ORIGINAL ARTICLE

Oman Medical Journal [2025], Vol. 40, No. 2: e733

Evaluating Physicians' Experiences and Compliance with the SPIKES Protocol for Communicating Adverse News: A Cross-sectional Study Conducted in Muscat, Oman

Noor Al Omrani[1]*, Sahar Al Omrani[1], Rahma Al Kindi[2], Badriya Al Farsi[3] and Buthaina Al Mahrezi[4]

[1]Family Medicine Residency Training Program, Oman Medical Specialty Board, Muscat, Oman
[2]Department of Family Medicine and Public Health, Sultan Qaboos University Hospital, Muscat, Oman
[3]Department of Primary Healthcare, Military Medical City, Muscat, Oman
[4]Ministry of Health, Muscat, Oman

ARTICLE INFO

Article history:
Received: 20 September 2024
Accepted: 12 March 2025

Online:
DOI 10.5001/omj.2025.62

Keywords:
Communication; Empathy; Education, Attitude; Physicians; Surveys and Questionnaires; Oman.

ABSTRACT

Objectives: This study aimed to assess the knowledge, attitudes, and experiences of physicians in delivering bad news and their adherence to the SPIKES protocol within the Directorate General of Health Services (DGHS) in Muscat, Oman. ***Methods***: A cross-sectional study was conducted from December 2023 to June 2024 at primary healthcare centers in Muscat. Data were collected through an online self-administered questionnaire completed by physicians at these centers. ***Results:*** A total of 140 physicians completed the questionnaire (response rate = 100%). The vast majority of participants (n = 133, 95.0%) recognized the importance of training in breaking bad news and expressed a willingness to attend future training sessions. Nearly half of the participants (n = 67, 47.9%) reported negative experiences due to improper delivery of bad news. Overall, adherence to the SPIKES protocol was categorized as low (n = 2, 1.4%), medium (n = 25, 17.9%), and high (n = 113, 80.7%). No significant associations were found between adherence levels and any sociodemographic or clinical characteristics. ***Conclusions:*** Physicians in primary care face challenges in delivering bad news, which are influenced by cultural factors, training, and adherence to protocol. These challenges can be mitigated through regular, targeted training programs, beginning at the undergraduate level and continuing throughout a physicians' careers.

The growing emphasis and advances of patient-centered approaches (as opposed to traditional hierarchical models of healthcare) have been highlighted over the past two decades. This field has witnessed significant conceptual shifts and new considerations for health practitioners regarding the quality of medical encounters and patient satisfaction.[1,2] Thus, the role of the communication process in physician-patient interaction is acknowledged as a cornerstone in this model of healthcare, as well as being an essential skill and part of clinical competence.[1,3] Undoubtedly, the process of breaking bad news (BBN) constitutes an inevitable sensitivity, even traumatizing, among physicians and patients alike, as BBN comprises an integral duty for many physicians.[1] Buckman described bad news as "any news that drastically and negatively alters the patient's view of her or his future." Most of the bad news is conveyed in the message, as it informs and impacts the patients, prompting them to adapt and face difficult futures.[4] Examples of such messages include, but are not limited to: a) informing a patient that they have tested positive for HIV; b) informing a patient that they have neurological degenerative diseases such as Alzheimer's or Parkinson's disease; and c) informing a patient that a tumor is malignant. In addition, bad news delivery includes disease recurrence, treatment failure, disease spread, irreversible side effects, or the diagnosis of any other life-altering disease.

