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Evaluation of Guilan University of Medical Sciences medical interns' attitudes regarding breaking bad news to patients based on the SPIKES model, 2020 to 2022

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Abstract:

BACKGROUND: Bad news may be defined as “any information which adversely and seriously affects an individual’s view of his or her future.” It seems necessary for physicians to use a specific method to break the bad news to patients properly. Due to the importance of this skill and its effects on patient’s hope and motivation to continue his treatment process, in this study, we evaluate the interns of Guilan University of Medical Sciences’ attitude to breaking bad news (BBN) to the patients based on strategy for BBN, perception of condition or seriousness, invitation from the patient to give information, knowledge: giving medical facts, explore emotions, and sympathize (SPIKES) model in 2020–2022.

MATERIALS AND METHODS: In this cross-sectional study in Iran, 153 Guilan University of Medical Sciences interns were selected as a census sample in 2020–2022. A self-administered questionnaire collected the information with standard tests confirming its reliability and validity. The collected data were described and analyzed using Statistical Package for the Social Sciences (SPSS) 16. The Chi-square test was used to measure the statistical relationship between the demographic variables and the entire questionnaire. Also, a one-way analysis of variance (ANOVA) test was used to measure the relationship between the average age and the scores obtained from the four main areas and the entire questionnaire. A statistical level of less than 0.05 was considered significant.

RESULTS: 43.1% of the interns were men, and 56.9% were women. The mean attendance age was 26.12 ± 1.32 , the minimum age was 23, and the maximum was 33. Only 8.5% of the interns in this study had been taught about BBN, and most participants announced that they feel pressure and anxiety when BBN to patients. The attitude of interns in this study was not satisfying in all four parts of the study: individual preference (54.2% of participants showed poor attitude), preparing environmental conditions for BBN (60.8% of participants showed poor attitude), how to break bad news (52.3% of participants showed poor attitude), and the things that are done after BBN (52.9% of participants showed poor attitude).

CONCLUSION: Based on the results, the attitude of the interns who had participated in this study was not satisfactory. Due to the importance of this communication skill to reduce physician anxiety and best control patients’ reactions, managing courses in the undergraduate curriculum seems necessary.

Keywords:

Attitude, breaking bad news, physician–patient relations, SPIKES model, truth disclosure

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Introduction

One of the doctors' most challenging duties is breaking poor or life-altering news to a patient.^[1] The bad news is broadly described as the knowledge that can impact a patient's outlook on the future. Examples of such information include details on a chronic condition such as diabetes mellitus, a severe sickness such as multiple sclerosis, or an injury that causes significant change (e.g., a season-ending knee injury). Most patients like to be aware of their diagnosis. However, the information sought differs depending on culture, education level, age, and sex.^[2,3] It is crucial to pinpoint the core component of negative news, that is, what makes it so terrible for the patient. In general, the impact of negative news depends on how much it alters the patient's expectations. In actuality, "any news that adversely and substantially affects an individual's perception of his or her future" is one helpful definition of bad news. Any unpleasant news significantly affects patients and their families.^[4]

Breaking bad news (BBN) is a challenging communication undertaking. Less than one-third of doctors have appropriate BBN training, which adds to this complication.^[5] In the professional setting, BBN goes beyond simply telling of death (contrary to common belief) and involves disclosing test findings, unsuccessful treatment outcomes, illness recurrence, practical drug adverse effects, and concerns about hospice and resuscitation care. Delivering terrible news with the active participation of significant others and communicating in an empathetic, truthful, balanced, and unhurried way have been linked to better therapeutic results.^[6]

Since medical ethics standards place a high value on patients' rights and independence, it is now standard practice in many Western nations to provide patients with honest and complete disclosure of all relevant medical information.^[7] Doctors also openly and directly deliver bad news to their patients. The best way for the healthcare team to deliver bad news is now the only important consideration in Western countries, and disclosing bad news is no longer a cause for concern. There is still no agreement on whether terrible news should be provided to patients, so the concept of sharing bad news is challenged in many Asian nations.^[8] Studies in Iran show that around 40% of patients are not informed of their disease.^[9] Although most Iranian cancer patients would like to understand the etiology of their disease, they do not seek information.^[10]

