BOHR

BOHR International Journal of General and Internal Medicine
2023, Vol. 2, No. 1, pp. 27–33
DOI: 10.54646/bijgim.2023.15
www.bohrpub.com

METHODS

Evaluation of factors influencing physician–patient communication in healthcare service delivery

Laurine Chikodiri Nwosu[1], Great Iruoghene Edo[2,3*], Mehmet Yeşiltaş[1], Endurance Agoh[4] and Rashidat Adelola Lawal[5]

[1]Department of Business Administration, Faculty of Economics and Administrative Sciences, Cyprus International University, Nicosia, Turkey
[2]Department of Petroleum Chemistry, Faculty of Sciences, Delta State University of Science and Technology, Ozoro, Nigeria
[3]Department of Chemical Science, Faculty of Sciences, Delta State University of Science and Technology, Ozoro, Nigeria
[4]Department of Nursing Science, Faculty of Basic Medical Sciences, Delta State University, Abraka, Nigeria
[5]Departments of Nursing, Faculty of Nursing, Near East University, Nicosia, Turkey

*Correspondence:
Great Iruoghene Edo,
greatiruo@gmail.com (G.I. Edo)

Received: 28 April 2023; **Accepted:** 15 May 2023; **Published:** 29 May 2023

Physician–patient communication has received less focus in the study of healthcare service delivery in Nigeria. The majority of communication relies on message delivery rather than interpersonal communication. Even when doctors have significant knowledge to share with their patients, they frequently lack the interpersonal communication skills required to do it successfully. This quantitative study employed the analysis of 150 valid responses from practicing physicians in Lagos state. Descriptive statistics were carried out to understand the factors influencing physician–patient communication. The results revealed good communication skills among physicians as they agreed to have social conversations with patients, listen intently to them, and promote question-asking. The responses from the survey also revealed that factors such as limited consultation time and unfavorable working environments could negatively impact physician–patient communication. Furthermore, the test hypothesis revealed a significant correlation between physicians' age and gender ($p < 0.05$), whereas physicians' ethnicity and religion had non-significant associations. The evaluation of factors influencing physician–patient communication revealed that several individual and contextual factors contribute to effective communication, including physician communication skills, patient health literacy, and system-level factors such as time constraints and workload. Healthcare organizations and policymakers should prioritize efforts to improve physician–patient communication by addressing the identified factors that influence communication and implementing evidence-based interventions to enhance communication between physicians and patients.

Keywords: communication skills, patients, physicians, interpersonal communication, socio-demographics

Introduction

The of patient-centeredness, of which effective communication is a vital component, has long been recognized in medicine. Effective communication is a critical clinical function that cannot be outsourced. Despite its importance in establishing patient-centered care, physician–patient communication is still a difficult phenomenon. It becomes even more complicated when patients come from different socioeconomic and ethnic backgrounds (1). Being a great listener, creating a great interpersonal relationship, sharing information, and making patient-centered care options are all important parts of this form of communication.

Communication is not merely a common component of the healthcare system; it constitutes the primary means for diagnosing and treating diseases, managing illnesses, and preventing numerous health issues. Effective

CC BY NC ND

communication becomes crucial for a successful relationship and successful health outcomes as patients depend on doctors for proper diagnosis and treatment. Good patient–physician communication has been associated with patients' overall satisfaction with their healthcare experience, which affects their adherence to doctor's recommendations, and willingness to openly disclose their medical symptoms and concerns (2).

On the other hand, a breakdown in the relationship between physicians and patients frequently emerges as unsatisfactory. This might be due to patients' and physicians' differing perceptions of what makes up good communication. Patients prefer a psychosocial communication model over a biomedical approach, which is more typically utilized by physicians. Physicians also have a tendency to overestimate their capacity to communicate. According to a survey conducted by the American Academy of Orthopedic Surgeons, only 21% of patients felt their doctors were communicating with them properly, compared to 75% of orthopedic surgeons surveyed. This emphasizes the significance of creating an appropriate communication program to ensure that doctor–patient communication remains at an acceptable standard (3).

It is impossible to exaggerate the value of effective health communication in Nigeria's healthcare system. If Nigeria's healthcare delivery system is to take its proper place in the globalized world, sustained efforts to increase communication system connection must be given recognition (1). Time management, issues with rapport building, physicians who do not clearly explain the disease and its management to their patients, culture, socio-political factors, language, and the physical setup of the hospital are all examples of communication hurdles in healthcare delivery. These communication barriers result in lower healthcare quality, unfavorable health outcomes, and health disparities.

