Evaluation of Physicians' Communication Skills at Primary Health Care Centers, KSA, 2016

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ABSTRACT

Background: Effective communication is a critical skill that has many benefits for both patients and doctors.
Objective: This study aimed to assess communication skills among primary health care physicians by exploring patients' views regarding during consultations.
Method: This was a cross-sectional study conducted at eleven (11) Primary Health Care Centers in Al-Khobar, Saudi Arabia, in which a questionnaire was designed to collect data. Descriptive analyses were conducted. A P-value < 0.05 was the criterion for significance.
Results: A total of 42 physicians and 198 patients were included. The communication skills was classified into four subscale domains. Of the four subscale domains of communication skills, general kindness achieved the highest mean score ± SD, of 3.98 ± 0.9, whereas the psychological/social domain achieved the lowest mean score ± SD, at 2.86 ± 1.4. The findings indicated that there is a significant positive correlation between physician specialty and general kindness, quality of care and psychological/social assessment, with p-values of 0.002, 0.043, and 0.001, respectively.
Conclusion: The majority of physicians have some deficiencies in communication skills, especially in the psychological and social aspects.

1. Introduction

Patient-physician communication is an important and critical component of clinical practice. When practiced well, communication produces a therapeutic effect for the patient, as validated in controlled studies. Effective physician-patient communication is essential to constructing a curative clinical relationship, which is the heart and art of medicine. It is a fundamental tool by which doctors and patients interact with each other and aim to achieve therapeutic goals. The ability to communicate effectively is highly appreciated as a core clinical skill.

The importance of these skills is clearly apparent in the primary care discipline. Physicians working at Primary Health Care Centers (PHCCs) are primarily the first contact for patients from all levels of the community. During an average of 40 years of a professional career, it was estimated that a general practitioner conducts between 120,000 and 160,000 interviews.[1] While sophisticated technologies can be used for medical diagnosis and treatment, interpersonal communication is the primary tool by which physicians and patients exchange information.[2]

Communication with patients can be defined as a particular talent and as an observable action used to deliver instructions and information, which are needed to reach an accurate diagnosis, provide appropriate counseling and management, and achieve the ultimate goal of optimal patient outcomes.

The role of physicians is not only limited to delivering information to patients about their medical conditions and management but also entails creating compelling and unique relationships by assessing patients' needs, concerns and expectations, conveying understanding, appreciating the impact of problems on patients' stability, showing empathy and providing support.

Studies have identified many fundamentals of effective technical and interpersonal exchanges in the physician-patient relationship, including verbal and nonverbal communication, empathy, patient-centered care, patient counseling, and well-organized transmission of information, affinity, well-discussed shared decisions and patient participation.[3,4]

Many factors contribute to patients' level of satisfaction with medical consultations. One of the most important factors is the physician's approach. Some physicians are more disease-oriented than patient-oriented. Others are more patient-centered and thus focus not only on the disease but also on the patient's experience of the illness. This attitude encourages patient participation. Studies have indicated that greater patient-centeredness during consultations leads to increased patient satisfaction."[5]

Patient-centered care focuses on patients' wants, needs and preferences to ensure that they can choose the care that best fits their individual circumstances.[6] Physicians should focus on treating patients as a whole, covering all areas of their health including biological, psychological, behavioral and social aspects.[7]

This type of care appears both relevant and easy to deliver, but in practice, it is very difficult to achieve it well. Patient-centered care requires physicians and other healthcare providers to have the communication skills needed to elicit patients' actual wishes and to recognize and respond to both their needs and their emotional concerns.[6]

Effective communication is an essential skill that has many benefits for both patients and doctors; furthermore, it has a positive influence on many outcomes including better management of chronic diseases, adherence to medical advice, compliance to management plans and follow-ups, elimination of misconceptions, decreased rates of referrals and, most importantly, increased patient and doctor satisfaction.

The doctor-patient relationship and the professional competence of physicians have been reported to be the most valued aspects of physician's skills from the patient's point of view.[8] In contrast, poor communication leads to multiple obstacles and barriers between physicians and patients, both of whom will unfortunately experience adverse outcomes. A lack of skills regarding how to communicate with patients may result in an inability to reach an appropriate diagnosis, as well as inappropriate follow-up visits and compliance.[9]

Physicians consistently state that they practice effective communication skills to an adequate degree and believe that there is no need for concern. More recently, however, evidence has pointed to the contrary. Numerous complaints raised from breakdowns in physician-patient communication have been reported.[10]

When studying at medical colleges, doctors' focus on the importance of communication skills has been increased and now includes some form of a communication skills development module in their curriculum; however, this module has been treated as a minor subject for which spend a minimum amount of time. Less than 5% of students' curriculum time was spent on training communication skills.[9] Subsequently, during residency, even less attention is devoted to implementing effective communication skills. Additionally, the vast majority of continuing medical education (CME) programs in medicine focus on the technological and biomedical aspects of medical care rather than on the development of communication skills.[9]

Based on these findings, it can be concluded that it is crucial to implement the basics of communication skills as a valued competency among physicians, especially those working at primary health care centers, who thus continuously manage patients.