Proper training of communication skills is a unique process, as they vary according to region and culture.[3] This can be observed in many studies in Western countries, which have shown that truth-telling-centered strategies are supported by evidence of benefits in various aspects of patients' lives, including quality of life.[5] On the other hand, other societies and cultures with a high level of family involvement are

*Corresponding author: ✉noo0oo0r@hotmail.com

opposed to diagnosis disclosure directly to patients, such as Spain, Greece, China, Singapore, Japan, Saudi Arabia, and Korean and Mexican Americans in the USA.[6] Similarly, in nearby countries such as Saudi Arabia, which has a comparable culture to the Sultanate of Oman, some physicians find themselves unable to provide complete information to a terminally ill patient about their condition, usually because of family issues and other factors.[7]

This disparity between different approaches to truthful telling leads to stressful experiences while BBN and the necessity of adequate training, as reported by many authors.[8] Moreover, requests for nondisclosure are common, and they lead to considerable distress for physicians who are used to an autonomy-focused approach. It is the patient who ultimately has the right to decide how they want to exercise autonomy about their illness.[9]

The setting, perception, invitation, knowledge, empathy, and summarize or strategize (SPIKES) protocol is widely recognized as a key framework for training communication skills in the delicate task of delivering bad news, particularly in the context of cancer care.[8,10] It outlines six essential steps for this process and has been assessed in various countries, including the US and Germany.[11,12] The initial step, referred to as the setting up phase, emphasizes the importance of creating a private and comfortable environment for the conversation. The second step involves gauging the patient's understanding of their illness through open-ended questions. The third step invites the patient to express their desire for information regarding their condition. The fourth step, known as knowledge, encompasses all relevant details about the diagnosis. The fifth step focuses on emotion, where the healthcare provider demonstrates empathy and acknowledges the patient's feelings while offering support. Finally, the last step involves summarizing the information related to treatment options and prognosis, ensuring the patient has a clear understanding of their situation.[13,14]

These guidelines are widely regarded as effective for communicating unfavorable news and addressing critical matters, despite a lack of robust scientific evidence to support them. Our study sought to evaluate how well doctors follow the SPIKES protocol when delivering bad news, investigate their knowledge, attitudes, and experiences related to this process in Oman, assess the application and compliance with the SPIKES protocol among physicians across various specialties and healthcare institutions in Oman, and examine the training opportunities available as well as the interest of physicians in enhancing their skills in delivering bad news.

METHODS

This self-administered questionnaire-based descriptive cross-sectional study was conducted among physicians working under the Ministry of Health (MOH). The study involved 30 local health centers under the Directorate General of Health Services (DGHS) in Muscat. The questionnaire assessed their compliance with the SPIKES framework for delivering unfavorable news. The data collection was conducted over a period of seven months, from December 2023 to June 2024. The study targeted all the doctors practicing in all primary healthcare centers at DGHS-Muscat (general practitioners, medical officers, family medicine residents, specialists, senior specialists, consultants, and senior consultants). Exclusion criteria include doctors who have no direct contact with patients and those on long leaves (i.e., maternity, study leaves, etc.).

An online self-administered survey, utilizing Google Forms (Google LLC, Mountain View, California, USA), was distributed through various platforms, including the national MOH electronic portal Al Barwah, as well as via emails and WhatsApp messages, in addition to visiting doctors at primary health centers across the Muscat governorate. The questionnaire was disseminated following the ethical approval granted by the Health Studies and Research Approval Committee (HSRAC) of the MOH in Oman, as well as obtaining authorization from DGHS-Muscat for its distribution. Participation is voluntary and anonymous, and a written informed consent was obtained before filling out the questionnaire. All participants were informed about the study objectives and that they had the right to withdraw at any time. Confidentiality was both assured and stressed. Each participant was allowed only one electronic response.

