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Breaking bad news: a cross-sectional study assessing SPIKES protocol adherence and other methods employed among medical doctors in Nigeria

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Abstract

Background The SPIKES (Setting, Perception, Invitation, Knowledge, Empathy, and Strategy) protocol has been widely used in many developed countries for breaking bad news (BBN), however, serious uncertainty remains in its understanding and implementation in many developing nations. This study aims to assess adherence to SPIKES protocol and its associated factors, in addition to exploring alternative techniques used to BBN among medical doctors in Nigeria.

Methods A cross-sectional study was conducted in Ekiti State, Nigeria among 245 medical doctors selected through a systematic sampling technique in May, 2024. A semi-structured questionnaire, adapted from a previous study was used to collect information on biodata, practice of SPIKES protocol, and an open-ended question that asked how the respondents break bad news. Frequencies, logistic regression, and content analysis (for the open-ended question) were conducted.

Results Overall, 178 (72.7%) doctors fully adhered to the SPIKES protocol with Settings (98.4%), Perception (93.9%), Invitation (76.7%), Knowledge (99.2%), Empathy (98.0%) and Strategy (98.4%). Clinical position($p=0.002$) and education or training($p=0.034$) were significant on bivariate. Predictors of full SPIKES adherence were doctors at public tertiary (AOR = 0.132; 95%CI = 0.029–0.600) and public secondary/primary health facilities (AOR = 0.079; 95%CI = 0.012–0.502) than those in private health facilities; doctors that are pediatricians (AOR = 0.109; 95%CI = 0.023–0.515) than the general practitioners. Content analysis shows many doctors adopt the full SPIKES protocol, use different aspects of it (SPIKES variants viz the Knowledge and Empathy (KE), Setting and Knowledge (SK), and the Setting,

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Knowledge, and Empathy (SKE)), some use no specific protocol, adopt the religious/spiritual approach, and other (Blunt, Diplomatic and BATHE) methods/Approaches.

Conclusions Achieving consistent BBN practice requires continuous training and more support as shown by variability in adherence influenced by factors such as training and education, healthcare facility, and specialty.

Keywords Breaking, Bad news, Medical doctors, Nigeria, SPIKES, Protocol, Practice

Introduction

Bad news, according to Buckman, is "any information which adversely and seriously affects an individual's view of his or her future" [1, 2]. Such information frequently includes undesirable situations, ranging from receiving a new diagnosis or encountering a medical error to loss through death [3]. An estimated 55 million people die annually from natural and unnatural causes [4]; A busy physician may therefore, on numerous occasions over the course of their career, communicate such inherently distressing medical information, often likened to dropping a bomb, to patients or their families [1].

Generally, Breaking Bad News (BBN) entails multifaceted communication [5, 6]. Apart from the explicit act of conveying the message itself, it requires additional abilities such as dealing with patients' emotional responses, involving them in decision-making, managing the stress arising from their hopes for recovery, accommodating multiple family members, and navigating the challenge of inspiring hope amidst grim circumstances [6, 7]. As a result, BBN is consistently challenging, even for individuals accustomed to confronting it regularly, such as healthcare professionals. This task becomes even more herculean when those responsible lack the necessary expertise and when cultural, religious, and socioeconomic factors influence how patients and their families deal with adverse information [5].

Studies have shown that in many developing countries, medical education emphasizes technical prowess over communication skills, resulting in physicians being deficient in effective interaction with patients [8, 9]. Consequently, they often neglect patients' emotions and lack adequate training in BBN, despite available protocols [8, 9]. For instance, a hospital-based study in North Sudan found that 74% of house officers, medical officers, and registrars were unaware of the global policy regarding BBN, and 54% had not undergone any training on the subject [10]. Similarly, another study among healthcare workers in Nigeria revealed that about 4 out of 5 participants were not aware of a protocol for BBN [11].

Efforts to enhance the capacity of medical practitioners to break bad news are longstanding, as evidenced by various initiatives and protocols implemented across diverse settings [5]. One of the most widely recognized tools worldwide, which has shown effectiveness in this regard, is the SPIKES protocol devised by Buckman [1, 5, 9, 10]. The SPIKES protocol outlines six steps for delivering difficult news effectively. Firstly, "S" for setting up involves preparing a private and welcoming environment to establish rapport. Next, "P" for perception uncovers the patient's existing knowledge."I" for invitation gauges their readiness to discuss concerns. "K" for knowledge conveys information simply. "E" for empathy addresses showing emotional support. Lastly, "S" for strategy suggests treatment, prognosis and summarizes key points to ensure understanding [1, 5, 9, 10].