Physicians are viewed by society as "more powerful" while dealing with patients because of their education and expertise in the delivery of healthcare. The power dynamics between physicians and patients have been linked to the paternalistic culture of the Nigerian healthcare system. Communication between physicians and patients has been hindered as a result of the power imbalance that occurs between patients and healthcare professionals, where patients have a high level of confidence and admiration for doctors—almost to the point of worship. People are thus relying more on doctors and having more confidence in their judgment (4). However, physicians have been chastised in recent years for failing to consider patients' opinions and preferences about the condition being cured. Conversely, patients frequently believe that a physician knows something regarding their health that he or she does not. These are complicated issues that develop when doctors and patients do not communicate well. Patients are disempowered as a result of such asymmetric communication and decision-making and hardly participate in their care. Ineffective communication has been associated with inaccurate diagnosis, poor patient compliance, overtreatment, under-treatment, and "mistreatment." A growing number of educated people are demanding medical authority, and the physician–patient relationship is rapidly becoming a legal problem.

Health counseling and physician–patient communication are consistently low in the efficacy of healthcare delivery systems, according to the research conducted in the least developed nations. The majority of communication relies on message delivery rather than interpersonal communication. Even when doctors have significant knowledge to share with their patients, they frequently lack the interpersonal communication skills required to do it successfully. Accessibility, equal distribution of resources, empowerment, and involvement are not only the factors that impact healthcare service delivery in Nigeria. The doctor–patient relationship has a major influence on it as well (5). Physicians may provide delayed, inaccurate, or inappropriate medical care as a result of ineffective communication with patients. Patients who fail to adequately express their symptoms, on the other hand, may cause doctors to prescribe medications that are unsuitable for their illness. Therefore, both the doctor and the patient must maintain a high level of communication.

The Social Identity Theory (SIT) can be used to understand how the demographic characteristics of physicians affect communication with patients. It posits that individuals define their self-concept based on their group memberships and strive to maintain a positive social identity (6). Research has shown that physicians' demographic characteristics can significantly impact their communication with patients, affecting patient outcomes, satisfaction, and adherence to medical advice. For instance, a study in (7) found that patient–physician racial concordance positively affected communication and trust in medical encounters. Social identity theory suggests that physicians' demographic characteristics may affect their communication with patients through three primary mechanisms: in-group bias, stereotype threat, and social categorization. This understanding can help physicians to be more mindful of their communication with patients and ensure that they provide high-quality care to all patients, regardless of their demographic characteristics.

People in Nigeria are increasingly venting their rage on physicians and hospitals when family members die while undergoing treatment. As a result, individuals have become more distressed about the death of loved ones, and their expectations and faith in physicians have gradually dwindled, which has led people to become more conscious of their physicians' communication effectiveness, or lack thereof, and are finding it less difficult to critique or challenge their physicians' actions and judgments (8). There is, in fact, a body of literature addressing physician–patient communication, its effect on health outcomes, and parts for improvement. Yet, for Lagos, a multicultural state in Nigeria, there is limited

information on current physician views on physician–patient communication and how it may be improved. As a result, advocating for policy or practice changes to improve healthcare services will be challenging because it is unknown what is beneficial and what needs changing. The Nigerian health system is mainly centered on the biomedical model, with disease management measures constituting the key delivery pattern for public services. The aim of this study is to address the problem of inadequate communication, which has hampered physician–patient interaction. To address such issues, this study underlines the importance of the nation's medical education system concentrating on communication skills training for medical professionals to implement more patient-centered treatment. People need to comprehend the need to adapt or alter their health behaviors, and this may happen through effective physician–patient communication which in turn would result in long-term benefits for the healthcare providers and hospital institutions.

Methods

Research hypothesis

To carry out this study, the following hypotheses have been developed:

H1: Physicians' gender has an impact on physician–patient communication.

H2: Physicians' age influences physician–patient communication.

H3: Physicians' ethnicity influences physician–patient communication.

H4: Physicians' spirituality influences physician–patient communication.

Data collection

An online survey was used to gather quantitative data on physicians' perceptions of communication with patients, their attitudes toward communication, and the factors that may affect their communication with patients. The survey was created using a web-based survey tool and was distributed to the respondents.

