Al-Rafidain J Med Sci. 2025;9(2):127-135.
DOI: https://doi.org/10.54133/ajms.v9i2.2365

A J M S
Online ISSN (2789-3219)

Research Article

Effectiveness of an Educational Program on Hospital Nurses' Attitudes and Barriers Regarding Truth-Telling to Terminally Ill Patients in Erbil City

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Received: 30 July 2025; Revised: 25 September 2025; Accepted: 30 September 2025

Abstract

Background: Truth-telling to patients who are near death is a debatable and challenging topic in medical ethics. Providing patients with accurate information about their condition, especially when the news is unfavorable, such as a terminal diagnosis or a poor prognosis, is known as "truth-telling" in healthcare. ***Objective***: to assess the effectiveness of an educational program on hospital nurses' attitudes toward truth-telling with terminally ill patients in Erbil City. ***Methods***: A quasi-experimental study was conducted at four teaching hospitals in Erbil City. A non-probability (convenience) sample of 128 hospital nurses was selected, comprising 64 nurses in the intervention group and 64 nurses in the control group. Both groups completed a pretest, and only the intervention group received the educational program. For both groups, the post-test was given one month after the educational program. ***Results***: There was a highly significant difference regarding hospital nurses' attitudes toward truth-telling to terminally ill patients between the period before and after applying the educational program. In the intervention group, the majority of participants (73.2%) had neutral attitudes at the pre-test. After application of the educational program, most nurses (68.1%) expressed a positive attitude at the post-test. Common barriers among nurses include patients feeling hopeless and families requesting. Only a significant association was detected between nurses' attitudes and their gender. ***Conclusions***: The study concluded that implementing the educational program resulted in an improvement in nurses' attitudes toward truth-telling with terminally ill patients.

Keywords: Breaking bad news, Palliative care, Terminal illness, Truth-telling.

فاعلية برنامج تثقيفي على اتجاهات ممرضات المستشفيات ومحدداتهم فيما يتعلق بقول الحقيقة للمرضى المصابين بأمراض عضال في مدينة أربيل

الخلاصة

الخلفية: إن قول الحقيقة للمرضى الذين هم على وشك الموت هو موضوع قابل للنقاش وصعب في أخلاقيات مهنة الطب. يعرف تزويد المرضى بمعلومات دقيقة حول حالتهم، خاصة عندما تكون الأخبار غير مواتية، مثل التشخيص النهائي أو سوء التشخيص، باسم "قول الحقيقة" في الرعاية الصحية. **الهدف**: تقييم فعالية برنامج تثقيفي على اتجاهات ممرضات المستشفيات تجاه قول الحقيقة مع المرضى المصابين بأمراض عضال في مدينة أربيل. **الطرائق**: أجريت دراسة شبه تجريبية في أربعة مستشفيات تعليمية في مدينة أربيل. تم اختيار عينة غير احتمالية (ملائمة) من 128 ممرضة مستشفى، تضم 64 ممرضا في مجموعة التدخل و 64 ممرضا في المجموعة الضابطة. أكملت كلتا المجموعتين اختبارا تمهيديا، وتلقت مجموعة التدخل فقط البرنامج التعليمي. بالنسبة لكلتا المجموعتين، تم إجراء الاختبار اللاحق بعد شهر واحد من البرنامج التعليمي. **النتائج**: كان هناك فرق معنوي للغاية فيما يتعلق باتجاهات ممرضات المستشفيات تجاه قول الحقيقة للمرضى المصابين بأمراض عضال بين الفترة التي سبقت وبعد تطبيق البرنامج التعليمي. في مجموعة التدخل، كان لغالبية المشاركين (73.2٪) مواقف محايدة في الاختبار المسبق. بعد تطبيق البرنامج التعليمي، أبدت معظم الممرضات (68.1٪) موقف إيجابي في الاختبار اللاحق. تشمل الحواجز الشائعة بين الممرضات المرضى الذين يشعرون باليأس وطلب العائلات. تم اكتشاف ارتباط كبير فقط بين مواقف كادر التمريض وجنسهم. **الاستنتاجات**: خلصت الدراسة إلى أن تنفيذ البرنامج التعليمي أدى إلى تحسن اتجاهات الممرضات تجاه قول الحقيقة مع المرضى المصابين بأمراض عضال.