A validated and systematically organized questionnaire was employed for data collection. An English version of the survey, previously utilized in earlier studies, is available.[15,16] The questionnaire comprised five primary sections, beginning with the sociodemographic section that collects personal details from participants, such as age, sex, qualifications, and years of experience. The second section focused on

physicians' knowledge and experience regarding the delivery of bad news, featuring nine items assessed on a three-point Likert scale (usually, sometimes, and never). The third section included six items aligned with the SPIKES model for delivering bad news. The fourth section addressed physicians' perspectives on BBN, consisting of 25 items. The final section explored the obstacles encountered in delivering bad news.[16]

The sample size was estimated to be 140, derived from the total number of doctors in primary healthcare within the DGHS in Muscat. This estimate included a 5% margin of error and a 95% confidence level. Data analysis was conducted using SPSS (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.). Categorical variables were presented as frequencies and percentages, while continuous variables were expressed as means ± SDs. The relationships between independent and outcome variables were assessed using an independent sample *t*-test and the chi-square ($\chi 2$) test. A *p*-value of ≤ 0.05 was deemed statistically significant.

RESULTS

A total of 140 physicians working in primary healthcare facilities in the Muscat governorate completed the questionnaire. Among these respondents, 14 (10.0%) were male and 126 (90.0%) were female, with an average age of 35.0 ± 10.0 years and age range of 24–55 years. Notably, the majority (78.6%) were aged ≤ 40 years. The largest group consisted of residents (37.1%), followed by house officers (22.1%), specialists (8.6%), senior specialists (5.7%), consultants (3.6%), and senior consultants (2.1%). The average work experience among the participants was 10.0 ± 9.0 years, with a range of 1–30 years [Table 1].

A significant proportion (95.0%) reported having prior experience delivering bad news. Among them, 97 (69.3%) had received education or training in this topic. The majority agreed that training is necessary to cultivate the essential skills for delivering bad news (95.0%) and expressed willingness to attend future training (95.0%).

Nearly half of the participants (47.9%) acknowledged encountering negative experiences due to inadequate delivery of bad news. Additionally, 34 (24.3%) participants admitted to initially informing the patient's family without the patient's consent, despite 110 (78.6%) believing that bad news should be communicated directly to the patient. A minority (14.3%) admitted to conveying bad news over the phone rather than in person [Table 2].

Table 1: Demographic characteristic of physicians (N = 140).

Variables	n (%)
Sex	
Male	14 (10.0)
Female	126 (90.0)
Age, years	
24–40	110 (78.6)
41–55	30 (21.4)
Marital status	
Single	30 (21.4)
Ever married	110 (78.6)
Clinical position	
House officer	31 (22.1)
Intern	2 (1.4)
General foundation program	7 (5.0)
Resident	52 (37.1)
Specialist	12 (8.6)
Senior specialist	8 (5.7)
Consultant	5 (3.6)
Senior consultant	3 (2.1)
Other	20 (14.3)
Years of experience	
1–10	91 (65.0)
> 10	49 (35.0)
Qualifications	
Bachelor's degree	16 (11.4)
Board exams	22 (15.7)
Fellowship	2 (1.4)
Medicine doctor	92 (65.7)
Memberships	8 (5.7)

Adherence to the SPIKES protocol was generally high, with 55.7–84.3% of participants usually following each step. However, 15.0–37.9% reported following some steps only sometimes, and 0.7–6.4% reported never following specific steps [Table 3]. The mean SPIKES adherence score was 10.1 ± 2.0, with a range of 3–12 and a median of 11.0. A perfect score was achieved by 44 (31.4%) physicians [Table 4].

In terms of adherence levels, 113 (80.7%) participants showed high adherence, 25 (17.9%) showed medium adherence, and two (1.4%) showed low adherence [Table 5]. No significant associations were found between SPIKES adherence and sociodemographic characteristics [Table 6].

Table 2: Responses related to knowledge, training, and experience (N = 140).

Item	Yes (%)	No (%)
1. Have you ever received any education/training for breaking bad news?	97 (69.3)	43 (30.7)
2. Do you feel that training is needed for adequate skill development in breaking bad news?	133 (95.0)	7 (5.0)
3. Are you willing to attend training regarding breaking bad news in the future?	133 (95.0)	7 (5.0)
4. Have you ever broken bad news to patients or patients' family?	133 (95.0)	7 (5.0)
5. Did you have any bad experiences due to improperly breaking bad news?	67 (47.9)	73 (52.1)
7. Do you believe that the bad news should be delivered directly to the patients?	110 (78.6)	30 (21.4)
8. Have you ever broken bad news to patients' family without the patient's consent?	34 (24.3)	106 (75.7)
9. Have you ever broken bad news to patients' over the phone?	20 (14.3)	120 (85.7)

Table 3: Participant's adherence to SPIKES protocol (N = 140).