This study assesses the communication skills and practice of a bio-psychosocial approach among primary health care physicians in Al-Khobar, Saudi Arabia.

The first step to address in the challenge of implementing the basics of communication skills is to describe the observed quality of communication skills by exploring patients' views regarding the communication performance during consultations.

2. Study Aim and Objectives
This study aimed to explore the practice of communication skills and the bio-psycho-social approach among physicians working in primary health care centers (PHCCs) in Al-Khobar Area and to assess patients' opinions regarding physician's communication skills during consultations.

3. Methodology
This was a cross-sectional study conducted among primary health care physicians working in the PHC Centers at Al-Khobar area; patients were seen from September to December 2015. All doctors working in Al-Khobar PHCCs and patients aged more than 18 years seen by these doctors who were qualified to communicate about their medical care were included. Dentists and physicians on vacation during the study period were excluded. The study sample consisted of a total of 55 doctors working in all eleven (11) of Al-Khobar's PHCCs. The number of physicians, their names, and place of work were provided by the PHCCs Administration Office. During the study period, 42 physicians who fulfilled the inclusion criteria participated in the study. The response rate was 76%. Based on physician's working hours and time taken for each patient consultation, the patient sample included was estimated to be 4 – 5 patients for each doctor. Therefore, the total patient sample was calculated to be between 168 and 210 patients seen by the target physicians. Patients were selected by random sampling. A questionnaire was developed after a thorough literature review based on the objectives of the study, considering socio-cultural background. The questionnaires were then translated into Arabic (the patients' native language). The translations were validated using back-translation and were then revised by 3 Family and Community Medicine consultants and a senior biostatistician.

A cross-sectional pilot study was performed prior to conducting the final study and included five physicians working at PHCs located in Dammam Area, KSA, and 23 patients. The purpose of the pilot test was to ascertain that the questionnaires were clear and easily understood by the respondents. Additionally, the pilot study helped assess the time needed to complete the questionnaires. Furthermore, it determined the financial support and staff needed to complete the study and reduced the number of unanticipated problems that could occur when conducting the full-scale study. Based on the results, some linguistic modifications of the questions were made to avoid confusion and to improve their comprehension and interpretation by participants. Questionnaires were reviewed

and checked for completeness. Data were coded, entered and analyzed on a personal computer using Statistical Package for Social Sciences (SPSS) version 21. Simple descriptive statistics were used to define the characteristics of the study variables through counts and percentages for categorical and nominal variables. Continuous variables were presented as the mean and standard deviation. Principal Component Analysis using Oblimin with Kaiser Normalization as the rotation method was performed to identify subscale domains from the obtained information. The data were scored on five-point Likert scales ranging from "never" to "always." For reliability analyses, Cronbach's alpha was used to ensure the reliability of the extracted subdomains. The relationships and correlations of the domains were tested in relation to the demographic and other variables using a series of t-tests, ANOVAs, and bivariate analyses such as Pearson and Chi-square tests for categorical variables. These tests were applied with the assumption of a normal distribution. Finally, a conventional p-value of <0.05 was used to indicate significance. Pearson's correlation coefficients (r) were extracted and calculated. All questionnaires were anonymous, and the collected data remained confidential and were not used for reasons other than the study purpose. All necessary approvals from the Ministry of Health were obtained.

4. Results
A total of 42 PHC physicians and 198 patients participated in this study.

4.1 Participants' Characteristics:
In total, 85.7% of the physicians were Saudi nationals. The age range was 24 to 56 years, with a mean age ± SD of 35.1 ± 8.4 years. Women represented 59.5% of the physicians. The experience of the physicians ranged between 1 and 30 years, with a mean ± SD of 8.1 ± 8 years. Physicians in the study saw 6 to 95 patients/day, with a mean ± SD of 34.5 ± 18.7 patients per physician.

Tables 1 & 2 show more demographic characteristics for the physicians and patients, respectively.

4.2. Presence of Chronic Diseases and Reasons for Clinic Visits
The prevalence of chronic diseases and reasons for visits are illustrated in Table 3.

Among the patients, 35.9% disclosed that they had chronic diseases. Diabetes mellitus and hypertension were the most common chronic diseases presented in the patients, consisting of 54.9% and 52.1% of the chronic diseases, respectively. Additionally, mental health problems occurred in 8.4% of the patients.

Only 27.3% of the patients visiting PHCCs came for a new complaint, and the rest were mostly visiting for follow-ups of chronic diseases.