Other common methods/protocols that have been used in BBN include the"SIR-PRESS"protocol which is a proposed method for communicating difficult news to patients and their families respectfully and persuasively [12], the CONNECT protocol aimed at communicating with patients remotely, and the PACIENTE protocol which was adapted from the SPIKES protocol for the use by Brazilian physicians. Additionally, there is the ABCDE mnemonic by VandeKieft (which involves Advanced preparation, Building relationship with patients, Communicating well, Dealing with patients and relatives' reactions, and Encouraging and validating Emotions), Kaye's 10-step model, PEWTER or EMPATHY protocols, the dialectic method, and the "In Person, In Time" death notification procedure or the GRIEVING protocol [5, 12–14].

The SPIKES protocol has been extensively used in many developed countries over the years for BBN including in oncology, human immunodeficiency virus patients, individuals undergoing chronic dialysis, informing a mother of fetal demise, and patients with spinal cord injuries [15]. Despite numerous articles and theories addressing this topic, significant uncertainty remains in its understanding and implementation in many developing countries, including Nigeria, due in part to outdated and insufficient data [11, 15]. Furthermore, in recent times, there has been an incessant rise of assaults on medical doctors in Nigeria, and this has been partly due to the delivery of bad news especially following patients' demise [16]. Given the foregoing, this study seeks to address the identified gap by assessing the SPIKES protocol adherence in BBN, its associated factor as well as exploring alternative methods and protocols utilized in BBN among medical doctors in Nigeria.

Methods

Study design and area

This cross-sectional study was conducted in Ekiti State, Nigeria in May, 2024. The State is one of the 36 states of Nigeria located in the southwestern part of the country and has approximately 500 medical doctors serving about 3.5 million people. The State boasts of a federal teaching hospital, a state university teaching hospital, three state specialist hospitals, 18 general hospitals, several primary health centers, and private hospitals where the majority of the medical doctors practice and offer clinical patient care. Also, a few of them work in health ministries, government agencies, and non-government organizations in different roles and capacities.

Participants, sample size, and sampling technique

This study included all medical doctors who have been practicing in Ekiti State for at least 3 months. Three months was chosen as it is assumed to be enough for a medical doctor to encounter clinical situations warranting BBN. Those who do not have direct contact with patients such as medical doctors in laboratory medicine, health ministries, and management cadre were excluded. In addition, medical doctors on leave of absence during the study period were excluded.

A minimum sample size of 243 was estimated using the formula for estimating sample size for the single population proportion, assuming a 50% adherence to SPIKES protocol (previous adherence is unknown), a 95% confidence interval, 5% margin of error, correction for sample size in a finite population < 10,000, and 10% adjustment for anticipated non-response rate [17]. This was rounded up to 245 and a total of 245 completed questionnaires were retrieved and analyzed for the study.

A systematic sampling technique was used to select eligible medical doctors from the list of medical doctors in the State. This list was obtained from the Nigeria Medical Association and this was used as the sampling frame. A sampling interval of two was obtained after dividing the sampling frame of 500 medical doctors by the calculated sample size of 245. This sampling interval of two was used during the sampling process and the first respondent was selected by balloting. The subsequent respondents were selected by adding the sampling interval until the needed sample size was attained. Selected eligible respondents were contacted and visited at a convenient location by a member of the research team where the questionnaires were administered.

Study instrument

A pre-tested self-administered semi-structured questionnaire, adapted from a previous study was used for data collection [2]. The questionnaire collected information on socio-demographic characteristics, training or education and experience on BBN, awareness of SPIKES protocol, adherence to SPIKES protocol, as well as an open-ended question that asked how the respondents break bad news. For the open-ended question, the respondents were given space for about 500 words to express themselves in writing.