According to recent research, 42% of doctors suffer stress after delivering bad news, and the effect can continue anywhere from a few hours to more than three

days.^[10] Breaking bad or important news is governed by conventions and mnemonics, such as A—advance preparation, B—build a therapeutic environment/relationship, C—communicate well, D—deal with patient and family reactions, and E—encourage and validate emotions (ABCDE); B—background, R—rapport, E—explore, A—announce, K—kindling, and S—summarize (BREAKS); and S—strategy for BBN, P—perception of condition/seriousness, I—invitation from the patient to give information, K—knowledge: giving medical facts, E—explore emotions, and S—sympathize (SPIKES). The SPIKES procedure, which was first created to help physicians convey terrible news to cancer patients, can also be used with kids.^[11] Establishing rapport in the right environment, determining the patient's prior knowledge and need for information, avoiding medical jargon and euphemisms, supporting patient emotions, allowing for inquiries, summarizing, and figuring out future actions are all common elements of protocols.^[11,12] Setup, or the initial phase, refers to preparing the medical environment. It is best to make such announcements in a quiet, dignified, and warm environment. The time is now to establish a positive doctor–patient relationship. Through open-ended inquiries, the patient might be asked about their state or sickness in the second phase, P, perception. The third stage, I, or invitation, is the time to assess the patient's level of curiosity and determine whether any questions need to be answered. The diagnosis will be made public in the fourth phase, K, known as knowledge. It is crucial to communicate facts in plain language free of technical jargon. It is advised that the subject be introduced with words that allude to the transmission of unpleasant news. The moment to demonstrate empathy, recognize the patients' feelings, and offer assistance comes in the fifth stage, E, emotions. The final but crucial stage, S, strategy, and summary, is when it is appropriate to recommend a course of action and an expected outcome while summarizing all that has been stated to ensure that the patient understands it.^[13-15]

Being able to break the bad news to patients effectively is a crucial skill for doctors because failing to do so results in poor doctor–patient communication, a lack of patient trust, increased mental strain and anxiety for the doctor, discouragement of patients from continuing treatment, and ineffective patient participation. Therefore, considering the importance of how to break the bad news to patients and its direct impact on hope, morale, and motivation, as well as their willingness to continue and follow up the treatment process, in this study, the attitude of interns of Guilan University of Medical Sciences on how to break the bad news to patients was evaluated based on the SPIKES model.

Materials and Methods

Study design and setting

This descriptive–analytical and cross-sectional research examines the attitude of interns at the Medical School of Guilan University of Medical Sciences in BBN to patients based on the SPIKES model from 2020 to 2022.

Study participants and sampling

Due to the limited sample size and to increase the accuracy of the research results, this study was conducted based on the entire research community and as a census. The total number of interns who were able to participate in this research, according to the year of entering the medical school of Guilan University of Medical Sciences and employment in the internship stage, was estimated to be 200 people. Therefore, two hundred interns with university entrance from October 2013 to October 2014 studying at the Faculty of Medical Sciences of Guilan University of Medical Sciences were included in this study.

Data collection tool and technique

The data collection tool in this study is a researcher-made questionnaire consisting of 33 questions, including demographic information sections (14 questions), the field of “physician’s individual preferences in breaking bad news” (five questions), and the field of “management of environmental conditions in the transmission of bad news” (four questions), the field of “how to break bad news” (four questions), and the field of “actions after breaking bad news to the patient” (six questions). The questionnaire was sent to 11 expert professors to determine the content validity of the questionnaire. According to Lawshe’s table, the acceptable Content validity Ration (CVR) is higher than 0.59. Based on this, seven questions had a CVR of lower than 0.59, which was revised, and one question with a CVR of lower than 0.4 was eliminated. The average CVI of all the questions is 0.87, and the Content validity Index (CVI) of all the questions is higher than 0.79. The reliability of the questionnaire was also confirmed according to Cronbach’s alpha of 0.8.

Each of the 19 questions in the four main areas of the questionnaire has a Likert scale of 5 options (always, often, usually, rarely, and never), and each option is given a score from 1 to 5. Therefore, the range of points that can be obtained in each of the four main areas will be as follows: The field of “physician’s individual preferences” includes five questions, and the range of points that can be acquired is 5–25 points; the field of “management of environmental conditions” includes four questions, and the range of points that can be acquired is 4–20 points; the field of “how to break bad news” includes four questions, and the range of points that can be acquired

is 4–20 points; and the field of “actions after breaking bad news to the patient” includes six questions, and the range of points that can be acquired is 6–30 points, and the whole questionnaire “how to break bad news” includes 19 questions, and the range of points that can be acquired is 19–95 points.