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Article citation: Mohammed AI, Abdulla SA. Effectiveness of an Educational Program on Hospital Nurses' Attitudes and Barriers Regarding Truth-Telling to Terminally Ill Patients in Erbil City. *Al-Rafidain J Med Sci.* 2025;9(2):127-135. doi: https://doi.org/10.54133/ajms.v9i2.2365

INTRODUCTION

In healthcare and medical ethics, telling the truth to patients who are near death is a debatable and challenging topic. The dilemma of whether to be honest with patients who are in the end stage of life regarding their diagnosis and prognosis frequently arises for health professionals. In the healthcare field, truth-telling refers to providing patients with accurate and truthful information about their condition, particularly when such information is unfavorable, such as a terminal diagnosis or poor prognosis [1]. "Truth-telling" also refers to other terms such as "delivering bad news," "truth disclosure," "telling bad news," "breaking bad news," and "naked truth" [2]. Most end-of-life patients, before death, follow a period of terminal illness. It can be defined by terms such as "terminal illness," "end-of-life," and "palliative care." They have a similar meaning [3]. The terminal illnesses include cancer and noncancer diseases, such as dementia, end-stage renal disease, heart failure, motor neuron disease, and other serious diseases. According to some studies, approximately 40 million people worldwide require end-of-life care each year, a number expected to double by 2060 [4]. Palliative care is frequently required for people who are near death. The goal of palliative care is to enhance the quality of life for patients and their families,

including their spiritual and psychological needs, as well as the management of pain and other symptoms [5,6]. Until the second half of the 20th century, most health professionals believed that they should withhold terminal diagnoses and poor prognoses from patients as long as possible to protect patients from emotional distress. Health professionals believe that patients would have a better chance of recovery if they had less information about their health condition, because knowing bad news can cause their conditions to worsen more quickly. Therefore, most of them do not disclose the truth to patients [1]. However, this idea underwent significant changes, and health professionals began to believe that they should inform patients of the truth about their diagnoses. They believed that, ethically, patients had the right to information about their health, and they aimed to improve patient satisfaction. Then, truth-telling became common in many countries. However, to date, it remains unclear in Islamic countries [7]. Many times, nurses withhold information from terminally ill patients when the news is terrible. Many factors compel nurses to be dishonest to patients, including cultural influences, organizational factors, family requests, and a lack of information. Commonly, in the health care system, an information concealment is to protect patients from harm [8]. Due to cultural differences, the attitudes about truth-telling vary among countries. In Western countries, health staff should commonly tell the patient first because it is their right to know everything about their health. However, in Eastern countries, health staff (doctors and nurses) should be honest with patients' families, rather than protecting patients from feeling hopeless. Patients often remain unaware of the truth about their health condition until the end of their life [7]. For example, in Saudi Arabia, a Middle Eastern culture with a predominantly Muslim population, oncologists frequently first informed the patient's family about their cancer, and the family would then make decisions regarding the course of treatment and any necessary medical interventions [9]. Additionally, the non-disclosure of diagnosis to patients is a common issue in end-of-life care in China. Most patients are unaware of the malignant prognosis; family members typically make this decision [10,11]. However, in the United States, truth-telling is covered under the broad heading of “patient rights," which asserts that patients should receive guidance from their physicians as to the best course of action and that they have the right to receive truthful information and to discuss the treatment and risks [12]. According to Khaki *et al*. [13], in one study, 90% of patients said that a nurse's primary responsibility is emotional support. Therefore, nurses must learn how to help patients prepare for, understand, and handle bad news.