Regarding the participants' consistency of follow-ups with one physician, 75.8% of the patients stated that they followed-up with the same doctor.

4.3 Communication Skills Domains
In this study, communication skills could be divided into four subscale domains: general kindness, quality of care, disease exploration and psychological/social assessment, as demonstrated in Table 4. These four domains exhibited a reliability of 0.9 and above using Cronbach's Alpha, as shown in Table 5.

4.4 Assessment of Communication Skills Domains
Patient scoring differed from one domain to another. When patients were asked directly about their overall satisfaction with the consultation session with their physician, 51% (101) said that they were always satisfied; 17.7% (35), satisfied most of the time; 20.7% (41), sometimes satisfied; 4.5% (9), rarely satisfied and 6.1% (12), never satisfied, with a mean score ±SD of 4.03 ± 1.2. The psychological/social assessment domain received the lowest score, with a mean score ± SD of 2.86 ±1.4.

Table 6 illustrates the assessment of items in the communication skills domains.

4.4.1 General Kindness Domain
The patients rated this domain the highest compared with the other domains, with a mean score ± SD of 3.98 ± 0.9.

Questions about whether physicians understood what patients had to say and whether they were listening carefully to what patients said received the highest scores, with mean scores ± SD of 4.16 ± 1.13 and 4.14 ± 1.14, respectively. On the other hand, the lowest score was observed for expressing empathy by gestures and eye contact (mean score ± SD of 3.58 ± 1.4).

4.4.2 The Quality Care Domain
Explaining the lab tests that patients needed and providing patients with the information they wanted received the highest rates, with mean scores ± SD of 3.81 ± 1.35 and 3.74 ± 1.27, respectively, whereas including patients in the discussion had the lowest mean score ± SD of 3.46 ± 1.45.

4.4.3 Psychological/Social Domain
Asking about patients' ideas regarding their complaint received the highest ratings, with a mean score ± SD of 3.20 ± 1.62, followed by asking about patient's expectations (mean score ± SD of 2.89 ± 1.63); about their concerns, with a mean score ± SD of 2.87 ± 1.61; and about the impact of the presented problem on their sleep, performance, and relationships, with a mean score ± SD of 2.83 ± 1.69. Moreover, asking patients about their mood and interests and about their concerns showed the lowest mean scores ± SD, at 2.69 ± 1.67 and 2.27 ± 1.66, respectively. As confirmed in the descriptive analysis, approximately half of the patients, 53.2%, said that they were never asked about their mood or interest, and only 24.7% were consistently asked.

4.4.4 Disease Exploration Domain
The question regarding the naming of findings and diagnosis received the highest mean score ± SD of 3.62 ± 1.43, whereas explaining the course and prognosis of the disease was scored the lowest, with a mean score ± SD of 3.35 ± 1.47.

4.5 Effect of Physicians' and Patients' Characteristics on Communication Skills Domains
The effects of physicians' and patients' characteristics on the communication skill domains are illustrated in tables 7 and 8.

There was a significant positive correlation between physician specialty and the three domains of general kindness, quality of care and psychological/social assessment.

In the general kindness domain, physicians with a Family Medicine (FM) Diploma received the highest score rating (mean score ± SD of 4.61 ± 0.6), followed by FM Specialists (mean score ± SD of 4.28 ± 0.5). Physicians with a Bachelor's Degree (mean score ± SD of 3.85 ± 1.0) and finally FM consultants (mean score ± SD of 3.71 ± 0.8), p-value = 0.002.

With respect to the quality of care domain, FM-certified physicians received the highest rating, ranging between 4.16 and 3.60, compared to physicians with a Bachelor's degree, who receive a mean score ± SD of 3.53 ± 1.1, p-value = 0.043.

In the psychological/social assessment domain, physicians with a certification for an FM Diploma received the highest mean score ± SD of 3.72 ±1.4 compared to FM Board specialists, who had a mean score ± SD of 3.52 ± 1.3. Physicians who graduated with a Bachelor's degree achieved a mean score ± SD of 2.67 ±1.4, and FM Consultants had the lowest mean score ± SD of 1.50 ± 0.5, p-value <0.001.

It was clear that physicians' age and years of experience had a significant positive correlation with the exploring disease domain,

with p-values of 0.001 and 0.040 and r values of 0.24 and 0.146, respectively.

Table 8 shows that of the patient demographic characteristics tested, the only positive correlation was between the general kindness domain and patients' age. As age increased, general kindness also increased and vice versa (r=0.144). On the other hand, all other patient demographic characteristics showed no relationship with the change in the other four subscale domains.

5. Discussion
Patient satisfaction is recognized as a cornerstone of health care services assessments.[11,12] In this study, certified Family Medicine physicians represented 23.8% of the physician sample, which aligns with Ministry of Health statistics. Historical studies show that prior to 2010, there were no records of family medicine physicians in PHCCs. The number started to increase gradually in 2010, from 20.6% to 32.9% in 2014 in the Eastern Province,[13] indicating that awareness of the importance of family medicine-specialized physicians increased.