After checking the points obtained by the interns and dividing the points into quartiles in each field, the values below the second quartile are considered poor views, the points that are in the second and third quartiles are considered average views, and the points above the third quartile are considered good views. Then, the number and percentage of interns who had good, poor, or average views were obtained based on this division.

The collected data were described and analyzed using Statistical Package for the Social Sciences (SPSS) statistical software version 16 (SPSS, Inc., IL, Chicago, USA). The Chi-square test was used to measure the statistical relationship between the demographic variables (gender, age groups, and marital status with the grades obtained from the four main areas) and the entire questionnaire. Also, a one-way analysis of variance (ANOVA) test was used to measure the relationship between the average age and the scores obtained from the four main areas and the entire questionnaire. A statistical level of less than 0.05 was considered significant.

Ethical consideration

Before completing the questionnaire, through holding a preparatory meeting, the importance of this study was explained to the interns. Then, the method of filling out the questionnaire was explained to the interns, and the informed consent form was given to participate in this study. The questionnaire link was then placed in the groups related to each entry, and after the interns responded, the relevant information was sent to the researcher confidentially. This study was approved by the Institutional Review Board of Guilan University of Medical Sciences (IR.GUMS.REC.1399.588).

Results

A total of 153 Guilan University of Medical Sciences interns participated in this study, 43.1% of whom were men ($n = 66$) and 56.9% were women ($n = 87$). Furthermore, 32.7% of the interns were under 25 years of age ($n = 50$), and 67.3% were over 25 years of age ($n = 103$). The average age of the interns studied was 26.12 ± 1.32 years, so the youngest person was 23 years, and the oldest was 33 years. Also, 76.5% of the interns were single ($n = 117$), and 23.5% of the students were married ($n = 36$).

Table 1 shows the attitude of the interns at the Guilan University of Medical Sciences medical school regarding

Table 1: Attitudes of medical school interns of Guilan University of Medical Sciences regarding how to break the bad news to patients

Variables	Condition	n	%
The need for a training course on how to break the bad news to patients	Yes	13	8.5
	No	140	91.5
Need training on how to break the bad news	Yes	115	75.2
	No	38	24.8
The best time to learn how to break the bad news	Basic science course	9	5.9
	Physiopathology course	16	10.5
	Pre-internship course	94	61.5
	Internship course	34	22.2
Breaking bad news to the patient and the patient's companions by the interns	Yes	40	26.1
	No	113	73.9
The person who breaks the bad news to the patient and the patient's companions other than interns	Nurse	4	3.5
	resident	5	4.4
	The treating physician	78	69
	Psychologist	26	23
A history of hearing bad news about yourself or your family	Yes	83	54.2
	No	70	45.8
History of breaking bad news to the patient or the patient's family	Yes	82	53.6
	No	71	46.4
Creating stress and anxiety when breaking bad news to patients	Yes	104	68
	No	49	32

As it is known, only 8.5% of the researched interns stated that they had seen a training course on breaking bad news for patients, and 75.2% of the interns stated that they needed training on breaking bad news. Among interns who do not consider it their responsibility to break bad news, 69% believe that breaking bad news to the patient and the patient's companions should be done by their treating physician, and 23% consider it the psychologist's duty. Also, 68% of the researched interns said they feel stressed and anxious when breaking bad news to patients

BBN to patients. As it is known, only 8.5% of the researched interns stated that they had seen a training course on BBN for patients, and 75.2% of the interns stated that they needed training on BBN. Also, 61.4% of interns suggested that the best time for training on BBN is during the internship period. Among the interns, only 26.1% believe that the break of bad news to the patient and the patient's companions should be done by themselves, and 73.9% do not. Among interns who do not consider their responsibility to break bad news, 69% believe that BBN to the patient and the patient's companions should be done by their treating physician, and 23% consider it the psychologist's duty. 54.2% of the interns had a history of hearing bad news about themselves or their families, and 53.6% also had a history of BBN to a patient or a patient's family. Also, 68% of the researched interns said they feel stressed and anxious when BBN to patients [Table 1 should be here].