Item	Never n (%)	Sometimes n (%)	Usually n (%)
1. S. Do you set up (plan) the interview for the patient to feel comfortable and maintain privacy?	9 (6.4)	53 (37.9)	78 (55.7)
2. P. Do you assess the patient's perception (what he already knows) about the condition?	3 (2.1)	33 (23.6)	104 (74.3)
3. I. Do you obtain the patient's invitation (ask him what they want to know)?	9 (6.4)	47 (33.6)	84 (60.0)
4. K. Do you give information (knowledge) to the patient about their condition?	1 (0.7)	21 (15.0)	118 (84.3)
5. E. Do you assess the patient's emotions with emphatic responses?	3 (2.1)	31 (22.1)	106 (75.7)
6. S. Do you explain the future strategies including treatment options and prognosis?	2 (1.4)	23 (16.4)	115 (82.1)

S: setting; P: perception; I: invitation; K: knowledge; E: empathy; S: summarize or strategize.

Table 4: Participant's SPIKES protocol scores (N = 140).

SPIKES score	n (%)
3	1 (0.7)
4	1 (0.7)
6	10 (7.1)
7	7 (5.0)
8	8 (5.7)
9	14 (10.0)
10	21 (15.0)
11	34 (24.3)
12	44 (31.4)

SPIKES: setting, perception, invitation, knowledge, empathy, and summarize or strategize.

Table 5: SPIKES adherence categories (N = 140).

SPIKES score category	n (%)
Low adherence (< 6)	2 (1.4)
Medium adherence (6–8)	25 (17.9)
High adherence (≥ 9)	113 (80.7)

SPIKES: setting, perception, invitation, knowledge, empathy, and summarize or strategize.

DISCUSSION

For medical professionals, frequently engaging with patients to break bad news is a crucial communication skill.[17,18] It is one of the most challenging tasks for doctors, and in the field of clinical medicine, there are minimal opportunities for doctors to develop this skill.[19] According to a global survey of doctors employed in hospitals across five continents and 40 countries, only 33.4% had received formal training in BBN to patients.[20] Despite having less formal training in this area, younger practitioners and those with fewer years of experience were more likely to be involved in BBN to patients.[20] Nonetheless, a recent meta-analysis of qualitative studies examining the experiences of healthcare professionals in delivering such news highlighted how emotionally taxing this role is, sometimes leading to discomfort and relational anxiety.[21] According to other research, BBN can result in a physiological stress reaction as well as emotions of concern, guilt, exhaustion, failure, and dissatisfaction.[22,23]

The aim of this study was to investigate the ability of physicians to deliver bad news to patients in

Table 6: Association between SPIKES adherence and demographic characteristic (N = 140).

Variables	Low or medium adherence (n = 27)	High adherence (n = 113)	*p*-value
Sex			
Male	3 (11.1)	11 (9.7)	0.734
Female	24 (88.9)	102 (90.3)	
Age, years			
≤ 40	20(74.1)	90 (79.6)	0.602
> 40	7 (25.9)	23 (20.4)	
Marital status			
Single	6 (22.2)	24(21.2)	1.000
Ever been married	21 (77.8)	89 (78.8)	
Clinical position			
House officer	3 (11.1)	28 (24.8)	0.161
Resident	15 (55.6)	37 (32.7)	
Specialist	3 (11.1)	9 (8.0)	
Senior specialist	2 (7.4)	6 (5.3)	
Consultant	1(3.7)	4 (3.5)	
Senior consultant	1 (3.7)	2 (1.8)	
Years of experience			
1–10	17 (63.0)	74 (65.5)	0.825
> 10	10 (37.0)	39 (34.5)	
Qualifications			
MD/MBBS	22 (81.5)	94 (83.2)	0.782
Board/Fellowship	5 (18.5)	19 (16.8)	