Survey instrument

This quantitative study employed questionnaire distribution presented in English which was done between March 1st and April 21st, 2022. All sections of the questionnaire were created using the Google forms application, taking about 10 min to complete. The responses were measured using a 5-point Likert scale ranging from strongly agree (5) to strongly disagree (1). The tested and validated questionnaire was adopted from research carried out in (5, 9, 10) on Doctor–Patient Communication in Healthcare Service Delivery. The first section included demographic information. The second comprised seven items aimed at evaluating the communication skills of physicians in the study area. The third part contained 16 items aimed at evaluating the factors that affect physician–patient communication. The last section with two items aimed at understanding physicians' perception of communication.

Participants

Participants in this study were practicing physicians in outpatient departments working in any public hospital in Lagos state for at least 3 years. Participants were recruited through the snowball sampling technique. The inclusion criteria were physicians who have experience in communicating with patients and who are willing to participate in the study. The sample size consisted of 335 physicians, but after the data collection period, 150 valid responses were obtained. It was observed that more than half of the participants were within the age group of 31–40 years (51.7%) with males accounting for 60% of the sample size. Despite the various ethnic groups represented, Yoruba accounted for 43.3% followed by Igbo (30.0%) and Hausa (15.0%). This concludes that the Yorubas are major residents of Lagos state. For religion, Christianity (53.3%) and Islam (41.7%) are majorly practiced in Nigeria.

Data analysis

Quantitative analysis was done using the SPSS version 25. The reliability of the questionnaire was determined using Cronbach's alpha which indicates whether the tests and scales created for the study are consistent (11). The validity of all variables was determined using bivariate correlation by comparing the correlation result of all items with that of the criterion measurement. Mann–Whitney U test and Kruskal–Wallis test were carried out to understand the relationship between the variables.

Results

Reliability analysis

Cronbach's alpha is the most often used measure of internal consistency and is regarded as a scale dependability indicator. A typical rule of thumb is that a reliability level of 0.70 or higher is considered suitable.

TABLE 1 | Reliability statistics of the variables.

Variables	Cronbach's alpha	No. of items
Physicians' communication skills	0.740	7
Problems affecting physician–patient communication	0.722	16
Perception on communication	0.778	2

TABLE 2 | Validity test.

Items	r	*p*-value	Items	r	*p*-value
1	0.636**	0.000	14	0.729**	0.000
2	0.580**	0.000	15	0.767**	0.000
3	0.335**	0.009	16	0.349**	0.006
4	0.663**	0.000	17	0.531**	0.000
5	0.304*	0.018	18	0.529**	0.000
6	0.746**	0.000	19	0.827**	0.000
7	0.684**	0.000	20	0.530**	0.000
8	0.027	0.836	21	0.582**	0.000
9	−0.093	0.478	22	0.641**	0.000
10	0.843**	0.000	23	0.294**	0.023
11	0.200	0.126	24	0.907**	0.000
12	0.161	0.218	25	0.902*	0.000
13	0.415**	0.001			

**Correlation is significant at the 0.01 level (two-tailed).
*Correlation is significant at the 0.05 level (two-tailed).

TABLE 3 | Physicians' communication skills.

Questions	Mean	SD
CS1	3.70	0.766
CS2	4.02	0.651
CS3	4.23	0.427
CS4	4.10	0.573
CS5	1.73	0.756
CS6	3.40	0.924
CS7	2.92	0.889

Table 1 shows the reliability analysis of three groups of variables. The values obtained for internal consistency fall within the acceptable range. Hence, the variables are reliable.

Validity test

To obtain a valid value, the obtained value must be greater than the critical value with a strong level of significance.

Based on the count values obtained in Table 2, all values were higher than the r table product moment of 0.2732, which implies validity. However, items 8, 9, 11, and 12 showed to be non-valid.

Physicians' communication skills

The result of evaluating the communication skills of physicians is shown in Table 3. This section received a quite positive feedback. A significant number of physicians agreed to have social talks with patients (M = 3.70, SD = 0.766). As regards listening intensely to patients, a mean value of 4.02 (SD = 0.651) was obtained, which implies a high level of listening skills among the physicians. On the use of medical jargon without explanation, a mean value of 1.73 (SD = 0.756) was obtained, indicating that the majority of participants made an effort to simplify medical terms while communicating with patients. When it comes to providing in-depth treatment information and possible side effects to patients, 60.0% of physicians agreed with a mean score of 3.40.