The sample of patients consisted mainly of young and middle-aged individuals with a mean age of 39.4 years, which is roughly representative of the population of Saudi Arabia, as the young and middle-aged represent 67.6% of the Saudi population.[13,14] Around a quarter of the patients (22.2%) were illiterate or had elementary school degrees, and the majority (34.3%) had secondary school degrees.

Among the patients participating in the study, it was clear that Diabetes Mellitus was the most common chronic disease (54.9%), followed by hypertension (52.1%). The prevalence of diabetes is known to be high in the Saudi population, and it presents a major health problem.[15] In one study performed among patients attending primary care clinics at King Fahad Armed Forces Hospital in 2009, 30% of patients had diabetes.[15] A national survey conducted among the Saudi population in 2013 indicated that 15.2% and 40.6% were hypertensive or borderline hypertensive, respectively.[16]

Self-reported mental health problems among patients participating in this study were present in only 8.4%, despite the fact that a high prevalence has been observed based on screening tools, accounting for 10% of up to 60% of PHCC visitors.[17] This may have resulted from a misdiagnosis of these problems.

Among the patients in this study, 49% were not always satisfied with their visit and physician consultation session. This percentage is considered very high in a primary care setting, which provides primary care as well as a continuous and diverse range of care needs. Researchers have identified that good communication skills are a key factor in better patient outcomes and better patient satisfaction. By improving communication with their patients, healthcare professionals can not only improve patient satisfaction but also improve their own job satisfaction.[18]

In our study, we extracted four subscale domains from the communication skills assessed in our questionnaire, and to our knowledge, there were no previous or other categorizations of communication skills in terms of these domains.

Regarding the individual subscale domains, physician kindness was highly rated by the patients (mean score of 3.98). Of the items pertaining to kindness, physicians' understanding of patients and listening carefully to what they had to say garnered the highest ratings (76.7% and 73.8%, respectively). This is a very positive report, as noted by Hardee and Kasper,[19] who stated that listening is a critical piece of physician effectiveness. This finding was again reiterated by Lloyd,[20] who said that active listening is necessary and important across the entire spectrum of care, from the simplest office visit to the most complicated inpatient scenario.

Furthermore, how comfortably patients were greeted and how the reasons for their visits were discussed were also highly evaluated. This is consistent with the findings of Cornstock et al., who reported that showing respect and greeting patients at the start and end of a visit had significant effects on their satisfaction.[21] On the other hand, the lowest rating in this domain was found for expressing empathy through gestures and eye contact, which had a mean score of 3.58. This item should receive more attention from physicians, as patients seek empathy from their physicians[22] and patient satisfaction is likely to be enhanced by physicians who acknowledge their patients' expressed emotions.[23]

Under the quality care domain, patients were more satisfied when physicians explained the lab tests that were needed and when they gave their patients the desired information, whereas involving patients in the discussions had the lowest rate. This indicates that when patients are more involved in the decision-making process and when they participate in their management plan, their satisfaction increases. In a study by Kaplan et al., they found that patients of physicians with a "participatory decision-making style" had better health outcomes and were satisfied with their care.[4] Moreover, they also found that physicians with a more participatory decision-making style were 30% less likely to have patients leave their care.[4] Travaline et al. noted that physicians should avoid engaging in long monologs in front of patients.[23] Furthermore, it is far better for physicians to use short statements and clear and simple explanations.'[23]

The application of a psychosocial approach in this study was assessed through the psychological/social domain, and this approach was most frequently performed by physicians when they asked about patients' ideas (49%), followed by about patients' expectations (41.9%), patients' concerns (40.5%) and finally the impact of the problem on patient's sleep, performance and relationships (37.4%). This finding differed from what was reported by Matthys et al. (2009), except for the results regarding concerns; they indicated that ideas were expressed in 35.2%, concerns in 42.3% and expectations in 60.2% of all contacts.[24] Britten and Ukoumunne in their study hypothesized that knowledge of patients' ideas, concerns and/or expectations could improve the understanding of patients' aims.[25]

The psychological/social assessment domain received the lowest level of patient satisfaction, with a meanscore ± SD of 2.86 ± 1.4. The expectations of primary health care physicians are incredibly high regarding the diagnosis and management of common mental health problems, which have direct effects on patient well-being. In this study, only 24.7% of the participating patients indicated that they were always asked about their moods and interests, and 25.3% of the patients declared that physicians always asked them about their worries; this is a very low percentage and below expectations, despite the fact that screening for depression in general practice is effective at diagnosing depression and optimizing treatment and that the two questions verbally asked are potentially useful for screening for depression due to their reasonable validity and brevity.[26]

Finally, for the disease exploration domain, naming of the findings and diagnosis received the highest score of 3.62, whereas explaining the course and prognosis of the disease had the lowest score of 3.35. Researchers in various settings have indicated that alignment between patients and physicians concerning the diagnosis and treatment plan is related to enhanced medication adherence and improved results.[27]

In this study, it was evident that there was a significant correlation between physicians' specialty and three of the communication skills domains.