SPIKES: setting, perception, invitation, knowledge, empathy, and summarize or strategize; MD: medical doctor; MBBS: bachelor of medicine and bachelor or surgery.

primary care facilities in Muscat Governorate, Oman. In the current research, 95.0% of the practitioners who responded to the study reported having previously received training on how to deliver bad news to patients. These results show an increased integration of pertinent training in this field into medical school instruction, which aligns with research conducted in Egypt and Brazil.[24,25] It is important to note, though, that medical schools usually place more emphasis on imparting medical knowledge than on helping students develop their practical communication skills. Although the current study's participants were familiar with the fundamentals of delivering uncomfortable health information, several were unaware that their usual methods for BBN to patients followed a specific protocol.

It is not uncommon for physicians to give bad news in an inappropriate manner. In the present research, 47.9% of the questioned doctors reported unpleasant experiences, which is in line with results from an earlier study conducted in Nigeria, Korea, and Sudan.[26–28] A lack of training and knowledge is frequently the root cause of this problem. For a long time, global medical school curricula have ignored the importance of effective communication in BBN. It has only recently been acknowledged that teaching these skills is an essential part of a doctor's education.[29] Nevertheless, it is important to understand that education is insufficient on its own and that further training is needed.[30] In addition to reducing the anxiety associated with the job, proper training in BBN increases a doctor's self-confidence and effectiveness.[31,32]

In the Farber et al,[33] study, 63% of physicians had seen a deadly condition in a family, and 17% had personally encountered a terrible disease. This study found that personal experience with life-threatening diseases was significantly associated with enhanced emotional support. Having a dangerous sickness in oneself or a close relative was associated with increased emotional support while reporting unpleasant news.[34] In the present research project, the vast majority of respondents (95.0%) believed that training is necessary to develop adequate skills in BBN. This finding is consistent with research conducted in Sudan, where 94.8% of the participating physicians shared similar mindset.[26]

Patients are significantly impacted by social and cultural factors, which frequently overshadow professional considerations.[35,36] Notably, family participation in medical decision-making differs significantly between Eastern and Western cultures. Individualism values personal autonomy in Western nations, whereas collectivism values familial relationships and communal harmony in Eastern cultures.[37] Additionally, family members' healthcare preferences are greatly influenced by their cultural and religious views, with decisions being made in accordance with customs and shared values.[38] Significant family involvement in healthcare decision-making has been validated by earlier studies conducted in Oman, which sometimes involves keeping the patient unaware of the diagnosis itself.[39,40]

Cultural influences can sometimes outweigh professional considerations; perhaps this was the motivation for sharing patient information with family rather than with the patient. Cultural considerations may have a significant impact on decision-making when it comes to imparting terrible news. Cultures with strong family relationships and largely patriarchal

households, such as Omani culture, tend to delegate decision-making to elders without regard for rights or confidentiality. Doctors must follow cultural conventions. The dilemma is exacerbated by a lack of training in delivering unpleasant news. It makes the physician more vulnerable to uncomfortable situations and increases the likelihood of sharing patient-related information with family or relatives without the patient's permission. This dynamic could help to explain why 24.3% of respondents acknowledged giving a patient's relatives direct access to private information without the patient's consent.

According to a study done in Saudi Arabia, a country neighboring Oman, 70% of physicians preferred to share information with close family members rather than with patients. In addition, 32% admitted to telling the patient's family members about critical illnesses without permission.[35] Conversely, studies conducted in Sudan and Egypt revealed that a greater percentage of respondents favored sharing bad news with the patient's family (34.4% and 59.2%, respectively).[26,28] In the current study, 78.6% of participants acknowledged the importance of patient anonymity and autonomy, which supports the truthful sharing of sad news with them.