Study significance

Nurses often find themselves in challenging situations when providing information to patients and their families, particularly when the information is distressing regarding end-of-life issues. It is essential to recognize that truth-telling is a significant challenge faced by health professionals, including nurses, daily [1]. According to Wahyuni *et al.* [14], telling bad news is one of the most stressful and challenging tasks for nurses because educating patients about life-threatening diagnoses is equivalent to giving a bomb to the patients. Telling bad news does not always elicit negative responses from patients. It improves communication between patients and nurses. Telling the truth can help patients make informed decisions and build trust. Moreover, suppose this issue is not addressed correctly. In such cases, it may lead to inadequate communication among nurses, physicians, patients, and their families; increase emotional distress; escalate legal conflicts; and compromise patients' quality of life in the final stages of their lives [7]. Despite facing challenges such as patient blaming, role ambiguity, and a lack of knowledge, nurses have the potential to positively influence patients through their attitudes toward truth disclosure. When nurses have a positive attitude toward truth disclosure, it can significantly impact patients, improving their emotional well-being and contributing to a better quality of life [15]. By improving nurses' attitudes toward caring for terminally ill patients, they can enhance their ability to initiate conversations with patients or family members about complex topics, manage emotional reactions, and strengthen their relationships with patients [16]. Additionally, nurses with a positive attitude appear to be more competent in managing symptoms of terminally ill patients and have a better understanding of end-of-life care. Likewise, they can help patients and their families make informed decisions between palliative care and treatment, ultimately choosing the right option. Therefore, nurses’ attitudes should be improved to enhance the quality of palliative and end-of-life care [17]. The study's findings can inform a training program designed to enhance hospital nurses' decision-making abilities and address knowledge gaps, as well as guide nursing education and inform law enforcement. Furthermore, a large portion of the current study is centred in both Eastern and Western nations. This study offers new cultural insights into how the truth is perceived and interpreted in societies with diverse family roles, beliefs, and communication conventions, particularly in Middle Eastern or Kurdish settings. The main research question was "Does the educational program affect hospital nurses' attitudes toward truth-telling to terminally ill patients?" The study's primary objective is to evaluate the effectiveness of an educational program on hospital nurses' attitudes toward truth-telling with terminally ill patients and to identify barriers to truth-telling with terminally ill patients among nurses in Erbil City. Likewise, to investigate the association between the hospital nurses' attitudes and the selected socio-demographic characteristics.

METHODS

Design of the study

A quasi-experimental study design was employed, utilizing both the intervention and control groups in the pre-test and post-test phases of this study. A quasi-experimental design was chosen because it was not feasible to randomly assign nurses in a hospital setting due to organizational constraints such as clinical workflow, scheduling difficulties, and limited resources, with staffing and patient care needing to continue uninterrupted. Denying some groups' access to programs that encourage more truth-telling would also be unethical. As a result, this design offers a helpful approach for evaluating the effects of educational programs on nurses' attitudes in real-world environments. The study was conducted in Erbil city at West Emergency Hospital and Nanakaly Teaching Hospital for Blood Diseases and Cancer (for the control group) and at Rizgary Teaching Hospital and Hawler Teaching Hospital (for the intervention group). The study was conducted during June 1, 2024, and July 20, 2025. The hospital was chosen for the following reasons: 1) There are a lot of nurses who deal with terminally ill patients in many different departments of the hospital; 2) Availability of educational process requirements, such as an appropriate room; 3) Hospital authorities allow nurses to participate in educational programs. The control and intervention groups are located in two different hospitals to prevent bias, and participants have not been in contact with each other.

Sample size and sampling technique

G*Power software was used to calculate the sample size, which resulted in 128 participants. The calculation of sample size was based on a medium effect size (0.5), an alpha level of 0.05, and a power of 0.80. Sixty-four participants were compared between the two groups in the study. A convenience sample, which is a non-probability sampling technique, was employed.

Inclusion criteria

Hospital nurses who cared for terminally ill patients in teaching hospitals have three years or more of experience, have different educational levels, participated in the pretest, and are from both genders.

Exclusion criteria

Other health staff who are not nurses.

Educational program

The educational program was conducted for the intervention group in two teaching hospitals in Erbil city, with sessions commencing on December 4, 2024, and concluding on January 10, 2025. The academic program was attended by sixty-four hospital nurses who were part of the intervention group. Two sessions were used to present the educational program. The session lasted 2-3 hours. Each participant took a pretest to assess their attitudes toward truth-telling to terminally ill patients before the program started. It took 15-20 minutes. After the pretest, a presentation is given to hospital nurses in the quiet room, according to the nurses ' available time. The researcher personally delivered the sessions using lecture teaching methods. The researcher created a brochure for participants in both Kurdish and English, which was reviewed by experts. Following the presentation, there was time for questions and discussion, which proved to be the most effective element of the program. Most of the participants debated about their opinions, experiences, and problems that they faced in their workplace related to truth-telling. Additionally, brochures supported recollection and reinforced key concepts, making them helpful take-home materials. One month after the program began, a post-test was administered to every member of the intervention group. Except for the educational program, the control group underwent the same processes as the intervention group. Both the pre-test and post-test, as well as the intervention and control groups, were administered the same questionnaire. The questionnaire was divided into three sections, including sociodemographic variables (8 items), nurses' attitudes (25 items), which inquired about nurses' attitudes toward disclosing the truth to terminally ill patients, and truth-telling barriers among nurses (25 items). Questions are based on a 5-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). Three categories are used to classify the general level of attitudes: positive, neutral, and negative. There was no formal assessment of fidelity. However, the researcher ensured that the same facilitator led each session to maintain consistency.