The FM-certified physicians who had a diploma or board certification received higher scores for domains including kindness, quality of care and psychological/social aspects. This might be related to the continuous assessment of these physicians compared to physicians with a bachelor's degree and to the fact that communication skills training was implemented in the residency program and continued longitudinally.

Many studies have shown better outcomes of communication skills training programs in which skills were practiced.[28] This was observed in one study including 53 general internists and family practitioners and 473 of their patients, which found that short programs had no effects on communication skills, whereas physicians enrolled in long programs received more benefits and showed more improvement in skills.[29]

6. Limitations
The sampling method used in this study may have influenced the validity of the study outcomes because the patients were asked to voluntarily participate in the study. Accordingly, patients who volunteered may have had feelings that differed from those who did not. Additionally, the study targeted outpatient visits only, not inpatients. Therefore, further studies with a larger sample size are needed to assess the potential disparities between inpatients and outpatients.

Furthermore, supplementary studies that allow comparisons of patient satisfaction between primary health care patients and a large sample of hospital patients should be conducted. Finally, patients' behavior and differences in the reasons for a visit, or vice versa, might have affected physicians' use of communication skills, and these factors were not considered in this study.

7. Conclusion
This study was unique in classifying the communication skills into subscale domains including: General kindness, Quality of care, Psychological/ social assessment, and Disease exploration. The study shows that PHC physicians have some deficiencies in the four domains of communication skills: kindness, quality of care, psychological/social and disease exploration. Additionally, these defects were evident in the psychological and social domain. Furthermore, despite the high prevalence of mental health problems in PHCCs, which have shown a worldwide prevalence as high as 60%, these problems were underestimated in this study as a result of a lack of awareness either by patients or by physicians. Resources and simple screening processes should encourage physicians to cover this aspect.

Patients' perspectives played a large role in this study, and trials were conducted to ensure they were measured in a comprehensive manner. FM-certified physicians were found to be highly rated by patients in almost all domains. FM physicians exerted impressive efforts in exploring the psychological and social aspects of care. Based on these results, it is the responsibility of decision makers to encourage family physicians post-graduation to utilize their competencies and to provide the resources needed to support them. Physicians should work to enhance their skills to reach the optimal goal of improved patient outcomes.

8. Recommendations
Based on the findings of this study, the following recommendations can be made to improve physicians' communication skills:

- Supplementary studies regarding this subject should be conducted.
- More training programs in communication skills should be provided to PHC physicians with more of a focus on the psychological and social aspects.
- Physicians are advised to not limit their communication with patients to verbal communication only but to also develop and use their non-verbal communication skills such as listening and showing empathy.
- PHC physicians are encouraged to screen for highly missed mental health problems among PHC patients.
- Mental health programs should form an integral and

fundamental part of PHC services.
- PHC physicians are encouraged to enroll in Family Medicine post-graduate programs.
- Patients' perspectives and opinions in addition to those of PHC physicians should be evaluated periodically to help improve health care services and to determine both the limitations and how to resolve them.

Appendices

Doctor sheet
Serial Number:
PHC Name:
Clinic ☐ **General** ☐ **Chronic Disease** ☐ **Other ....**
Number of the clinic:
Date ...../...../2015

	Demographic Data
1-	Gender ☐ Male ☐ Female
2-	Marital Status ☐ Married ☐ Divorced ☐ Widow ☐ Single
3-	Age:..........
4-	Nationality: ☐ Saudi ☐ Non-Saudi
5-	Specialty: ☐ Bachelor's Degree of Medicine ☐ Post-Graduate Family Medicine Diploma ☐ FM Resident ☐ FM Specialist ☐ FM Consultant ☐ Other:........
6-	Number of years of experience:.............
7-	Number of patients seen in a typical clinical day:................
8-	Do nurses ever attend consultations with you? ☐ All the time ☐ If needed ☐ Never

Patient Sheet
Serial Number:
PHC Name:
Clinic ☐ **General** ☐ **Chronic Disease** ☐ **Other ....**
Number of the clinic:
Date..... / ..... / 2015