Because family unity is highly prized in Omani society, some doctors deliver bad news to the patient's family directly, disregarding the patient's stated rights. Royal Decree 75/2019 specifies standards for practice in several medical specialties.[41,42] According to Article 12 of this decree, a doctor must inform a patient about the type and severity of their illness.[42] However, if this is not in the patient's best interest – for instance, if the patient is too sick or disabled to fully comprehend their circumstances — a second-degree family member must receive the information. To safeguard patients' rights to safety, autonomy, and confidentiality, as well as to protect medical professionals from accountability, medical laws must be followed. Notably, when it comes to child health situations, medical professionals usually must inform the family directly of any upsetting information because the child is legally considered a minor and hence unable to make their own healthcare decisions.

Between 55.7–84.3% of respondents stated that they usually followed each of the six SPIKES process phases, indicating a high level of overall adherence to the SPIKES practice in the current study. However, several studies found that different parts of the regimen have differing percentages of adherence. For instance, only 35–79% of Sudanese physicians in a research study adhered to every step of the SPIKES procedure.[26] According to another study of Korean physicians, 80% thought they were effectively using the SPIKES strategy when BBN to their patients.[27] The current study did not discover any meaningful connections between adherence to the SPIKES methodology and most of the clinical or sociodemographic characteristics of the participants, including age, years of work experience, and gender. These results align with studies conducted at university hospitals in Oman, Sudan, Saudi Arabia, and Egypt, which also failed to find any meaningful correlations with these traits.[16,26,28,35]

The fact that this study is the first to examine physician practices and compliance with the SPIKES protocol for delivering unpleasant health information to patients at basic healthcare institutions in the Muscat Governorate, Oman, is one of its main advantages. Nonetheless, it is important to acknowledge certain noteworthy limitations. First, sampling bias could result from the low response rate. Second, because the questionnaire was self-administered the findings may have been influenced by respondents' memory recall biases and social legibility. Third, proving temporality is impossible due to the cross-sectional study design. Fourth, strict adherence to the SPIKES procedure is not always necessary in every clinical context; it is intended to assist physicians in understanding the important steps to take when delivering bad news to patients. Lastly, the results of this study can only be applied to the entire community because it was carried out at the primary level in the Muscat Governorate, Oman. A bigger sample size and physicians from a range of Oman's hospitals and health centers, as well as from all medical specializations and care levels, should be included in future multi-center studies.

CONCLUSION

Breaking unpleasant news is a vital skill for doctors, as it impacts patients' trust in their doctors as well as their adherence to medical management directions. Communication skills should receive significant attention in medical curricula. The findings of this study indicate that physicians' capacity to deliver bad news is inadequate in some circumstances, despite the overwhelming majority of the questioned doctors having undergone prior education on BBN.

Similarly, a sizable proportion admitted to releasing health information to the patient's family without permission. As a result, training courses throughout physicians' education and after graduation are recommended to enhance patient trust while reducing physicians' concerns and discomfort in challenging scenarios, including delivering undesirable information. Furthermore, frequent refreshing and continuing professional development for doctors from various medical specialties and at all stages of their careers are essential to strengthen these skills, so that they may confidently break bad news for better healthcare delivery.

Acknowledgement

The authors would like to express their sincere gratitude to those who have supported and contributed to this research, as well as to all the doctors who participated and generously gave their time and efforts. Special thanks to Dr. Mayada Al Kiyumi, Dr. Buthaina Al Mahrazi, Dr. Fatma Al Sharqi, and Dr. Maryam Al Fannah Al Arimi for their assistance in distributing the questionnaire, which significantly aided in the research process.

Disclosure

The authors declare no conflicts of interest. No funding was received for this study.

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