Ethical consideration

Ethical approval was obtained from the ethics committee at Hawler Medical University's College of Nursing before data collection. Permission to access the hospital nurses enrolled in the educational program was obtained from the General Directorate of Health in Erbil City. Before collecting data, the researcher verbally explained the study's objective to the participants and clarified that participation is voluntary.

Data analysis

The following statistical tests were applied to these findings: The Statistical Package for the Social Sciences (SPSS) will be used for quantitative data analysis (Descriptive Statistics, Paired t-test, chi-square test, and independent t-test). A *p*-value less than 0.05 will be considered statistically significant. Microsoft Excel will also be used to generate the charts and produce the tables.

RESULTS

Table 1 shows that the majority of participants in the intervention group (56.3%) fell within the 35-44 age range, with a mean age of 41.30±7.83 years. All participants were Muslim and Kurdish, with the majority (59.4%) being male. The majority (68.8%) had a nursing diploma. More than half (54.7%)

worked for 6 to 15 years. Less than half (43.8%) had studied the care of terminally ill patients during their academic study, with most of them taking only one course (66.7%). Furthermore, only 25% of participants had participated in hospital education programs about terminal diseases. Regarding participants in the control group, Table 1 indicates that 43.8% of participants fell within the age range of 35 to 44 years. Males made up more than half of the participants (54.7%). All of the participants were Muslim and Kurdish, similar to the intervention group. Most of the participants (64.1%) had a nursing diploma. The majority of participants (51.6%) had worked for 6 to 15 years. More than half (53.1%) had studied the care of terminally ill patients during their academic study, and most of those (55.9%) took only one course. Furthermore, 40.6% have participated in terminal illness education programs offered by hospitals. Table 2 compares hospital nurses' attitudes toward truth-telling to terminally ill patients before and after an educational program. Several attitude items showed statistically significant improvement post-training. Especially, agreement rose for customizing information depending on patients' backgrounds (p= 0.000), and it was included in ethical nursing practice (p= 0.001).

Table 1: Socio-demographic characteristics of the study participants group regarding the intervention and the control group (n= 64 for each group)

Variables	Categories	Intervention group	Control group
Age Group (year)		41.297±7.827	37.766± 8.591
	< 25	0(0.0)	2(3.1)
	25–34	10(15.6)	22(34.4)
	35–44	36(56.3)	28(43.8)
	45–54	13(20.3)	8(12.5)
	≥55	5(7.8)	4(6.3)
Gender	Male	38(59.4)	35(54.7)
	Female	26(40.6)	29(45.3)
Nationality	Kurdish	64(100)	64(100)
Religion	Islam	64(100)	64(100)
Certification	Nursing high school	3(4.7)	4(6.3)
	Diploma in nursing	44(68.8)	41(64.1)
	Bachelor in nursing	16(25)	19(29.7)
	Master in nursing	1(1.6)	0(0.0)
Work experience in nursing (year)	< 6	3(4.7)	11(17.2)
	6–15	35(54.7)	33(51.6)
	16–25	19(29.7)	18(28.1)
	≥26	7(10.9)	2(3.1)
Studied terminally ill patient care during academic study	Yes	28(43.8)	34(53.1)
	No	36(56.3)	30(46.9)
Participated in a hospital educational program on terminal illness	Yes	16(25)	26(40.6)
	No	48(75)	38(59.4)

Values were expressed as frequency, percentage, and mean±SD.