In the field of physician's individual preferences, the majority of interns (41.8%) stated that they rarely avoid telling the patient or delegating it to another person due to the anxiety and mental pressure caused by the transmission of bad news and usually BBN only to the patient (39.7%). They rarely break the bad news only to the patient's companions (48.4%), and they rarely refuse to tell the patient just because of the request of the patient's companions not to break the bad news to the patient (37.9%). They also never break the bad news to the patient or their companion by SMS or phone (77.1%) [Table 2].

In the field of management of environmental conditions, the majority of interns (32%) stated that they usually respect the patient's privacy when BBN to the patient and rarely, before BBN to the patient, prepare the environmental conditions (such as providing sugar water or paper napkin) for telling this news (48.4%). When a patient receives bad news, interns usually avoid things that cause interruptions in the conversation with the patient (45.1%) and always allow the patient's companion to attend the meeting if requested by the patient (39.2%) [Table 2].

In the field of how to break bad news, the majority of interns (37.9%) stated that they usually collect and study all the detailed information related to the patient's illness before BBN to the patient, and also, usually before BBN to the patient, the level of awareness the patient is evaluated for his problem (47.1%). Before BBN to the patient, interns usually check how much the patient wants to know about his illness (47.1%) and often try to create a sense of trust in the patient when telling the bad news (35.9%) [Table 2].

In the field of actions after BBN to the patient, most interns (33.3%) stated that they often allow the patient to express their feelings after BBN and are always bound to empathize with the patient and create a sense of hope in him (33.3%). The interns always allow the patient to ask questions after BBN (37.3%). In the end, they usually explain a summary of the issues related to the person's illness

Table 2: Preferences of interns in breaking bad news to patients based on the SPIKES model

Areas	Questions	Options n (%)				
		Never	Rarely	Usually	Often	Always
Physician's individual preferences	Have you ever avoided telling the patient or delegated it to someone else due to the anxiety and mental pressure caused by the break of bad news?	29 (19)	64 (41.8)	33 (21.6)	17 (11.1)	10 (6.5)
	Do you break the bad news only to the patient?	16 (10.5)	56 (36.6)	58 (37.9)	23 (15)	0 (0)
	Do you break the bad news only to the patient's companions?	16 (10.5)	74 (48.4)	43 (28.1)	17 (11.1)	3 (2)
	Do you refuse to tell the patient just because of the request of the patient's companions not to break the bad news to the patient?	17 (11.1)	58 (37.9)	50 (32.7)	22 (14.4)	6 (3.9)
	Do you break the bad news to the patient or the patient's companion by SMS or phone?	118 (77.1)	28 (18.3)	5 (3.3)	2 (1.3)	0 (0)
Management of environmental conditions	Do you respect the patient's privacy when breaking bad news?	3 (2)	14 (9.2)	49 (32)	39 (25.5)	48 (31.4)
	Before breaking the patient's bad news, do you prepare the environmental conditions (such as providing sugar water or a paper napkin) for telling this news?	22 (4.4)	74 (48.4)	32 (20.9)	17 (11.1)	8 (5.2)
	When breaking bad news to the patient, do you avoid things that cause interruptions in your conversation with the patient?	3 (2)	20 (13.1)	69 (45.1)	46 (30.1)	15 (9.8)
	Do you allow the patient's companion to attend the meeting if requested by the patient?	0 (0)	2 (1.3)	37 (24.2)	54 (35)	60 (39.2)
How to break bad news	Do you collect and study all the detailed information related to the patient's illness before delivering the bad news to the patient?	2 (1.3)	30 (19.6)	58 (37.9)	45 (29.4)	18 (11.8)
	Do you evaluate the patient's awareness of his problem before breaking the bad news to the patient?	1 (0.7)	15 (9.8)	72 (47.1)	41 (26.8)	24 (15.7)
	Before breaking the bad news, do you check how much the patient wants to know about his illness?	4 (2.6)	25 (16.3)	72 (47.1)	30 (19.6)	22 (14.4)
	When breaking bad news to the patient, do you try to create a sense of trust in the patient?	0 (0)	10 (6.5)	52 (34)	55 (35.9)	36 (23.5)
Actions after Breaking bad news	Do you give the patient a chance to express his feelings after breaking the bad news?	2 (1.3)	18 (11.8)	35 (22.9)	51 (33.3)	47 (30.7)
	Are you bound to empathize with the patient and create a sense of hope in him?	1 (0.7)	20 (13.1)	36 (23.5)	45 (29.4)	51 (33.3)
	Do you give the patient a chance to ask questions after breaking the bad news?	0 (0)	5 (3.3)	43 (28.1)	48 (31.4)	57 (37.3)
	At the end of the meeting, do you summarize the issues raised about the person's illness?	10 (6.5)	29 (19)	62 (40.5)	32 (20.9)	20 (13.1)
	In this meeting, will you determine the patient's treatment and follow-up plan?	13 (8.5)	32 (20.9)	70 (45.8)	25 (16.3)	13 (8.5)
	Do you provide easy communication conditions for the patient with you during the coming days?	14 (9.2)	20 (13.1)	67 (43.8)	35 (22.9)	17 (11.1)

