

A number of research works have analyzed the communication skills awareness of healthcare practitioners and found out significant differences between them [9]. Communication skills are critical for good medical work and may significantly influence the patient satisfaction, compliance and treatment outcomes [14]. In a cross-sectional survey conducted among 691 healthcare professionals in seven European countries, a great number of professionals proved to be unaware about their communication skills and barriers which limit their effective communication at the workplace [16]. Similar findings are reported in the Arab world, where professionals were found to have acceptable levels of awareness about basic communication concepts but lacking in awareness about more advanced models like breaking bad news or shared decision making [4].

Knowledge versus practice is another common observation reported in the literature. A multicenter study conducted on 5,449 primary healthcare professionals in China revealed moderate overall competence, where health literacy scores were the highest, and communication practice behavior scores were the lowest, reflecting a knowledge-practice disparity [17]. Another cross-sectional study conducted in Bangladesh indicated the impact of communication practices among physicians during consultations on patient satisfaction.

Effective communication barriers have been widely researched in various environments. Time limitations, patient diversity, and socio-cultural differences have been some of the most recurrent barriers globally [12]. An investigation conducted in the context of primary healthcare revealed that attitudes, respect, and self-efficacy were important predictors of communication behaviors, whereas the perception of barriers was a predictor of ineffective communication [18][2]. In the Middle Eastern region, patient distrust, poor health literacy, and cultural differences have been some of the major barriers to effective communication, as has been observed in this research.

The reviewed studies suggest that health care professionals working in various environments exhibit moderate levels of communication knowledge with persistent weaknesses in empathic ability, emotional response, and protocol. The existence of knowledge-practice gap is an universal observation while sociocultural differences, time constraints, and patient-specific obstacles are the most commonly identified barriers. Such results observed in Iran, Saudi Arabia, Egypt, China, and Europe help understand the findings of the current study in a comparative perspective. It should be noted that the current study fills the research gap in terms of conflict-affected primary healthcare setting in Iraq which may create additional barriers to communication in addition to those existing internationally.

METHODOLOGY

Study Design

From September 1 to December 31, 2024, a descriptive cross-sectional study was conducted in Al-Ramadi city, Al-Anbar Governorate, Iraq, to ascertain the knowledge, practice, and perceived constraints related to communication skills of primary healthcare workers. The cross-sectional study

design was selected because it is the best method for determining the prevalence of knowledge, attitudes, and behaviors within the targeted population at a certain moment in time.

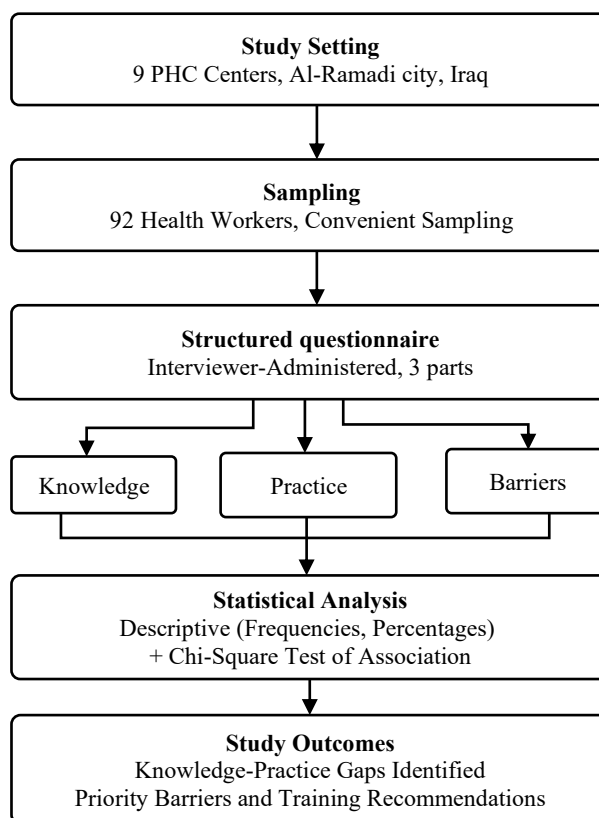


Figure 1. Conceptual framework of study design and analytical flow in health worker–patient communication assessment

Figure 1 demonstrates the entire research process flow, starting with the setting of the research which takes place at 9 PHC centers in Al-Ramadi, Iraq, and then sampling 92 health care providers via convenience sampling technique. Data was collected using a structured interviewer-administered questionnaire that covered knowledge, practices, and barriers. The statistical analysis involved descriptive techniques and Chi-square tests, resulting in important findings that identified knowledge-practice gaps and training needs.