Table 2: Comparison of Nurses' Attitudes Toward Truth-Telling to Terminally Ill Patients (Pre-test and Post-test) *(n* = 64)

Item Statement	Pre-test	Post-test	*p*-value
I believe nurses should give information to patients based on their emotional, spiritual, and social backgrounds.	3.28±1.2	3.95±0.52	<0.0001
I believe a nurse's current knowledge level is not sufficient to care for terminally ill patients effectively.	2.5±1.11	2.3±1.03	0.287
Nurses need to be honest with patients about their condition, even if it's a terminal illness.	3.39±1.16	3.41±0.89	0.932
I think it is easier for nurses to care for patients who know the truth than those who do not.	3.64±1.16	4.06±0.43	0.007
I think providing truthful information to patients is part of ethical nursing practice.	3.61±1.14	4.14±0.5	0.001
In our culture, I believe the truth should always be told to the family first.	4.02±0.93	4.13 ± 0.45	0.401
I believe most patients do not want to know all the information about their disease.	3.20±1.1	3.05±1.23	0.45
I think truth-telling depends on the patient's age.	2.86±1.01	3.83±0.63	<0.0001
Nurses can speak on patients' behalf as their advocates to promote patients' wishes.	3.00±1.1	3.36±0.95	0.050
I believe nurses should have equal access to patient information as physicians to improve patient's quality of care.	4.03±0.99	4.0±0.47	0.82
I believe communicating the whole truth to terminally ill patients usually cause more harm than good.	2.77±1.16	3.66±0.8	<0.0001
I think nurses can always build strong relationships with terminally ill patients.	3.97±0.93	3.80±0.51	0.195
I think nurses should agree when a family requests to conceal the truth from patients.	3.88±1.03	4.03±0.35	0.254
I believe honesty with patients about their illnesses is essential for building trust.	3.91±1.08	3.98±0.7	0.628
I believe the patient's family should have the primary role in decision-making about their patient's health.	4.08±0.99	3.19±1.05	<0.0001
Nurses should inform patients about their health condition with informed consent, whatever the circumstance.	3.72±0.84	3.77±0.71	0.734
I think most patients are not aware of their terminal diagnosis.	2.50±1.08	2.17±0.63	0.038
Patients have a right to know all information about their health condition.	3.78±1.17	3.89±0.84	0.545

I believe telling the truth to terminally ill patients depend on the patient's culture.	3.05±1.31	3.80±0.57	<0.0001
I believe religious factors influence truth-telling to terminally ill patients.	2.94±1.05	3.80±0.54	<0.0001
I believe giving hope to patients is necessary for accepting their illness.	3.92±0.96	4.05±0.42	0.343
I believe that nurses are the most accessible source of information for patients.	3.50±0.98	2.25±0.67	<0.0001
Nurses should not be primarily responsible for breaking bad news to terminally ill patients.	2.03±1.22	2.23±0.71	0.252
I believe public places are the most appropriate place to break bad news to terminally ill patients.	2.89±1.33	2.08±0.51	<0.0001
I believe most patients easily accept their fatal disease.	2.22±1.17	2.31±0.69	0.583

Values were expressed as mean±SD.

Attitudes about patient age, culture, and religion (p= 0.000) also showed significant changes. Some things, such as belief in nurses' knowledge sufficiency (p= 0.287) and honesty as a trust-building factor (p= 0.628), did not change significantly. With a few statistically significant changes, the training generally had a good impact on several aspects of nurses' attitudes about truth-telling in end-of-life care. Table 3 presents nurses' attitudes toward truth-telling to terminally ill patients before and after an educational program. Most nurses (73.2%) showed a neutral attitude in the pre-test; 47.5% had a negative attitude, and just 31.9% reported a positive attitude.

Table 3: Overall Levels of Nurses' Attitude about Truth-Telling Before and After the Educational Program

Attitude Level	Pre-test	Post-test	p-value
Positive	15(31.9)	32(68.1)	0.001
Neutral	30(73.2)	11(26.8)	
Negative	19(47.5)	21(52.5)	
Total	64(50)	64(50)	

Values were expressed as frequency and percentage.

Attitude levels significantly increased after the educational program; 68.1% of nurses had a positive attitude, 26.8% had a neutral attitude, and just 52.5% had a negative attitude. A p-value of 0.001 indicates the program efficacy by suggesting a statistically significant change in attitude levels. Figure 1 shows the training level of nurses' attitudes on truth-telling in both groups. Data reveal that a high percentage of nurses in the intervention group (68.1%) achieved a positive attitude, compared to the control group (34.4%), indicating a favorable change after the training course.