The majority of interns (41.8%) stated that they rarely avoid telling the patient or delegating it to another person due to the anxiety and mental pressure caused by the transmission of bad news and usually breaking bad news only to the patient (39.7%)

to the patient again (40.5%) and are also generally bound to determine the patient's treatment plan and follow-up care in this meeting (45.8%). They also usually provide the conditions for accessible patient communication with themselves during the coming days (40.5%) [Table 2]. [Table 2 should be here].

In this study, each question was assigned a score between 1 and 5. In the field of physician's individual preferences, which included five questions, the average score was 17.76 ± 2.34 . The management of environmental conditions and how to break bad news each included four questions, the average scores of which were 13.64 ± 2.47 and 13.81 ± 2.97 , respectively. The field of actions after BBN also included six questions; the average score was 20.88 ± 4.76 . The questionnaire generally included 19 questions; the average score was 66.11 ± 9.62 [Table 3]. [Table 3 should be here].

Regarding physician's individual preferences, 54.2% of the interns have poor views, 36.6% have average views, and only 9.2% have good views. In the management of environmental conditions, most interns (60.8%) have poor views, 19% have average views, and 20.3% have good views. Regarding how to break the bad news to the patient, most interns (52.3%) have poor views, 28.1% have average views, and 19.6% have good views. In the field of actions after BBN, most interns (52.9%) have poor views, 26.8% have average views, and 20.3% have good views. After dividing the total points obtained from all 19 questions of the questionnaire into quartiles, the majority of interns have poor views (52.9%), 22.9% have average views, and 24.2% have good views [Table 4 and Figure 1]. [Table 4 and Figure 1 should be here].

Table 3: Points obtained from the fields of the questionnaire on how to break bad news by the interns of the Guilan University of Medical Sciences medical school

Areas	Number of questions	The range of points	Mean±SD	Min	Max
Physician's individual preferences	5	5-25	17.76±2.34	12	22
Management of environmental conditions	4	4-20	13.64±2.47	7	20
How to break bad news	4	4-20	13.81±2.97	7	20
Actions after breaking bad news	6	6-30	20.88±4.76	10	30
The whole questionnaire	19	19-95	66.11±9.62	42	89

The average score was 17.76±2.34. The management of environmental conditions and how to break bad news each included four questions, the average scores of which were 13.64±2.47 and 13.81±2.97, respectively

Table 4: Situation of the interns in the questionnaire fields, how to break bad news by the interns of the medical school of Guilan University of Medical Sciences

Areas	Condition	n	(%)
Physician's individual preferences	Poor	83	54.2
	Average	56	36.6
	Good	14	9.2
Management of environmental conditions	Poor	93	60.8
	Average	29	19
	Good	31	20.3
How to break bad news	Poor	80	52.3
	Average	43	28.1
	Good	30	19.6
Actions after breaking bad news	Poor	81	52.9
	Average	41	26.8
	Good	31	20.3
The whole questionnaire	Poor	81	52.9
	Average	35	22.9
	Good	37	24.2

Poor: values less than the second quartile; Average: values between the second and third quartiles; Good: values greater than the third quartile. Regarding physician's individual preferences, 54.2% of the interns have poor views, 36.6% have average views, and only 9.2% have good views

Using the Chi-square test, it was determined that there are no significant differences between gender, age groups, and marital status with the status of "physician's individual preferences" and "management of environmental conditions" (P value > 0.05). Also, there are no significant differences between marital status and the status of the field of "how to break bad news" and "actions after breaking bad news" (P value > 0.05). However, there are statistically significant differences between gender and age groups with the status of "how to break bad news" and "actions after breaking bad news" (P value < 0.05) [Table 5].