A clinical epidemiologist, psychiatrist, internal physician, and surgeon appraised the study instrument for face and content validity. Pre-testing was done among medical doctors in Omu-Aran, Kwara State, a cosmopolitan town that is located in a different State from the study population area that required about 2 to 3 h' drive from Ekiti State. Necessary corrections were made thereafter, which subsequently enhanced reliability of the research tool.

There were 6 questions on the practice of BBN using the SPIKES protocol and these questions were answered with a "Yes" or "No" option. Each question tests each step of the protocol – Setting, Perception, Invitation, Knowledge, Empathy, and Strategy. A right option was assigned 1 and a wrong option was assigned 0. A respondent with a score of 6 was said to have a "full adherence" to the SPIKES protocol while those with a score of ≤ 5 had "incomplete adherence".

The questions on training, experience and awareness of SPIKES protocol were also answered with a "Yes" or "No" option. However, these were analyzed individually as categorical variables.

Study outcome

The dependent variable was training, experience, awareness and adherence to SPIKES protocol while the independent variable included the socio-demographic characteristics.

Data analysis

Computer software IBM SPSS (IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp) was used to clean and analyze the collected data. Categorical data were summarized using frequencies and percentages while numerical data were summarized using median and range as well as mean and standard deviation. The chi-square test was deployed to determine the association between adherence to BBN using the SPIKES protocol and independent variables. Multivariate logistic regression analysis was conducted to identify predictors of full adherence to the SPIKES protocol among the respondents using the "Enter" method in SPSS. The multivariate logistic regression model included the variables with p-value < 0.2 following the chi-square test of association. The dependent variable for the model was adherence to SPIKES protocol, while clinical position, type of

health facility, specialty, feel competent about BBN, education/training, and awareness were the six independent variables included in the model. Adherence to SPIKES protocol is a dichotomous outcome variable with "full adherence" coded 1 and "incomplete adherence" coded 0. The significance level was determined at p-value < 0.05 for both bivariate and multivariate analyses.

The open-ended question that asked about how the respondents break bad news was analyzed using qualitative content analysis to explore how the respondents break bad news, focusing on the use of the SPIKES protocol, alternative strategies or none whatsoever. The steps taken include: firstly, *data collection*: Responses to an open-ended question on BBN were collected from medical doctors. Secondly, *coding*: A coding scheme based on the predetermined SPIKES protocol and emerging themes was developed and applied to the data. Thirdly, *theme identification*: Themes and patterns were identified, including use of SPIKES, deviations, and alternative strategies. Fourthly, *counting*: Counting of the frequency of recurring themes and patterns was done and analyzed to understand how medical doctors break bad news. These were subsequently presented in tables and prose with some verbatim quotes.

Ethical consideration

Ethical approval (ERC/2024/05/08/1102 A) for this study was obtained from the Human Research and Ethics Review Committee of the Federal Teaching Hospital, Ido-Ekiti, Nigeria. Written informed consent was obtained from all the respondents. Confidentiality was assured by using anonymous questionnaires, also name or code tagging of the questionnaire was duly avoided, and cross-interference among respondents was prevented as the research tool was administered to one doctor per time during data collection. Furthermore, the data was kept secured in an electronic computer that is password-protected, the password was known only to the principal investigator. The research was conducted in accordance with tenets of the Helsinki Declaration as it did no harm to any of the research participants.

Results

Sociodemographic characteristics of respondents

A total of 245 doctors participated in this study with a mean age (± standard deviation) of 35.9 (± 9.2) years. More than half (52.2%) were below 35 years of age and the male-to-female ratio was 1.8:1. About one-third (32.7%) of the respondents were resident doctors and approximately another third were medical officers (31.8%). More than half (52.7%) have been practicing for over 7 years with a median year of practice of 6 years, ranging between 1 to 44 years. Over two-thirds of the doctors were working in public tertiary health facilities (68.6%) and about two-fifths (38.4%) of them were in general practice (General practice, community medicine, family medicine, and primary health care) (Table 1).

Training, Experience, and Awareness of the SPIKES protocol

Over three-quarters (80.4%) of the doctors felt competent about BBN while more than one-third (34.3%) have had bad experiences with BBN. Less than two-thirds had education or training on BBN (66.1%), and were aware of the SPIKES protocol for BBN (64.1%) (Table 2).