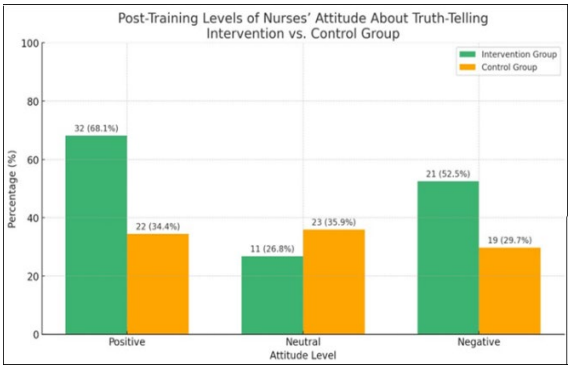

Figure 1: Comparison of nurses' attitudes toward truth-telling in the intervention and control groups after the educational program.

Furthermore, the intervention group had a somewhat lower proportion of nurses with a neutral attitude (26.8%) than the control group (35.9%). Interestingly, the intervention group reported a higher percentage of negative attitudes (52.5%) compared to the control group (29.7%). Table 4 presents descriptive statistics on perceived barriers to truth-telling to terminally ill patients among nurses in the intervention group (n= 64). The most agreed-upon barrier was the belief that bad news makes patients feel hopeless, with 82.8% of nurses agreeing or strongly agreeing.

Table 4: Descriptive statistics of barriers to truth-telling to terminally ill patients among nurses regarding intervention group (n= 64)

Barriers	Mean	Most Frequent Response	(Agree + Strongly Agree)	Neutral	(Disagree + Strongly Disagree)
Patients do not understand medical information, and telling the truth does not benefit them.	2.58	Disagree	29.7	12.5	57.8
Family members commonly request not to tell the truth to the patient.	3.88	Agree	79.7	10.9	9.4
Nurses might get into legal/hospital trouble if they tell bad news.	3.31	Agree	54.7	21.9	23.5
Cultural beliefs discourage truth-telling.	3.34	Agree	50	26.6	23.4
Nurses lack knowledge of how to break bad news.	2.86	Neutral	34.4	26.6	39
Nurses fear inability to support patients emotionally.	3.14	Agree	43.7	25	31.3
Uncertainty about diagnosis/prognosis.	3.52	Agree	64	15.6	20.3
Bad news makes patients feel hopeless.	4.03	Agree	82.8	9.4	7.9
Poor nurse-patient communication.	2.78	Neutral	28.2	29.7	42.2
Informing about bad news worsens quality of life.	3.38	Agree	57.9	14.1	28.2

Values were expressed as mean and percentage.

Family members requesting that the truth not be disclosed was also a significant barrier (79.7% agreement). Legal or institutional concerns (54.7%) and cultural beliefs (50.0%) were also notable barriers. By contrast, 57.8% of nurses disagreed with the idea that patients lack knowledge of medical information and so should not be told the truth. Overall, the emotional impact on patients and family emerged as the most prominent obstacle to truth-telling. Table 5 presents descriptive statistics on barriers to truth-telling to terminally ill patients, as reported by nurses in the control group (n= 64). The most frequently acknowledged barrier was family members requesting that the truth not be told, with 82.8% of nurses agreeing or strongly agreeing. A large majority also decided that bad news can make patients

feel hopeless (73.4%). Commonly endorsed as well were cultural beliefs (50.0%) and concerns about the effect on quality of life (50.0%). On the other hand, 59.4% of respondents disagreed or strongly disagreed with the idea that patients do not understand medical information and telling the truth does not benefit them.

Table 5: Descriptive statistics of barriers to truth-telling to terminally ill patients among nurses regarding control group (n = 64)

Barriers	Mean	Most frequent response	(Agree + Strongly agree)	Neutral	(Disagree + Strongly disagree)
Patients do not understand medical information, and telling the truth does not benefit them.	2.5	Disagree	20.4	20.3	59.4
Family members commonly request doctors and nurses not to tell the truth to the patient.	3.84	Agree	82.8	1.6	15.6
Nurses might get into legal problems or trouble with hospital authorities if they tell bad news to the patients.	3.22	Agree	56.3	10.9	32.9
Cultural beliefs are the reason for not telling the truth to terminally ill patients.	3.23	Agree	50	18.8	31.2
Nurses who care for terminally ill patients do not have enough knowledge about breaking bad news.	2.90	Neutral	28.1	35.9	36
Nurses fear they may be unable to support patients emotionally after delivering bad news.	3.42	Agree	56.3	23.4	20.4
Uncertainty about the diagnosis or prognosis makes nurses not tell the truth.	3.34	Agree	56.2	20.3	23.5
Bad news makes patients feel hopeless.	3.87	Agree	73.4	14.1	12.5
Nurses do not have strong communication with terminally ill patients.	2.17	Disagree	10.9	17.2	71.9
Patients do not have a good quality of life if informed about the bad news.	3.29	Agree	50	17.2	32.8

Values were expressed as mean and percentage.