	Demographic Data
1-	Gender: ☐ Male ☐ Female
2-	Age:............
3-	Nationality: ☐ Saudi ☐ Non-Saudi
4-	Marital Status: ☐ Married ☐ Divorced ☐ Widow ☐ Single
5-	Education Level: ☐ Illiterate ☐ Elementary ☐ Intermediate ☐ Secondary ☐ University ☐ Master ☐ PhD
6-	Do you have any chronic diseases: ☐ Yes ☐ No Please list them:
7-	Is your chronic disease well controlled: ☐ Yes ☐ No
8-	Reason for today's visit with the doctor: ☐ Follow-up ☐ New Complaint ☐ Lab Investigation Results ☐ Medication Refill ☐ Referral ☐ Other......
9-	Do you follow with another physician for the same complaint: ☐ Yes ☐ No

Answer the following questions about the doctor you met today:
Part 1 1 Never 2 Rarely 3 Sometimes 4 Most of the time 5 Always

1-	Greeted me in a way that made me feel comfortable	☐1	☐2	☐3	☐4	☐5
2-	Discussed my reason(s) for coming today	☐1	☐2	☐3	☐4	☐5
3-	Encouraged me to express my thoughts concerning my health problems	☐1	☐2	☐3	☐4	☐5
4-	Listened carefully to what I had to say	☐1	☐2	☐3	☐4	☐5
5-	Understood what I had to say	☐1	☐2	☐3	☐4	☐5
6-	If a physical examination was required, fully explained what was conducted and why	☐1	☐2	☐3	☐4	☐5
7-	Explained the lab tests needed	☐1	☐2	☐3	☐4	☐5
8-	Discussed treatment options with me	☐1	☐2	☐3	☐4	☐5
9-	Gave me as much information as I wanted	☐1	☐2	☐3	☐4	☐5
10-	Checked to see if the treatment plan was acceptable to me	☐1	☐2	☐3	☐4	☐5
11-	Explained medications, if any, including possible side effects	☐1	☐2	☐3	☐4	☐5
12-	Encouraged me to ask questions	☐1	☐2	☐3	☐4	☐5
13-	Responded to my questions and concerns	☐1	☐2	☐3	☐4	☐5
14-	Involved me in decisions to the extent that I wanted	☐1	☐2	☐3	☐4	☐5
15-	Discussed next steps including my follow-up plans	☐1	☐2	☐3	☐4	☐5

16- Checked to be sure I understood everything	☐1 ☐2 ☐3 ☐4 ☐5
17- Showed care and concern about me as a person	☐1 ☐2 ☐3 ☐4 ☐5
18- Expressed empathy through gestures and eye contact	☐1 ☐2 ☐3 ☐4 ☐5
19- Spent the right amount of time with me	☐1 ☐2 ☐3 ☐4 ☐5
20- Overall, I was satisfied with my visit to the doctor	☐1 ☐2 ☐3 ☐4 ☐5

Part two: Biopsychosocial

1- Labelled the finding and diagnosis	☐1 ☐2 ☐3 ☐4 ☐5
2- Discussed the relationship between the finding and diagnosis	☐1 ☐2 ☐3 ☐4 ☐5
3- Explained the prognosis or expected course	☐1 ☐2 ☐3 ☐4 ☐5
4- Asked me about my ideas regarding my complain	☐1 ☐2 ☐3 ☐4 ☐5
5- Asked me about my concerns	☐1 ☐2 ☐3 ☐4 ☐5
6- Asked me about my expectations of the consultation	☐1 ☐2 ☐3 ☐4 ☐5
7- Asked me if the problem affected my sleep, performance or relationships	☐1 ☐2 ☐3 ☐4 ☐5
8- Asked me about my moods and interests	☐1 ☐2 ☐3 ☐4 ☐5
9- Asked me about my worries	☐1 ☐2 ☐3 ☐4 ☐5

Table 1. Physicians' Demographic Characteristics

Physicians' Demographic Characteristics (N=42)		
Gender		
	Men	40.5%
	Women	59.5%
Age	Mean ± SD	35.1±8.4
Nationality		
	Saudi	85.7%
	Non-Saudi	14.3%
Marital Status		
	Single	19.0%
	Married	73.8%
	Divorced	4.8%
	Widow	2.4%
Specialty of Physician		
	Bachelor Degree of Medicine	73.8%
	Family Medicine Diploma	14.3%
	Family Medicine Specialist	7.1%
	Family Medicine Consultant	2.4%
	Other	2.4%
Presence of Nurse in the clinic		
	All the time	16.7%
	If needed	47.6%
	Never	35.7%

Table 2. Patients' Demographic Characteristics

Patients' Demographic Characteristics (N=198)		
Gender		
	Men	44.9%
	Women	55.1%
Age		
	Mean ± SD	39.43± 13.9
Nationality		
	Saudi	74.6%
	Non- Saudi	25.4%
Marital Status		
	Single	24.4%
	Married	60.3%
	Divorced	11.2%
	Widow	4.1%
Level of Education		
	Illiterate	8.1%
	Elementary	14.1%
	Intermediate	13.6%
	Secondary	34.3%
	University	27.8%
	Postgraduate	2.0%

Table 3. The Prevalence of Chronic Diseases and the Reasons for Clinic Visits among patients visiting PHC clinics in Al-Khobar, KSA.