Adherence to SPIKES protocol

Of all the components of the SPIKES protocol, Knowledge was the most adhered to by the doctors (99.2%). Settings (98.4%), Strategy (98.4%), and Empathy (98.0%) were also ensured by the majority of the doctors. The least observed component by the doctors was Invitation (76.7%) while Perception was ensured by 93.9% of them. Any of these doctors make use of at least 3 components of the SPIKES protocol. Overall, 178 (72.7%) doctors fully adhered to SPIKES protocol while BBN (Table 3).

Factors associated with full adherence to the SPIKES Protocol

On bivariate level, the proportion of doctors with full adherence to SPIKES protocol significantly differs across clinical position (p =0.002), type of health facility (p =0.004), specialty (p =0.03), and education or training (p =0.034). A higher proportion of those who had education or training (77.2%) adhered fully to the protocol than others (Table 4).

Predictors of full adherence to the SPIKES protocol

Multivariate logistic regression analysis revealed that doctors practicing at the public tertiary as well as public secondary and primary health facilities were less likely to fully adhere to the SPIKES protocol than those in private health facilities (AOR =0.132; 95%CI =0.029–0.600 and AOR =0.079; 95%CI =0.012–0.502, respectively). Furthermore, doctors in paediatrics were less likely to fully adhere than doctors in general practice (AOR =0.109; 95%CI =0.023–0.515) (Table 5).

Methods used to BBN among respondents

A large number of medical doctors adopt the SPIKES protocol in BBN, one of them, a male surgical resident opined, *"It involves setting a conducive stage for discussion, identifying patient's perception about the pathology, then obtaining the patient's invitation properly and sharing the knowledge of the pathology with the patient, showing empathy and finally, summarize and strategize".*

Table 1 Socio-demographic characteristics of respondents

Variables		Frequency ($n = 245$)	Percent (%)
Age (years)	< 35	128	52.2
	≥ 35	117	47.8
	Mean age (standard deviation)	*35.9 (9.2)*	
	Median age (minimum—maximum)	*34 (21—69)*	
Gender	Male	156	63.7
	Female	89	36.3
Clinical Position	House officer	46	18.8
	Medical officer	78	31.8
	Resident doctor	80	32.7
	Consultant	41	16.7
Year of Practice (years)	< 7	129	52.7
	≥ 7	116	47.3
	Median (minimum—maximum)	*6 (1—44)*	
Type of Health Facility	Public tertiary HF	168	68.6
	Public secondary & primary HF	39	15.9
	Private HF	38	15.5
Specialty	General practice[a]	94	38.4
	Paediatrics	17	6.9
	Obstetrics & Gynaecology	29	11.8
	Medicine	30	12.2
	Surgery	51	20.8
	Others[b]	24	9.8

HF Health facility

[a] General practice/Community medicine/Family medicine/General outpatient department and primary health care

[b] Emergency medicine/Mental Health/Dental Surgery

Table 2 Training, experience and awareness of the SPIKES protocol

Variables		Frequency ($n = 245$)	Percent (%)
Feel Competent about BBN	No	48	19.6
	Yes	197	80.4
Education/Training	No	83	33.9
	Yes	162	66.1
Bad Experience due to BBN	No	161	65.7
	Yes	84	34.3
Awareness	No	88	35.9
	Yes	157	64.1

BBN Breaking bad news

A large number use different aspects of the SPIKES protocol (SPIKES variants) and of these SPIKES variants, the Knowledge and Empathy (KE), Setting and Knowledge (SK) as well as the Setting, Knowledge and Empathy (SKE) variants were the most adopted in descending order. A female house officer who practices the KE variant remarked, *"I explain to them what has happened and empathize with them"*. One of those who practice the SKE variant, a male medical officer with 13 years of experience stated, *"I invite few of them that can understand the information am about to pass to them and process it. inform them citing necessary things that have been done by medical personnel on duty to keep him/her alive. Then after breaking the news to them as well sympathize with them".*

The next comprised those with no specific protocol in BBN and as such had no protocol of preference, this is followed by those who adopted the religious/spiritual approach (including using the scriptures, using religious beliefs and practices, relying on the intuition from the Holy Spirit and calling it "God wish"), the BREAKS protocol, ABCDE protocol, GATHER approach while the remnant subgroups were captured as "others" (including the BATHE method, Blunt approach and Diplomatic method) (Table 6).