Table 6 presents the association between hospital nurses' attitudes and socio-demographic characteristics following an educational program. Although there were differences in the responses depending on these characteristics, the results indicate that nurses' attitudes and gender (p= 0.042) were significant. In contrast, age group (p= 0.052), certification (p= 0.206), and work experience (p= 0.404) had no significant association. While female nurses were more likely to "Agree," male nurses tended to have more "Neutral" and "Strongly Disagree" responses. Work experience did not significantly affect nurses' attitudes; however, those with less than 6 years of experience had a higher percentage of "Disagree" responses. Whether nurses had studied terminally ill care during their education had no significant association with their attitudes (p= 0.957). Participation in hospital educational programs related to terminally ill care did not significantly influence attitudes (p= 0.316).

Table 6: Association between the hospital nurses' attitude and socio-demographic characteristics of The sample study in a training course

Variables		Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	p-value
Age Group (year)	25–34	2(20)	2(20)	3(30)	2(20)	1(10)	0.052
	35–44	7(19.4)	9 (25.0)	10(27.8)	5(13.9)	5(13.9)	
	45–54	4(30.8)	1 (7.7)	3 (23.1)	4(30.8)	1(7.7)	
	55+	0(0.0)	1 (20.0)	3 (60.0)	0(0.0)	1(20)	
Gender	Male	8(21.1)	6 (15.8)	14(36.8)	3(7.9)	7(18.4)	0.042
	Female	5(19.2)	7(26.9)	5(19.2)	8(30.8)	1(3.8)	
Certification	Nursing HS	0(0.0)	0(0.0)	2(66.7)	1(33.3)	0(0.0)	0.206
	Diploma	10(22.7)	11(25.0)	14(31.8)	4(9.1)	5(11.4)	
	Bachelor	2(12.5)	2(12.5)	3(18.8)	6(37.5)	3(18.8)	
	Master	1(100)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	
Work Experience (year)	Under 6	0(0.0)	1(33.3)	0(0.0)	2(66.7)	0(0.0)	0.404
	6–15	9(25.7)	7(20.0)	12(34.3)	3(8.6)	4(11.4)	
	16–25	4(21.1)	4(21.1)	5(26.3)	4(21.1)	2(10.5)	
	26+	0(0.0)	1(14.3)	2(28.6)	2(28.6)	2(28.6)	
Have you studied terminally ill patient care during your study period?	Yes	6(21.4)	5(17.9)	9(32.1)	4(14.3)	4(14.3)	0.957
	No	7(19.4)	8(22.2)	10(27.8)	7(19.4)	4(11.1)	
Have you participated in any hospital educational program on terminally ill patient care?	Yes	4(25)	2(12.5)	6(37.5)	4(25)	0(0.0)	0.316
	No	9(18.8)	11(22.9)	13(27.1)	7(14.6)	8(16.7)	

Values were expressed as frequency and percentage.

Although participants showed slightly more positive responses (e.g., 25.0% "Strongly Agree"), the differences were not statistically meaningful.

DISCUSION

The results of the current study showed that the majority of nurses in both the intervention and control groups were aged 35-44 years. This finding is consistent with the study by Abbaszadeh *et al*. [18], who showed that most nurses (47.3%) were aged 36-40 years. However, the present research disagrees with Cheng *et al*. [19], who revealed that most nurses (41.2%) were aged 26-35 years. Regarding gender, a high percentage of male nurses was observed in both the intervention and control groups. A similar result was observed in the study by Mohamed [20], which found that the majority of participants (63.3%) were male. In contrast, the present study's results differ from those of Mohamed and Abou-Abdou [21], who conducted a study in Egypt, which reported that the majority of participants (61.5%) were female nurses.