Presence of Chronic Disease and Reasons for Visits (N=198)		
Chronic disease		
	Present	35.9%
	Absent	64.1%
Chronic disease type		
	Diabetes Miletus	54.9%
	Hypertension	52.1%
	Dyslipidemia	22.5%
	Bronchial asthma	18.3%
	Hypothyroidism	9.9%
	Mental health problem	8.4%
	Osteoarthritis	5.6%
	Rheumatoid arthritis	5.6%
	Cardiac disease	2.8%
	Sickle cell disease	1.4%
Chronic disease control level		
	Well-controlled	60.6%
	Not controlled	39.4%
Reasons for Clinic Visit		
	Follow-up	42.4%
	New complaint	27.3%
	Investigation results	9.6%
	Referral	9.6%
	Other	6.1%
	Medication refill	4.5%

Table 4 Descriptive statistics of the four communication skills domains

Domains	Min	Max	Mean	SD
General Kindness	1.00	5.00	3.98	0.9
Quality of care	1.00	5.00	3.65	1.0
Psychological/Social Assessment	1.00	5.00	2.86	1.4
Disease Exploration	1.00	5.00	3.50	1.3

Table 5 Reliability of the Communication Skills Domains

Reliability Statistics		
Domains	Cronbach's Alpha	N of Items
General Kindness	0.928	11
Quality of care	0.903	9
Psychological/Social Assessment	0.938	6
Disease Exploration	0.906	3

Table 6 Communication Skills Domains Assessment

Domain	Domain Items	Occurred Always and Most of the Time (%)	Mean	SD	Skewness
General Kindness	Listened carefully to what I had to say	146 (73.8)	4.14	1.14	-1.163
	Greeted me in a way that made me feel comfortable	142 (71.7)	4.09	1.12	-1.023
	Showed care and concern about me as a person	127 (64.2)	3.85	1.32	-0.809
	Overall, I was satisfied with my visit to the doctor	136 (68.7)	4.03	1.21	-1.062
	Understood what I had to say	154 (76.7)	4.16	1.13	-1.247
	Spent the right amount of time with me	130 (65.7)	3.97	1.16	-0.790

	Respond to my questions and concerns	138 (69.7)	4.07	1.16	-1.026
	Discussed my reason(s) for coming today	148 (74.7)	4.13	1.15	-1.201
	Encouraged me to express my thoughts concerning my health problems	134 (67.7)	3.90	1.26	-0.878
	Expressed empathy by gestures and eye contact	114 (57.6)	3.58	1.44	-0.617
	Checked to be sure I understood everything	131 (66.2)	3.90	1.33	-0.940
Quality of Care	Discussed treatment option with me	120 (60.3)	3.68	1.41	-0.672
	Explained medications, if any, including possible side effects	108 (54.6)	3.58	1.43	-0.581
	Discussed next steps including my follow-up plans	123 (62.1)	3.71	1.38	-0.746
	Checked to see if the treatment plan was acceptable to me	118 (59.6)	3.62	1.41	-0.616
	Involved me in decisions as much as I wanted	112 (56.5)	3.46	1.45	-0.497
	Explained the lab test needed	125 (63.2)	3.81	1.38	-0.837
	If a physical examination was required, fully explained what was assessed and why	116 (58.6)	3.58	1.45	-0.642
	Gave me as much information as I wanted	119 (60.1)	3.74	1.28	-0.672
	Encouraged me to ask questions	118 (59.6)	3.71	1.32	-0.628
Psychological/ Social Assessment	Asked me about my mood and interests	73 (36.8)	2.69	1.67	0.280
	Asked me about my worries	72 (36.4)	2.27	1.66	0.270
	Asked me if the problem affected my sleep, performance, or relationships	74 (37.4)	2.83	1.69	0.133
	Asked me about my expectations	83 (41.9)	2.89	1.63	0.089
	Asked me about my concerns	80 (40.5)	2.87	1.61	0.120
	Asked me about my ideas regarding my complaint	97 (49.0)	3.20	1.62	-0.222
Exploring Disease	Identified the finding and diagnosis	114 (57.6)	3.62	1.43	-0.639
	Discussed the relationship between the finding and diagnosis	114 (57.5)	3.53	1.50	-0.546
	Explained the prognosis or expected course	99 (50.0)	3.35	1.48	-0.322

Table 7 Physicians' demographic relations with the four communication skills domains