Study Area

This research was carried out in the city of Al-Ramadi, which is the capital of the Al-Anbar Governorate, and is found in western Iraq. The city of Al-Ramadi is considered one of the largest cities in Iraq, and has been faced with numerous socio-political difficulties within the last twenty years that have affected the infrastructure of the healthcare system of this city. The study took place within nine primary healthcare centers within the city of Al-Ramadi, including the following centers: Al-Andalus health center, Al-Katana health center, Al-Malaab health center, Imam Wes health center, Albu-Faraj health center, Albu-Thiab health center, Al-Ramlia health center, Al-Anbar university health center, and Al-Warar health center.

Sampling

All healthcare workers working in the nine selected primary healthcare centers formed the target population for this study. Non-probability convenient sampling was used for selecting the subjects of this study owing to the operation constraints of the healthcare setting and the availability of participants. A total of 92 healthcare workers were recruited for this study. The inclusion criteria consisted of all healthcare workers who were actively working in the selected primary healthcare

centers in the study period and agreed to participate in the study. This study eliminated participants who did not want to participate or who were unavailable during the study period.

Data Collection

The data were collected using a purposefully developed structured questionnaire through face-to-face interviews with selected healthcare workers conducted by the researcher. Verbal informed consent was obtained from each respondent prior to data collection. There were three sections to the survey. The first section included socio-demographic variables that encompassed age, gender, education, marital status, experience, and private practice. The second section included the communication practice of respondents that included behavior during the interaction between the patients and the physician in terms of active listening, use of open-ended questions, empathy, maintaining patient confidentiality, decision-making, and treatment plan evaluation. The third section included the barriers to effective communication that encompassed time constraints, patient socio-cultural diversity, patient compliance, and patient trust. The survey was developed based on various communication skills frameworks and tools used in previous research.

Statistical Analysis

Microsoft Excel was used to examine the data. Descriptive statistics, such as frequencies and percentages, were used to describe the data. A Chi-square test was applied in two ways: a goodness-of-fit test for each item to determine whether response distributions differed significantly from an equal split, and a test of association for matched knowledge-practice pairs to identify domains with a significant knowledge-practice gap.

RESULTS

Sample Details

Table 1. Socio-demographic characteristics of the study sample

Type	Socio-demographic Characteristics	No. (%)
Age (years)	<40	71(77%)
	40-49	5(5,5%)
	>50	16(17,4%)
Gender	Male	47(51%)
	Female	45(49%)
Marital Status	Single	27(29%)
	Married	60(65%)
	Divorced	2(2%)
	Widowed	3(3,2%)
Years of Experience	<10	62(67%)
	10-19	14(15%)
	>20	16(17%)
Private sector practice	Yes	43(47%)
	No	49(53%)

The study involved 92 healthcare professionals from nine basic healthcare facilities in Al-Ramadi. Table 1 provides a summary of the sociodemographic traits. Males made up 51% of the participants, and most of them were in relatively young age groups (77% under 40). Most participants were married (65%), while the remainder were single, divorced, or widowed. Regarding occupation, only 9% were family medicine practitioners, while the remaining 90% comprised other categories of medical personnel. The sociodemographic profile of the research participants is provided in table 1. The majority of respondents (77%) were under 40, and the gender distribution was about equal (51% male, 49% female). The majority were married (65%) and had less than 10 years of experience (67%). Slightly more than half were not involved in private sector practice (53%). Overall, the sample mainly represents young, early-career professionals with balanced demographic representation.