Problems affecting physician–patient communication

Table 4 shows the various factors that could affect communication between physicians and their patients. From the survey, most of the physicians disagreed with having communication difficulties with male and female patients, with mean scores of 2.30 and 2.28, respectively. It was evident from the responses that overly demanding patients negatively affect communication. At times when the patient becomes hostile and confrontational, it is advised for the physician to avoid getting defensive; 18.3% were neutral about avoiding every form of defensive behavior during consultations with patients, 56.7% agreed, and 25.0% strongly agreed. With a mean score of 3.73, a high number of participants agreed to teach patients about their bodies and situation (70.0%). A significant number of physicians believe that work overload can negatively affect communication with patients (M = 4.25, SD0 = 0.628). This may be a major reason for spending limited time during the consultation; 60.0% agreed that limited time negatively affects communication, while 30.0% strongly agreed. Physicians also agreed that poor workspace, excessive noise, and inadequate power supply could negatively affect physician–patient communication, with mean values of 3.97, 4.40, and 3.98, respectively. This shows the extent to which a conducive work environment affects communication; 51.7% agreed and 33.3% strongly agreed to treat patients with empathy and respect. Finally, most of the physicians disagreed with having communication difficulties based on their religion (M = 2.53, SD = 0.853).

Perception of communication

The general opinion of physicians on communication is shown in Table 5. The responses obtained were highly positive with high mean scores. Majority of the

TABLE 4 | Problems affecting physician–patient communication.

Questions	Mean	SD
P1	4.00	0.644
P2	2.83	0.960
P3	2.22	0.804
P4	3.73	0.899
P5	4.00	0.638
P6	4.20	0.605
P7	4.25	0.628
P8	3.97	0.663
P9	4.40	0.694
P10	3.98	0.676
P11	4.18	0.676
P12	2.53	0.853

TABLE 5 | Perception of communication.

Questions	Mean	SD
PC1	4.10	0.681
PC2	4.00	0.664

TABLE 6 | Hypothesis summary.

Hypothesis	*p*-value	Summary
H1	0.39	Supported
H2	0.012	Supported
H3	0.423	Not supported
H4	0.109	Not supported

respondents agreed that communication skills training would improve effective communication with patients ($M = 4.10$, SD = 0.681). This shows how crucial it is for hospital management to train medical staff in communication skills to promote effectiveness. They also agreed that effective communication with patients leads to better health outcomes and patient satisfaction ($M = 4.00$, $SD = 0.664$).

Hypothesis testing

Decision criteria: $p < 0.05$ is statistically significant.

H1

The obtained *p*-value ($p = 0.39$) was less than the agreed alpha risk of 0.05. This means that there is a significant difference between physicians' gender and physician–patient communication, which accepts the hypothesis.

H2

A significant difference between the physicians' age and physician–patient communication ($p = 0.012$) was shown. Hence, the alternative hypothesis is accepted.

H3

There is a non-significant difference between physicians' ethnicity and physician–patient communication ($p = 0.423$). Therefore, the hypothesis is not supported.

H4

The results revealed that there is a non-significant difference between physicians' religion and physician–patient communication. Hence, the hypothesis is not supported (**Table 6**).

Discussion

The health and safety of patients can be negatively impacted by communication barriers, which are frequently ignored in healthcare settings. The physician–patient relationship is the key axis around which the entire healthcare system revolves, and without it, no healthcare system can function properly. Physicians require information from patients to make proper diagnosis and develop an effective treatment plan, and patients need information about their condition as well as the rationale and procedures for treating it. Thus, effective communication is required for any healthcare system to function adequately.

The research findings revealed that most physicians had good communication skills. This is critical for building a meaningful and reliable relationship between physicians and patients. It is also helpful in dealing with stressful clinical encounters as it reduces both the physician's and the patient's aggravation in circumstances of emotional outbursts. It has also been proven to reduce workplace stress and boost job satisfaction.

A study conducted in (12) showed that unsuitable furniture, lack of ventilation, excessive noise, insufficient lighting, poor supervisor support, and limited workspace can all reduce physician productivity. From the study, virtually, all the participants agreed that effective physician–patient communication leads to increased patient satisfaction but factors such as overly demanding patients, limited consultation time, poor workspace, excessive noise, inadequate power supply, and work overload could negatively impact it. Medical disagreements are attributed to physicians' heavy workloads or patients' lack of medical literacy. Workload is a key cause of poor communication skills. This is in line with the findings of this study from the qualitative analysis of physicians' responses to major communication problems. In Nigeria, a physician in a teaching hospital may attend to 40–60 patients in a day

compared to 16 patients a day seen by American physicians where a specific time appointment system is practiced (13). Physicians only have so much time for each patient, and it might be difficult to offer a decent service in the time provided for consultations. Patients' lack of medical literacy exacerbates the problem, needing better communication skills on the part of physicians.