Physician Demographics		General Kindness	Quality of Care	Psychological/ Social Assessment	Disease Exploration
Age of Physician	r	0.006	0.092	0.089	0.24
	p-value	0.939	0.210	0.225	0.001b
Years of Experience	R	0.025	0.056	0.063	0.146
	p-value	0.729	0.429	0.381	0.040c
Gender of Physician	Men	4.03 ± 0.8	3.72 ± 1.0	2.81 ± 1.4	3.45 ± 1.3
	Women	3.95 ± 1.0	3.61 ± 1.1	2.90 ± 1.5	3.54 ± 1.4
	p-value	0.537	0.488	0.666	0.655
Marital Status of the Physician	Single	3.89 ± 0.9	3.41 ± 1.1	2.59 ± 1.5	3.18 ± 1.4
	Married	4.00 ± 0.9	3.69 ± 1.0	2.91 ± 1.4	3.55 ± 1.3
	Divorced	3.90 ± 1.1	3.83 ± 1.2	2.65 ± 1.5	3.52 ± 1.5
	Widow	4.61 ± 0.4	4.30 ± 0.5	4.33 ± 0.6	4.89 ± 0.2
	p-value	0.623	0.315	0.191	0.141
Nationality of Physician	Saudi	4.02 ± 0.9	3.69 ± 1.0	2.89 ± 1.5	3.53 ± 1.4
	Non-Saudi	3.80 ± 0.9	3.43 ± 1.0	2.69 ± 1.4	3.34 ± 1.3
	p-value	0.244	0.212	0.495	0.494
Specialty of Physicians	Bachelor Degree	3.85 ± 1.0	3.53 ± 1.1	2.67 ± 1.4	3.36 ± 1.4
	FM Diploma	4.61 ± 0.6	4.03 ± 1.0	3.72 ± 1.4	3.92 ± 1.3
	FM Board Specialist	4.28 ± 0.5	4.16 ± 0.7	3.52 ± 1.3	3.96 ± 0.8
	FM Board Consultant	3.71 ± 0.8	3.60 ± 0.8	1.50 ± 0.5	3.40 ± 1.2
	p-value	0.002a	0.043a	<0.001a	0.066

[a]significant using Pearson's correlation @ the <0.05 level
[b]significant using Pearson's correlation @ the <0.01 level
[c]significant using Pearson's correlation @ the <0.05 level
r = Pearson's correlation coefficient value

Table 8 Relationships between patients' demographics and the four communication skills domains

Domains*Patient Demographics		General Kindness	Quality of Care	Psychological/ Social Assessment	Disease Exploration
Age of Patient	r	0.144	0.133	0.070	0.066
	p-value	0.044a	0.063	0.331	0.356
Gender of Patient	Men	4.04 ± 0.8	3.67 ± 1.0	2.87 ± 1.4	3.47 ± 1.4
	Women	3.94 ± 1.0	3.64 ± 1.1	2.85 ± 1.5	3.52 ± 1.3
	p-value	0.431	0.865	0.926	0.792
Marital Status of Patient	Single	3.87 ± 1.0	3.58 ± 1.0	2.76 ± 1.4	3.32 ± 1.3
	Married	4.03 ± 0.9	3.69 ± 1.0	2.93 ± 1.4	3.65 ± 1.3
	Divorced	4.01 ± 0.9	3.57 ± 1.2	2.78 ± 1.6	3.18 ± 1.7
	Widow	3.85 ± 1.0	3.67 ± 1.3	2.50 ± 1.6	3.04 ± 1.4
	p-value	0.785	0.922	0.784	0.215
	Total	3.99 ± 0.9	3.66 ± 1.0	2.87 ± 1.4	3.51 ± 1.3
Nationality of Patient	Saudi	3.98 ± 1.0	3.67 ± 1.1	2.91 ± 1.4	3.52 ± 1.4
	Non-Saudi	4.00 ± 0.9	3.64 ± 1.0	2.76 ± 1.4	3.50 ± 1.3
	p-value	0.897	0.844	0.546	0.938
Level of Education of Patient	Illiterate	4.22 ± 0.7	4.10 ± 0.9	3.11 ± 1.2	3.73 ± 1.0
	Elementary	4.11 ± 0.8	3.77 ± 1.1	2.86 ± 1.3	3.77 ± 1.3
	Intermediate	4.08 ± 0.9	3.65 ± 1.0	2.80 ± 1.5	3.74 ± 1.2
	Secondary	3.93 ± 1.0	3.63 ± 1.0	3.00 ± 1.5	3.41 ± 1.4
	University	3.89 ± 1.0	3.58 ± 1.0	2.68 ± 1.5	3.35 ± 1.4
	Postgraduate	3.80 ± 0.7	2.33 ± 0.7	2.38 ± 1.6	2.67 ± 1.9
	p-value	0.742	0.072	0.794	0.417

[a]significant using Pearson's correlation @ the <0.05 level
r = Pearson's correlation coefficient value

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