Discussion

This study evaluated the SPIKES Protocol adherence in BBN of Nigerian medical doctors and provided insights into other techniques used and how they handled these

Table 3 Adherence to breaking bad news against SPIKES protocol

Variables	Frequency ($n = 245$)	Percent (%)
Setting		
No	4	1.6
Yes	241	98.4
Perception		
No	15	6.1
Yes	230	93.9
Invitation		
No	57	23.3
Yes	188	76.7
Knowledge		
No	2	0.8
Yes	243	99.2
Empathy		
No	5	2.0
Yes	240	98.0
Strategy		
No	4	1.6
Yes	241	98.4
SPIKES Score		
3	2	0.8
4	16	6.5
5	49	20.0
6	178	72.7
SPIKES Adherence		
Incomplete Adherence[a]	67	27.3
Full Adherence[b]	178	72.7

[a] SPIKES score < 6

[b] SPIKES score = 6

difficult interactions. Less than two-thirds of them had education or training and were aware of the SPIKES protocol. Another study in Nigeria revealed that 22.1% and 20.3% of health professionals (doctors and nurses) had formal training and were aware of a BBN protocol [11]. This was consistent with previous research showing that medical education frequently places a higher priority on technical skills than communication competencies, and shows a gap in awareness and training in effective communication strategies among the medical doctors [8, 9]. BBN is a complex and sensitive part of medical practice, which requires a delicate balance between clear communication, empathy, and cultural sensitivity.

This study found that about three-quarters of the medical doctors fully followed the SPIKES protocol. This suggests that some doctors adhered to the SPIKES protocol despite less than two-thirds being aware of or having received formal training or education on it. This proportion of full adherence is promising compared to other developing nations [2, 15, 18]. It has been proposed that a respectfully shared bad information to the concerned in the health arena in a developing country like Nigeria using the BBN protocols can both protect the patient and the doctor from adverse events that may follow sharing the bad news. [12] A study among 192 doctors in Sudan showed 12% perfect adherence to the SPIKES protocol [2]. Similarly, 31% of general surgery residents in India followed the complete SPIKES protocol while BBN [18]. The findings of this study reveal an apparent contradiction. While less than two-thirds of the participants reported receiving formal education or training on the SPIKES protocol, a significant proportion adhered to its principles when BBN. Several factors may account for this disparity. First, many doctors acquire communication skills informally through practice, workplace, and mentorship rather than structured training. Additionally, cultural influences in Nigeria reflect respectful and empathetic communication, which may naturally align with the principles of SPIKES, even in the absence of formal training. Moreover, institutional and professional

Table 4 Factors associated with full adherence to the SPIKES Protocol

Variables	SPIKES Adherence				
	Incomplete adherence[a] (*n* = 67) (%)	Full adherence[b] (*n* = 178) (%)	Total (*n* = 245)	X^2	*p*-value
Age (years)					
< 35	34 (26.6)	94 (73.4)	128	0.083	0.776
≥ 35	33 (28.2)	84 (71.8)	117		
Gender					
Male	43 (27.6)	113 (72.4)	156	0.010	0.999
Female	24 (27.0)	65 (73.0)	89		
Clinical Position					
House officer	9 (19.6)	37 (80.4)	46	15.131	0.002
Medical officer	13 (16.7)	65 (83.3)	78		
Resident doctor	34 (42.5)	46 (57.5)	80		
Consultant	11 (26.8)	30 (73.2)	41		
Years of Practice (years)					
< 7	31 (24.0)	98 (76.0)	129	1.508	0.252
≥ 7	36 (31.0)	80 (69.0)	116		
Type of Health Facility					
Public tertiary HF	55 (32.70	113 (67.3)	168	10.952	0.004[F]
Public secondary & primary HF	9 (23.1)	30 (76.9)	39		
Private HF	3 (7.9)	35 (92.1)	38		
Specialty					
General Practice[#]	21 (22.3)	73 (77.7)	94	12.305	0.030
Paediatrics	10 (58.8)	7 (41.2)	17		
Obstetrics & Gynaecology	10 (34.5)	19 (65.5)	29		
Medicine	5 (16.7)	25 (83.3)	30		
Surgery	15 (29.4)	36 (70.6)	51		
Others*	6 (25.0)	18 (75.0)	24		
Feel Competent about BBN					
No	18 (37.5)	30 (62.5)	48	3.097	0.103
Yes	49 (24.9)	148 (75.1)	197		
Education/Training					
No	30 (36.10)	53 (63.9)	83	4.890	0.034
Yes	37 (22.8)	125 (77.2)	162		
Bad Experience due to BBN					
No	42 (26.1)	119 (73.9)	161	0.375	0.549
Yes	25 (29.8)	59 (70.2)	84		
Awareness					
No	30 (34.1)	58 (65.9)	88	3.144	0.100
Yes	37 (23.6)	120 (76.4)	157		