Using the one-way ANOVA, it was also determined that there are no statistically significant differences between the average age of the researched interns according to the status of "physician's individual preferences" and "management of environmental conditions" (P value > 0.05). However, there are significant differences between the average age of the researched interns according to the status of the field of

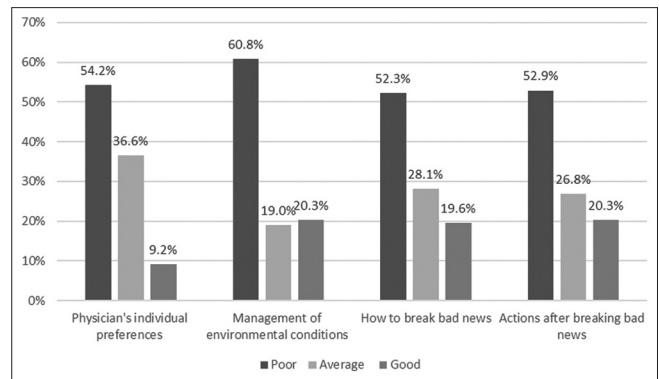


Figure 1: Situation of the interns in the questionnaire fields, how to break bad news by the interns of the Medical School of Guilan University of Medical Sciences. In the management of environmental conditions, most interns (60.8%) have poor views, 19% have average views, and 20.3% have good views. Regarding how to break the bad news to the patient, most interns (52.3%) have poor views, 28.1% have average views, and 19.6% have good views

"how to break bad news" and "actions after breaking bad news" (P value < 0.05) [Table 5].

In general, based on the Chi-square test, it was determined that there are no significant differences between the status of age groups and marital status with the status of the questionnaire (P value > 0.05). However, there is a significant difference between gender and the general state of the questionnaire (P value < 0.05). Using the one-way ANOVA, it was also determined that there is no statistically significant difference between the average age of the interns studied according to the status of the questionnaire (P value > 0.05) [Table 5]. [Table 5 should be here].

Discussion

The present study evaluated the views of medical interns at Guilan University of Medical Sciences on BBN to patients based on the SPIKES model from 2020 to 2022. This research showed that most interns had a poor view of BBN, consistent with several studies.^[7,16-18] However, it is inconsistent with the studies conducted by Al-Sabaawi (2021) and Ferreira da Silveira *et al.* (2017).^[14,19] In the current study, most participants had not received training on BBN. Also, most of the participants stated that they feel anxious

Table 5: Examining the relationship between individual characteristics of interns and different areas of the questionnaire

Areas	Variable	Condition	Poor n (%)	Average n (%)	Good n (%)	P
Physician's individual preferences	Age	Mean±SD	26.14±1.34	26.21±1.35	25.64±1	0.347 ^a
	Sex	Male	33 (50)	30 (45.5)	3 (4.5)	0.062 ^b
		Female	50 (57.5)	26 (29.9)	11 (12.6)	
	Age	≤25	27 (54)	17 (34)	6 (12)	0.671 ^b
		>25	56 (54.4)	39 (37.9)	8 (7.8)	
	Marital status	Single	63 (58.3)	43 (36.8)	11 (9.4)	0.974 ^b
Married		20 (55.6)	13 (36.1)	3 (8.3)		
Management of environmental conditions	Age	Mean±SD	26.27±1.44	26.14±1.12	25.68±1.01	0.98 ^a
	Sex	Male	45 (68.2)	8 (12.1)	13 (19.7)	0.141 ^b
		Female	48 (55.2)	21 (24.1)	18 (20.7)	
	Age	≤25	26 (52)	11 (22)	13 (26)	0.285 ^b
		>25	67 (65)	18 (17.5)	18 (17.5)	
	Marital status	Single	68 (58.1)	22 (18.8)	27 (23.1)	0.282 ^b
Married		25 (69.4)	7 (19.4)	4 (11.1)		
How to break bad news	Age	Mean±SD	26.35±1.25	26.02±1.55	25.67±1.02	0.045 ^{*a}
	Sex	Male	47 (71.2)	14 (21.2)	5 (7.6)	0.0001 ^{*b}
		Female	33 (37.9)	29 (33.3)	25 (28.7)	
	Age	≤25	17 (34)	20 (40)	13 (26)	0.007 ^{*b}
		>25	63 (61.2)	23 (22.3)	17 (16.5)	
	Marital status	Single	55 (47)	36 (30.8)	26 (22.2)	0.06 ^b
Married		25 (60.4)	7 (19.4)	4 (11.1)		
Actions after breaking bad news	Age	Mean±SD	26.03±1.19	26.17±1.65	25.61±1.02	0.048 ^{*a}
	Sex	Male	43 (65.2)	18 (27.3)	5 (7.6)	0.002 ^{*b}
		Female	38 (43.7)	23 (26.4)	26 (29.9)	
	Age	≤25	19 (38)	15 (30)	16 (32)	0.015 ^{*b}
		>25	62 (60.2)	36 (25.2)	15 (14.6)	
	Marital status	Single	59 (50.4)	34 (29.1)	24 (20.5)	0.459 ^b
Married		22 (61.1)	7 (19.4)	7 (19.4)		
The whole questionnaire	Age	Mean±SD	26.27±1.02	26.02±1.69	25.73±1.12	0.11 ^a
	Sex	Male	42 (63.6)	14 (21.2)	10 (15.2)	0.038 ^{*b}
		Female	39 (44.8)	21 (24.1)	27 (31)	
	Age	≤25	20 (40)	13 (26)	17 (34)	0.06 ^b
		>25	61 (59.2)	22 (21.4)	20 (19.4)	
	Marital status	Single	57 (48.7)	30 (25.6)	30 (25.6)	0.151 ^b
Married		24 (66.7)	5 (13.9)	7 (19.4)		