Knowledge of Physician–Patient Communication Skills

The distribution of responses regarding knowledge of physician–patient communication skills is presented in table 2. Participants demonstrated good knowledge in several areas, including the importance of eye contact (82% "Yes"), the role of static cues in nonverbal communication (76% "Yes"), the importance of structuring the interview (65% "Yes"), and the use of open-to-closed-ended questions (73% "Yes"). However, significant knowledge gaps were identified in responding to patients' feelings and emotions (27% "Yes"), the SPIKES protocol for breaking bad news (54% "Yes"), the biopsychosocial approach (34% "Yes"), and the concept of empathy (60% "Yes").

Table 2. Participants' answers about their understanding of healthcare professionals' patient communication abilities

Knowledge questions	Yes / No / Don't know No. (%)	χ^2	P- value
Structuring the interview is a task that occurs throughout the interview rather than sequentially.	60/8/24 (65%,8%,26%)	46.26	<0.001
The open-to-closed-ended questions cone approach is a process skill for exploring a patient's problems.	68/13/11(73%,14%,12%)	68.24	<0.001
During the interview, the patient was listened to in a judgmental way.	64/11/17(69%,12%,18%)	54.93	<0.001
Among the most important of all the nonverbal skills is eye contact.	76/10/6(82%,11%,6,5%)	100.78	<0.001
The static cue (appearance) is a part of nonverbal communication.	70/9/13(76%,10%,14%)	75.93	<0.001
The dynamic cue is a part of verbal communication.	60/12/20(65%,13%,21%)	43.13	<0.001
Empathy is a feeling of pity or concern from the outside of the patient's position.	56/11/25(60%,12%,27%)	34.59	<0.001
One of the aspects of communication skills is the SPIKES protocol.	50/13/29(54%,14%,31%)	22.46	<0.001
False hope is acceptable in breaking bad news.	43/30/19(46%,32%,20%)	9.41	0.009
Briefing and summarization are essential components during any consultation process.	59/20/13(64%,21%,14%)	40.07	<0.001
The biomedical approach is currently considered more practical than the biopsychosocial approach.	32/23/37(34%,25%,40%)	3.28	0.194
The acceptable encounter time is 20-25 minutes.	60/17/15(65%,18%,16%)	42.15	<0.001
Responding to patient's feelings/emotions includes the NURS.	25/25/42(27%,27%,45%)	6.28	0.043
While less important, secondary data (e.g., patient thought about causation) requires more verification than primary data (e.g., symptoms).	51/16/25(55%,17%,27%)	21.54	<0.001
Patients with low health literacy need more respect from the physician.	66/11/15(71%,12%,16%)	61.33	<0.001
Thinking about the next question is part of active listening to the patient answering a closed-ended question.	62/15/15(67%,16%,16%)	48.02	<0.001

A concerning number of misconceptions were also identified. A majority of participants incorrectly believed that listening to patients in a judgmental way is appropriate (69% "Yes"), that dynamic cues are part of verbal communication (65% "Yes"), and that thinking of the next question while the patient is answering constitutes active listening (67% "Yes"). Additionally, 46% believed that offering false hope is acceptable when breaking bad news, and 55% believed secondary data requires more verification than primary data.

Communication Practices During Patient Encounters

Table 3 gives the frequency of engagement in communication activities among the participants. Strong practices were reported in giving undivided attention to the patient (95% "Yes"), using open-ended questions (83% "Yes"), actively listening and avoiding interruptions (79% "Yes"), encouraging patients to express themselves (87% "Yes"), picking up verbal and nonverbal cues (82% "Yes"), and explaining treatment options clearly (87% "Yes").

Practices implemented less consistently included ensuring patient privacy at the start of the encounter (71% "Yes"), actively expressing empathy (73% "Yes"), involving patients in decision-making (70% "Yes"), obtaining patient commitment to the treatment plan (75% "Yes"), and informing patients about the encounter time range (68% "Yes"). Variability was also observed in summarizing key issues at the end of the encounter (76% "Yes"), reviewing the treatment plan to ensure understanding (77% "Yes"), and informing patients about examinations and obtaining permission (75% "Yes").