[a] SPIKES score < 6, [b]SPIKES score = 6, X^2: Chi-square test, [F]: Fischer's exact test, HF: Health facility, BBN: Breaking bad news, [#] General practice/Community medicine/Family medicine/General outpatient department and primary health care, *: Emergency medicine/Mental Health/Dental Surgery

guidelines may play a role in promoting good communication practices independent of specific SPIKES training. This disparity, therefore, underscores the need for more structured and widespread training on the SPIKES protocol. While many doctors may demonstrate intuitive or informal adherence, formal training ensures consistency, reinforces best practices, and addresses gaps in knowledge.

Furthermore, the most adhered-to elements of the SPIKES protocol were "Knowledge", "Setting",

Table 5 Multivariate logistic regression showing predictors of full adherence to the SPIKES Protocol

Variables	B	AOR	95% Confidence Interval		*p*-value
			Lower	Upper	
Clinical Position					
House officer	0.952	2.591	0.757	8.872	0.129
Medical officer	1.091	2.978	0.834	10.641	0.093
Resident doctor	− 0.325	0.723	0.279	1.874	0.504
Consultant		1.000			
Type of Health Facility					
Public tertiary HF	− 2.025	0.132	0.029	0.600	0.009
Public secondary & primary HF	− 2.537	0.079	0.012	0.502	0.007
Private HF		1.000			
Specialty					
General Practice[a]		1.000			
Paediatrics	− 2.214	0.109	0.023	0.515	0.005
Obstetrics & Gynaecology	− 0.792	0.453	0.150	1.368	0.160
Medicine	0.284	1.329	0.417	4.234	0.631
Surgery	− 0.443	0.642	0.265	1.557	0.327
Others[b]	− 0.266	0.766	0.247	2.373	0.644
Feel Competent about BBN					
No	− 0.790	0.454	0.181	1.135	0.091
Yes		1.000			
Education/Training					
No	− 0.550	0.577	0.252	1.324	0.194
Yes		1.000			
Awareness					
No	− 0.291	0.748	0.343	1.632	0.465
Yes		1.000			

AOR Adjusted Odds Ratio, *HF* Health facility, *BBN* Breaking bad news

[a] General practice/Community medicine/Family medicine/General outpatient department and primary health care

[b] Emergency medicine/Mental Health/Dental Surgery

and "Strategy". Similar results have been found among the Sudanese doctors [2]. However, this contrasts with what was observed among Ethiopian physicians where "Setting", "Invitation" and "Perception" were the most adhered-to elements of the protocol [15]. Our results indicate that the doctors felt comfortable imparting medical knowledge but often struggled with managing patients' emotions, providing empathetic support as well as a patient-centered approach by asking patients "what they know" and "want to know" about their conditions. This could be explained by the cultural barrier, resource limitations, and a very low doctor-patient ratio in Nigeria that result in a heavy task load, shorter duration of consultation, frequent exposure to BBN, and emotional burnout [19, 20]. In addition, this may suggest that medical training in Nigeria may be prioritizing knowledge dissemination over other aspects of medical care.

Medical doctors in public healthcare facilities were less likely to fully adhere to the SPIKES protocol than physicians in private facilities. This is consistent with research conducted in Egypt, which found that private hospitals adhered to communication protocols considerably more often than public hospitals [9]. The higher patronage of public than private health facilities in Nigeria due to the lower cost of care among other reasons may result in a much higher workload and time pressure in public healthcare settings [21, 22]. These are likely the causes of the disparity, as they prevent doctors from dedicating enough time to empathetic communication. It is essential for healthcare systems, particularly in resource-limited settings, to prioritize the development of patient-centered communication among medical practitioners to ensure that all patients receive compassionate and effective care.