*Statistically significant, ^aone-way ANOVA test, ^bChi-square test. Using the Chi-square test, it was determined that there are statistically significant differences between gender and age groups with the status of "how to break bad news" and "actions after breaking bad news" ($P<0.05$). Using the one-way ANOVA, it was shown that there are significant differences between the average age of the researched interns according to the status of the field of "how to break bad news" and "actions after breaking bad news" ($P<0.05$)

when BBN, while in a similar study conducted by Horwitz *et al.* (2007) on pediatric assistants, most of the participants were trained in how to break bad news, and the results of the study showed the high self-confidence of the participants in the field of BBN.^[20] Most participants of this study declared that they needed training in this field, which was almost the same percentage as in the study by Mostafavian *et al.* (2018).^[21] Therefore, based on the results of this study and similar studies, it seems that proper training in this skill plays an essential role in reducing anxiety and increasing the self-confidence of doctors when BBN to patients. Also, most of the interns participating in this study considered the best time to learn this skill during the internship period. In the current study, more than

half of the interns had a history of giving bad news to the patient or the patient's family, but most believe it is the doctor's responsibility to break the bad news to the patient. This choice seems to be because the attending physician is the head of the patient's treatment team, and the interns believe that the attending physician is the best person to break any bad news to the patients. Also, most participants said they rarely avoided telling the patient or delegating it to another person due to the anxiety and psychological pressure caused by BBN.

In this study, the majority of participants stated that they usually break the bad news only to the patient, and the majority stated that they rarely tell the bad news to their companions. In contrast, in the study of

Al-Mohaimeed *et al.* (2013), most participants stated that they only broke the bad news to their companions.^[7] Considering that according to the SPIKES protocol, bad news should not be broken to their companions before evaluating the patient's capacity to accept bad news, it can be concluded that the participants in this study had a favorable view of this field, which is inconsistent with the study of Al-Mohaimeed *et al.* (2013).^[7] In this study, 77.1% of the interns stated that they never give bad news over the phone, which is not consistent with the studies of Mostafavian *et al.* (2018).^[21] It seems that the desire of people to break bad news on the phone is to reduce the stress and anxiety created when facing the patient.

In the current study, most of the participants stated that they "usually" respect privacy when BBN to patients, but in the study conducted by Biazar *et al.* (2019),^[22] most of the participants stated that "mostly" they respect the patient's privacy. Also, in that study, most participants said they turned off their mobile phones when BBN. In the present study, most participants stated that they usually avoid things that cause interruptions in the conversation with the patient and rarely talk about environmental conditions (such as providing sugar water or a napkin) before BBN to the patient. Perhaps it can be said that the poor point of view of the people of this study compared with the study conducted by Biazar *et al.* (2019) is because of the conditions in teaching hospitals where it is more difficult respecting the patient's privacy and avoid situations that cause interruptions in the conversation with the patient. However, with proper training of interns and emphasizing the importance of this critical step of BBN to the patient, the view of interns in this field can also be improved. In this study, the majority of the participants stated that they usually collect and study information related to the individual's disease before BBN to the patient, which is consistent with the study of Al-Sabaawi *et al.* (2021).^[19] Therefore, it seems that the interns have a favorable view of this field, which can be improved with better training. Also, in this study, most participants stated that before BBN to the patient, they check to what extent the patient is currently aware of his problem and how much more he or she wants to know about his disease, which is consistent with the study of Jameel *et al.* (2012).^[18]