A correlation between physician's gender and physician–patient communication was shown. Research has shown that there may be differences in communication patterns between male and female physicians. Female physicians have been found to spend more time with patients, ask more questions, and provide more emotional support than male physicians (14). They engage in more active partnership behaviors, positive conversation, psychosocial counseling, psychosocial questioning, and emotionally oriented conversation. However, a mixed study conducted in (15) revealed that gender disparities were non-significant. The only exemptions were that female doctors were chastised more than male doctors when they made impersonal remarks. The frequency of gender similarities shows that both male and female patients value physicians' empathy, support, compassion, and cheerfulness and that these qualities appear to transcend gender differences.

An association between the physicians' age and physician–patient communication was also revealed. In line with this finding, a survey carried out on the knowledge and practice of Iranian family doctors on physician–patient communication showed a positive correlation between communication skills and higher age (16). Furthermore, a study evaluating the effect of physicians' age on communication with young patients (between the ages of 16 and 19 years) showed that 87% of the participants found it easier to establish contact with a younger doctor; 68.5% considered it more embarrassing to visit a senior doctor, while 88.9% found it easier to admit embarrassing situations to younger doctors.

In the study, the association between physicians' ethnicity and communication was shown to be non-significant. Contrary to this finding is one conducted in (17) in the United States which showed a significant difference between ethnic-concordant and ethnic-discordant physician–patient relationships on how patients rate the treatment quality they receive from physicians. The results of another contrary study carried out to investigate racial differences in physician–patient communication about mental health showed that patients and their physicians communicated twice as long. This increase in talk time was influenced by the physicians' ethnicity (18).

Lastly, a non-significant difference between physicians' religion and physician–patient communication was obtained. One reason the medical field appears to be disconnected from religion is that many healthcare providers have been trained to view things through the eyes of scientists throughout their education and medical practice. This viewpoint may compel healthcare providers to exclude religion from their healthcare plans. Once physicians are educated and informed about various religions in the world, they will be able to engage in useful conversations regarding religion with their patients and what that means for their individualized care (19). A meta-analysis on physician–patient communication about existential and spiritual needs in chronic non-malignant pain patients revealed that physicians' communication about these needs was given less importance and depended on the patients' motivation, except when physicians were keen on holistic care. Patient dissatisfaction with the physician's responsiveness to these demands was associated with increased pain and depression. The limitations for physicians in meeting these requirements were their tendency to focus on physiological aspects and to close further discussion of existential needs when questioned by patients. Good physicians are aware of their own beliefs and those of others. They believe that understanding the importance of religion, belief, and culture to patients and colleagues is optimal for patient welfare. Physicians' religious or cultural beliefs may play a crucial role in encouraging adherence to this effective practice (20).

In general, the findings highlight the importance of a patient-centered approach to healthcare delivery, with an emphasis on understanding and responding to patient needs and concerns. Strategies such as increasing patient education, enhancing physician training in communication skills, and improving the healthcare environment can all help to improve the quality of communication and ultimately enhance the overall patient experience.

Conclusion

Effective physician–patient communication is essential for providing high-quality healthcare services. The evaluation of factors influencing physician–patient communication revealed that several individual and contextual factors contribute to effective communication. Moreover, the use of technology and telemedicine in healthcare services has changed the communication landscape, and there is a need for healthcare providers to adapt to these changes to ensure effective communication with their patients. The implementation of interventions such as communication skills training for healthcare providers, patient education programs, and electronic health record systems could improve communication and ultimately improve patient outcomes. Healthcare organizations and policymakers should prioritize efforts to improve physician–patient communication by addressing the identified factors that influence communication and implementing evidence-based interventions to enhance communication between physicians and patients.

Limitations and future research

There was no recorded dialogue between physicians and patients in this study; therefore, it was impossible to determine what exactly influences physician–patient communication when diverse socioeconomic backgrounds are considered. Although the study looked at the relationship between physicians' gender and communication difficulties with male and female patients, further research on the impact of gender dyads on physician–patient communication is needed. Even though the study examined some of the factors that influence physician–patient communication, others include information technology, structural logistical restraints, and emotions of undervaluation and frustration. Further research is required to determine how these factors affect physician–patient communication.