Table 3. Participants' responses to practice questions

Practice Questions	Yes / No / Don't know No. (%)
You are giving undivided attention to the patient during the encounter.	87/3/2(95%/3%/2%)
Unless demanded by the patient (on the privacy aspect), I don't start the encounter in the presence of others (relatives).	65/10/17(71%/11%/18%)
When starting an encounter, I begin to ask open-ended questions rather than closed ones.	76/9/7(83%/10%/8%)
I actively listen and avoid interrupting patients when they express their concerns.	73/12/7(79%/13%/8%)
Actively encourage your patients to express and explain more about what they want to discuss regarding problems.	80/7/5(87%/8%/5%)
Picking up verbal and nonverbal cues given by your patient.	75/11/6(82%/12%/7%)
Actively express your understanding and empathy for your patient's problem.	68/15/10(73%/16%/11%)
Explain treatment options to your patient in a manner that ensures a high level of understanding by your patient.	80/7/5(87%/8%/5%)
I ask my patient to actively participate in making any decision or care plan.	64/18/10(70%/20%/11%)
Once a treatment plan was developed, you tried to get your patient's commitment to try to follow the treatment plan.	69/10/13(75%/11%/14%)
Use the last few minutes of the encounter to summarize the important issues discussed during the encounter.	70/10/12(76%/11%/13%)
Review the treatment plan with your patient after ensuring that the patient has a reasonably good understanding.	71/9/12(77%/10%/13%)
You inform the patient about the time range available for the encounter.	63/17/12(68%/18%/13%)
You inform the patient about the examination you are up to and get permission to conduct it.	69/10/13(75%/11%/14%)

Perceived Barriers to Effective Communication

Table 4 shows the participants' perceptions of the obstacles to effective communication. Time constraints (77% "Yes"), patients not adhering to the treatment plan (73% "Yes"), patients varied social and cultural backgrounds interfering with management (82% "Yes"), and patients' lack of interest in self-care (72% "Yes") were the most commonly mentioned obstacles. Patients' lack of interest in forming a partnership with the doctor (63% "Yes") and presentation with several problems (67% "Yes") were examples of moderate barriers. Although less frequently selected, patients' lack of trust in the physician (60% "Yes") remained a notable and clinically important barrier.

Table 4. Distribution of participants' responses about barriers to successful communication in Anbar 2024

Barriers	Yes / No / I don't know
Time limitation.	71/15/6(77%/16%/7%)
Presentation with multiple complaints.	62/11/19(67%/12%/21%)
The patient not following through with the treatment plan.	67/10/15(73%/11%/16%)
Patients have a variety of social and cultural backgrounds that interfere with management.	75/7/10(82%/8%/11%)
Patient's lack of interest in self-care.	66/14/12(72%/15%/13%)
Patient's lack of trust in the physician.	55/22/15(60%/24%/16%)
The patient's lack of interest in building a partnership with the physician.	58/17/17(63%/18%/18%)

Chi-Square Analysis

Table 5. Chi-square test of association - matched knowledge vs. practice domains

Communication Domain	Knowledge: Yes n (%)	Practice: Yes n (%)	χ^2	p-value	Association
Empathy (concept understanding vs. expressing empathy)	36 (39%)	68 (74%)	21.25	<0.001	Significant
Nonverbal communication (eye contact vs. picking up cues)	76 (83%)	75 (82%)	0.00	1.000	Not significant
Open-ended questioning (awareness vs. actual use)	68 (74%)	76 (83%)	1.57	0.211	Not significant
Encounter time (awareness vs. informing patient)	60 (65%)	63 (68%)	0.10	0.754	Not significant
Summarization (awareness vs. actual practice)	59 (64%)	70 (76%)	2.59	0.107	Not significant

Table 5 shows the association between knowledge and practice of different communication domains among participants. A statistically significant association was observed only for empathy ($\chi^2 = 21.25$, $p < 0.001$), indicating a strong relationship between conceptual understanding and actual expression of empathy in practice. On the other hand, nonverbal communication, open-ended questioning, encounter time awareness, and summarization were not significantly associated ($p > 0.05$), indicating a disconnect between theoretical knowledge and practical experience for most communication skills. From the above findings, it is clear that theoretical knowledge does not necessarily translate into practice except in the case of empathy.