In addition, doctors in general practice were more likely to adhere to the SPIKES protocol than those in the specialties such as paediatrics. This is consistent with the results of a study conducted in Menoufia, Egypt, where the best BBN practice scores were more evident among family physicians and general practitioners [23]. This may be because general practitioners are often faced with situations requiring sensitive communication, leading to greater familiarity with the SPIKES framework. Doctors in paediatrics, on the other hand, were less likely to fully adhere due to the unique challenges of communicating bad news to both children and their families, which may not perfectly align with the SPIKES steps.

In terms of education and training, a higher proportion of medical doctors who had undergone them adhered fully to the protocol than others. Although this was not significant after the logistic regression analysis, it is similar to the results of other studies conducted in Saudi Arabia and Egypt [23–25]. In Nigeria, health professionals who have had a formal training in BBN generally had higher self-perceived competence rating for BBN [11]. This highlights the importance of structured training programs in developing effective communication skills. Incorporating such training into medical curricula and continuing education programs could significantly improve adherence to recommended communication practices.

Even though a large proportion of the medical doctors use SPIKES and its variants, a few of them prefer alternative protocols such as the BREAKS and ABCDE. Literature has documented the use of these substitutes in BBN [5, 12–14]. Additionally, a subset of them adopted

Table 6 Methods used to BBN among respondents

Themes	Sub Themes	Frequency ($n=245$)	Excerpts/verbatim quotes
Traditional SPIKES protocol		101	*"I use the SPIKES protocol",* *"I always use SPIKE protocol"* *"I use the SPIKES protocol which involves creating a setting to ensure confidentiality, be empathetic while breaking the news, then give room to process the news and proffer solutions, if any*
SPIKES protocol variants		81	
	KE variant	*25*	*"Empathize while breaking the bad news"*
	SK variant	*22*	*"I invite the patient to a calm area and tell them the bad news"*
	SKE variant	*11*	*"Get the patient convenient, confirm his knowledge about the problem, tell him your effort and how unsuccessful it has been.empatize and ask for clarification*
	KES variant	*5*	*"Show empathy through your action, body language and words first,,, theirafter explain and console in needed, then offer possible solutions for the client to take informed decision*
	K variant	*5*	*"Call the most respected among the family tell him or her"* *"I will just explain what happened to the relatives"*
	PKE variant	*4*	*"I will first ask the patient knowledge about the condition. Then go ahead to show empathy and break the bad news"*
	SPIKE Variant	*3*	*"Establish an appropriate environment and rapport, ask if they are ready to recieve the results, be honest and sincere, show empathy and emotions, give them time to take it in and summarize*
	SPKE Variant	*3*	*"Create a good setting, know the patient or relative perception about the condition, educate and give information then I will show empathy all through. Finally I will summarise*
	SKS Variant	*3*	*"Call them to a calm environment, tell them the findings and the possibilities. And reassure them that we will do our best*
No Specific Protocol		16	*"I haven't done this before"*
Religious/Spiritual Approach		4	*"I rely on intuition from the Holy Spirit"*
BREAKS protocol		3	*"I employ the BREAKS protocol which involves me reviewing the background, creating a rapport, exploring their knowledge, announcing the bad news, acknowledging their emotions (i.e., kindling and summarizing"*
ABCDE protocol		2	*"I normally use ABCDE approach"*
"GATHER Approach"		2	*"I use often use the acronym GATHER. I try to ensure a good and private setting while doing so.",* *"I use GATHER and adapt it to each situation"*
Others[+]		5	*"I use the BATHE Method"*
No response		31	

KE Knowledge and Empathy, *SK* Setting and Knowledge, *SKE* Setting Knowledge and Empathy, *KES* Knowledge Empathy and Setting variants