In this study, most participants have stated that they try to create a sense of trust in the patient, which is consistent with the study by Ferreira da Silveira *et al.* (2019).^[14] and represents the optimistic view of the interns studied. In addition, in the present study, most participants stated that they allow patients to express their feelings, which is consistent with Mustafavian's study (2018).^[21] In the current study, most of the interns stated that they always allowed the patient to ask questions and were bound to empathize and create a sense of hope in the

patient, which is also consistent with the study of Biazar *et al.* (2019).^[22]

Less than half of the participants in our study were expected to determine the patient's follow-up plan at the same meeting. A similar result was obtained in the study by Sarwar *et al.* (2019).^[23] Therefore, it seems that the dominant view of the studied interns is that they only break the bad news to the patient, and after that, they neglect the importance of determining the treatment plan. In addition, less than half of the participants provide easy communication conditions for the patient after BBN. Considering the importance of patient follow-up during treatment, it seems necessary to increase their awareness of this issue by adequately training interns. In the field of physician's individual preferences, more than half of the interns scored less than in the second quarter, which indicates the poor point of view of the interns in this field. Also, when examining the scores obtained by interns in three other areas (management of environmental conditions, how to break bad news, and actions after BBN) and the scores obtained from the entire questionnaire, similar results were obtained. Therefore, according to this research, the opinion of the interns participating in this study is poor in all areas, consistent with other studies^[7,16-18] and inconsistent with the studies conducted by Al-Sabaawi (2021) and Ferreira da Silveira *et al.* (2019).^[14,19]

Regarding the physician's individual preferences and management of environmental conditions, gender, age, and marital status did not significantly affect the points obtained. However, in the fields of how to break the bad news to patients and actions after BBN to patients regarding gender and age, there was a significant difference in the points obtained. Men had a weaker viewpoint than women (P value = 0.0001 and 0.002), and with increasing age, the view decreased (P value = 0.007 and 0.015). Also, in examining the points obtained from the whole questionnaire, men had a weaker view than women (P value = 0.038). Therefore, based on this study, it seems that women have a better perspective when BBN and after that, in terms of paying attention to essential details, including respecting the patient's privacy, providing suitable environmental conditions for BBN, empathy, and creating a sense of hope in the patient. In justifying the weakening of the participants' views with age, it can be said that increasingly dealing with unfortunate life experiences or repeating the experience of BBN to patients with age reduces attention and ignores important details when BBN for patients and afterward.

Limitation and recommendation

Due to the nonparticipation of all interns, this is our study limitation, so it is recommended to conduct similar studies on a larger scale to obtain more accurate

results. Considering the importance of the topic, a specific lesson unit under the title of communication with the patient and how to convey bad news to the patient and the patient's companion in accordance with the new educational curriculum of general medicine and preferably before the start of the internship to all students of Guilan University of Medical Sciences for training is considered. This skill is recommended for medical students. Also, to ensure the effectiveness of teaching this skill to medical students and to check the effect of that, similar studies can be conducted in the form of pre- and posttest before and after teaching this skill. It is also recommended to conduct similar studies at other universities of medical sciences in Iran.

Conclusions

Based on the results of the present study, many of the interns studied were not trained in BBN. Additionally, many interns felt anxious about telling the patient bad news. After examining the views of interns in four areas of physician's individual preferences, management of environmental conditions, how to break bad news, and actions after BBN to the patient, more than half of the interns had a poor view in all areas.

Therefore, considering the necessity of this skill as unavoidable for physicians to effectively communicate with patients and prevent them from being disappointed and discouraged from continuing the treatment process, it is recommended that the educational curriculum of the field of general medicine be revised to teach the skill of BBN to patients as best and as effectively as possible.

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Conflicts of interest

There are no conflicts of interest.

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