DISCUSSION

The findings of this study revealed the highest proportion at age <40 (77%), higher than reported in a comparable study conducted in Pakistan (58.7%). Males represented 51%, slightly higher than reported in a study from the United States (49.21%), while females (49%) were lower than reported in a study from Sri Lanka (64.4%). Married participants (65%) exceeded the proportion reported in a study from Karbala (55.2%), and family medicine practitioners (9.8%) were notably fewer than reported in a study from China (43.58%).

Knowledge of core communication elements, such as eye contact (82%), was broadly comparable to findings from studies conducted in Iran (77%) and Europe (80.5%), and considerably higher than findings reported in a study from Egypt (45.9%). However, significant gaps were identified in emotionally complex domains, including responding to patients' feelings (27%) and the biopsychosocial approach (34%).

Regarding practice, 95% of participants reported giving undivided attention to patients, higher than reported in studies conducted in similar settings (88% and 73%, respectively), and considerably higher than reported in another regional study (65.7%). The chi-square test of association further revealed a significant gap specifically in empathy, where reported practice (73%) significantly exceeded correct conceptual understanding (39%) ($\chi^2 = 21.25$, $p < 0.001$), suggesting healthcare workers in Al-Ramadi express empathy intuitively rather than through a clear theoretical grounding. A knowledge-practice gap could not be determined for non-verbal communication, open-ended questions, time disclosure, and summarizing (all $p > 0.05$), demonstrating a relatively consistent relationship between knowledge and practice in these aspects.

The most frequent barrier mentioned was the social and cultural diversity of the patients affecting management (82%), which is in line with results found in other regional studies. Another important barrier was time constraint (77%), which is in agreement with results of similar regional studies, whereas this was a less frequently mentioned barrier in another regional study.

Recommendation, Implications, and Limitations

Some of the implications from the results on primary healthcare policy in Al-Anbar Governorate include the fact that there is a clear deficit in the levels of knowledge regarding empathy, the biopsychosocial model, and structured approaches such as SPIKES. Considering that there is more practice than knowledge in relation to empathy, it is recommended that training focuses on the conceptual aspects of practices rather than trying to teach new ones. Since time limitation has been identified as a major barrier, administrators could look at scheduling changes. Since cultural and social diversity was the most frequently cited barrier, training should also incorporate culturally tailored communication components specific to Al-Ramadi's population. This study has several limitations. Non-probability convenience sampling limits generalizability. Causal inference about the observed correlations between knowledge and practice is not possible due to the cross-sectional design. Self-reported practice data may also be subject to social desirability bias. Future research using direct observation and larger, representative samples is recommended.

CONCLUSION

This cross-sectional study assessed the knowledge, practices, and perceived barriers to communication skills among 92 primary healthcare workers in Al-Ramadi city, Iraq. Findings revealed generally good knowledge of core nonverbal communication elements, such as eye contact (82%) and open-to-closed-ended questioning (73%), but significant gaps in emotionally complex domains, including responding to patients' feelings (27%), the biopsychosocial approach (34%), and the SPIKES protocol for breaking bad news (54%). In practice, most participants reported giving undivided attention to patients (95%) and encouraging patient expression (87%), though privacy assurance (71%) and shared decision-making (70%) were less consistently implemented. A chi-square test of association revealed a statistically significant knowledge–practice gap specifically in empathy, where reported practice (73%) substantially exceeded correct conceptual understanding (39%) ($\chi^2 = 21.25$, $p < 0.001$), suggesting healthcare workers express empathy intuitively rather than through clear theoretical grounding. There were no significant differences between knowledge and practice in the areas of non-verbal communication, open questioning, revelation of encounter time, or summarization ($p > 0.05$ for all variables). The most common barriers were the variety of social and cultural background of patients (82%) and lack of time (77%). This shows that primary healthcare professionals in Al-Ramadi have a reasonable level of communication skills; however, they also have specific weaknesses which can be overcome with proper training. Training should focus on such issues as empathy, responsiveness, and proper communication technique use. It is important to solve the problem of lack of time. Further research should be done using probabilistic sample and direct observations of patient visits and should cover multiple medical centers in Iraq.

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