Data availability statement

All data will be made available upon reasonable request.

Ethics statement

Informed consent was obtained from all the respondents participating in this study before the conduct of the study, and they were assured of the confidentiality of any information obtained from them. Participation was voluntary, and the right of individuals to refuse participation in the study was duly respected.

Author contributions

LN, GE, MY, EA, and RL were responsible for the conception and design of the study. GE and LN performed the data collection, data analysis, drafted the manuscript, and did the final drafting and arrangement of the manuscript. GE and MY supervised the study, contributed to the data analysis, and interpretation. All authors contributed to the critical revisions and approved the final manuscript.

References

1. Olohomeru G. Impact of effective health communication strategies in Nigerian health care delivery system. *EAS J Human Cult Stud.* (2019) 0958:284–7.
2. Aelbrech K, Hanssen L, Detollenaere J, Willems S, Deveugele M, Pype P. Determinants of physician; patient communication: the role of language, education and ethnicity. *Patient Educ Couns.* (2019) 102: 776–81.
3. Ha JF, Longnecer N. Doctor-patient communication; A review. *Ochsner J.* (2010) 10:38–43.
4. Leng C. *Communication Between the Healthcare Provider and People of Low SES "Application of the COM-B Model to Find Factors That Underlie Communicative Behaviour of Healthcare Provider*. Ph.D. Thesis. Wageningen: Wageningen University (2019).
5. Kattel S, Program G. *Doctor Patient Communication in Health Care Service Delivery; A Case of Tribhuvan University Teaching Hospital, Kathmand*. Ph.D. Thesis. Dhaka: North South University (2010).
6. Steffen NK, Munt KA, Van Knippeberg D, Platow MJ, Haslam SA. Advancing the social identity theory of leadership; A meta-analytic review of leader group prototypicality. *Organ Psychol Rev.* (2021) 11: 35–72.
7. Street RL, Malley KJ, Cooper LA, Haidet P. Understanding concordance in patient-physician relationships: personal and ethnic dimensions of shared identity. *Ann Fam Med.* (2008) 6:198–205.
8. Adebayo CT. Physician-patient interactions in Nigeria: a critical cultural perspective on the role of power. *J Intercult Commun Res.* (2021) 50: 21–40.
9. Sustersic M, Gauchet A, Kernou A. A scale assessing doctor-patient communication in a context of acute conditions based on a systematic review. *PLoS One.* (2018) 13:e0192306. doi: 10.1371/journal.pone.0192306
10. Sun N, Rau LP. Barriers to improve physician patient communication in a primary care setting: perspectives of Chinese physicians. *Heal Psychol Behav Med.* (2017) 5:166–76.
11. Taber KS. The use of Cronbach alpha when developing and reporting research instruments in science education. *Res Sci Educ.* (2018) 48: 1273–96.
12. Edem MJ, Akpan EU, Pepple NM. Impact of workplace environment on health workers. *Occup Med Heal Aff.* (2017) 5:261.
13. Ajayi IO. Patients waiting time at an outpatient clinic in Nigeria; can it be put to better use? *Patient Educ Couns.* (2002) 47:121–6.
14. Hall JA, Blanch-hatigan D, Roter DL. Patients satisfaction with male versus female physician: a meta analysis. *Med Care.* (2018) 49:611–7.
15. Mazzi MA, Rimondini M, Devegele M, Zimmermann C, Deledda G, Bensing J. Does gender matter in doctor patient communication during standard gynaecological consultations? An analysis using mixed methods. *Commun Med.* (2014) 11.
16. Shiraly R, Mahdaviazad H, Pakdin A. Doctor-patient communication skills: a survey on knowledge and practice of Iranian family physicians. *BMC Fam Pract.* (2021) 22:130. doi: 10.1186/s12875-021-01491-z
17. Dacre J. Are there too many female medical graduates? No. *BMJ.* (2008) 336:749–749.
18. Foo PK, Frankel RM, Maguire TG, Zaslavsky AM, Lafata JE, Tai-Seale M. Patient and physician race and the allocation of time and patient engagement efforts to mental health discussions in primary care: an observational study of audiorecorded periodic health exams HHS public access. *J Ambul Care Manag.* (2017) 40:246–56.
19. Klitzman R. Doctor, will you pray for me? Responding to patients religious and spiritual concerns. *Acad Med.* (2021) 96:349–54.
20. Hordern J. Religion and culture. *Medicine.* (2016) 44:589–92.