[+] BATHE method, Blunt approach, Diplomatic approach

a spiritual/religious approach. Despite the notion that BBN is not seemingly culturally acceptable in Nigeria, many patients having neurological conditions with obvious poor prognosis still preferred the news being shared ahead of time by doctors in the presence of their relatives and loved ones [26]. Nigerian doctors are still culturally sensitive to their patients with BBN, as shown in the quality of training received in medical schools reflective in the level of knowledge and empathy shown toward the patients in dire conditions. In Ethiopia, palliative care patients described that their faith in God, religious and spiritual activities were essential to sustain hope while BBN [27]. Despite research from the West minimizing the influence of religion and spirituality in patient interactions, a few physicians in the United States routinely address spiritual or religious concerns while interacting with patients [28]. These findings suggest that Nigerian doctors largely take a pragmatic approach to BBN, adapting protocols to the specifics of their practice settings, as demonstrated by the variety of approaches they employ. However, it also calls into question the consistency of care, since different approaches might result in different experiences for patients. This highlights the need for standardized BBN training while maintaining flexibility to accommodate situational and cultural differences.

According to a qualitative research conducted in Enugu, South East Nigeria on terminally ill patients' perceptions of how healthcare personnel communicate prognostic information to them revealed a trend that requires improvement [29]. In a typical teaching hospital in Nigeria, it is advised that locally adaptable prognostic information communication protocols be developed and that healthcare personnel be trained on how to use them for efficient prognostic information transmission [29]. Communication in healthcare settings must be continuously

improved based on knowledge, perception, culture sensitivity, and various core values embraced in different protocols developed across different races and tribes. The well-being and safety of patients and doctors must be at the center stage of such improvement from time to time.

The strength of this study lies in the sample size compared with similar studies, the coverage of many medical specialties, qualifications, and different levels of care. This research is therefore generalizable across levels of care, specialties, and cadres of medical doctors as the study sample matches that of the broader population in these areas, but considering that the survey was conducted only in Ekiti State, Southwestern Nigeria, caution must be taken to generalize findings beyond the Southwestern region given the sociocultural, and ethnic differences that might influence the applicability of the results. The work utilized a cross-sectional design, which provided a snapshot, preventing the tracking of changes over time. In addition, this study may be affected by recall bias as well as social desirability bias as there is a tendency to reply in a manner that is pleasing. Also, self-reported data may be biased as respondents could overstate or understate adherence to the SPIKES protocol. However, a validated questionnaire from previous research was used to ensure that the construct being measured was measured accurately. There was an incorporation of an open-ended question that was analyzed with content analysis, and the structured questions focused on adherence to specific steps of the SPIKES protocol, thereby reducing subjectivity.

Conclusion

The Nigerian doctors had a high adherence to the SPIKES protocol, particularly in private health facilities, although those in the public health facilities and with no training or education on BBN still have room for improvement. Achieving consistent BBN practice may require more support and training, as demonstrated by variability in adherence influenced by variables such as healthcare facility type, specialty as well as training and education.

We recommend regular capacity building for Nigerian medical doctors and the inclusion of BBN training into medical school education to improve skills in appropriately delivering bad news to patients and their relatives. Public healthcare facilities employers should give medical doctors relevant support that will enable them to communicate sensitively and break bad news better with their patients. Finally, future studies should focus on a better understanding of the dynamics influencing adherence to BBN protocols in public healthcare settings in Nigeria.

Abbreviations

BBN Breaking bad news
SPIKES Setting-Perception-Invitation-Knowledge-Empathy-Strategy

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Authors' contributions
TMI, OTA, and OOO conceptualized and designed this study. TMI, OTA, OOO, TAS, APA, RAA, GDA, POA, OMA, CAA, TAB, OMF, SEA, ONA, ALA, MBD, OOA, OTO, OOE, and JOO were involved in data collection, investigation, methodology, project administration, resources and software. TMI and OMF conducted the statistical and thematic analyses respectively. TMI, OTA, and OOO drafted the initial manuscript which was reviewed and edited by TMI, OTA, OOO, TAS, APA, RAA, GDA, POA, OMA, CAA, TAB, OMF, SEA, ONA, ALA, MBD, OOA, OTO, OOE, and JOO. All authors read and approved the final version of the manuscript.

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Data availability
The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
Ethical approval (ERC/2024/05/08/1102 A) was obtained from the Human Research and Ethics Review Committee of the Federal Teaching Hospital, Ido-Ekiti, Nigeria. Full informed consent was obtained from all the respondents.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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