In many hospital units, nursing is predominantly a female occupation, whereas in the end-of-life care unit, it may be considered a stable, respectable, and functional vocation for males. For physically demanding jobs (such as lifting patients or working in emergency or critical care), hospital authorities might prefer more male nurses. Furthermore, men may be encouraged by their families to become nurses due to the status or financial stability that comes with working in hospitals. According to the study findings, all participants in the intervention and control groups were Kurdish and Muslim. The current outcome differed from the Ethiopian study by Antenh *et al.* [22], which found that nurses came from a diverse range of religious and ethnic backgrounds, including Orthodox, Catholic, Protestant, and Muslim, as well as ethnic groups such as Amhara, Tigray, and Oromo. According to the findings, the majority of nurses were Orthodox (84.9%) and Amhara (92%) in terms of ethnicity. Another study, conducted in the United States by Anderson *et al.* [23], found that the survey participants came from a variety of racial and ethnic backgrounds. Most study participants in both the intervention and control groups reported holding a diploma certificate in nursing. According to a study by Mohamed and Abou-Abdou [21], the majority of participants (43.2%) had diploma certificates, which is comparable to the current findings. In contrast to a Saudi Arabian study by Alsoqae *et al.* [24], which found that the majority of hospital nurses (54.7%) had less than 6 years of experience, the current study found that nearly half of the nurses in the control group (51.6%) and the intervention group (54.7%) had between 6 and 15 years of work experience, while very few nurses in each group had more than 25 years of experience. These findings are consistent with those of Abbaszadeh *et al.* [18], who found that the majority of participants had between 6 and 15 years of job experience. Regarding participants who studied the care of terminally ill patients during their study period, the current study demonstrated that more than half of the nurses in the intervention group had not taken any courses. However, more than half of the nurses in the control group had received training in caring for terminally ill patients. The number of studies found different results regarding nurses' education on the care of terminally ill patients. A survey by Khanali-Mojen *et al.* [25] in Iran found that most physicians and nurses (89.7%) received formal education on caring for terminally ill patients. In contrast, Al-Kindi *et al.* [26] found that most nurses (68.7%) had not received any palliative care education in Qatar. Similarly, in 2023, a study in Jordan by Altarawneh *et al*. [27] showed that most participants (84.2%) had not received palliative care training. Another research in Bangladesh, conducted by Sultana *et al.* [28], yielded a similar result, showing that most nurses (89.6%) did not participate in the educational program. In contrast, a study conducted in Palestine by Ayed *et al.* [29] reported a different result, with 59.4% of participants receiving training on terminally ill patient care, and the training period for more than half of them was one week or less. Similar results were found in a study conducted in Mongolia among 141 nurses by Kim *et al.* [30], which reported that most nurses (63.6%) participated in palliative care training at the hospital. The findings of the data analysis demonstrate that the evaluation of the educational program, conducted in both pre-test and post-test, has a favorable impact on the attitudes of nurses in the intervention group after the educational program for hospital nurses. The findings of the current study show that 73.2% of participants expressed a neutral attitude at the pre-test assessment. Following the application of the educational program, the results demonstrated that 68.1% of nurses expressed a positive attitude at the post-test assessment. The results of the present study are in line with a survey conducted by Hjelmfors *et al.* [31], who reported that more than half of the participants (58%) hold a neutral attitude among nurses regarding the disclosure of truthful information. In contrast, the study findings differ from those of a descriptive study conducted by Rayan *et al.* [15] in Jordan, which demonstrated that the majority of nurses (80.65%) had positive and good attitudes regarding delivering bad news. The present study supports the findings of Jeraine and Wakefield [32], who found that educational programs can positively change nurses' attitudes toward delivering bad news. This finding is also supported by Ahmad and Eid [16], who found that nurses' attitudes toward telling bad news improved after an intervention program. Regarding the nurses' attitudes, the present study found a highly significant difference at the post-test between the intervention and control groups in their attitudes among hospital nurses. In the post-test of intervention groups, most participants (68.1%) achieved positive attitudes. In the control group, most nurses (35.9%) held a neutral attitude towards the topic. Study results consistent with those of Jeraine and Wakefield [32] showed that nurses with limited knowledge tend to have a negative attitude toward delivering bad news to patients due to a lack of knowledge. In contrast, nurses in the post-intervention group improved their attitudes. Additional support is found in a study by Chen *et al*. [33], which found that participants in the experimental group had more confidence and a better perception of truth-telling to cancer patients than participants in the control group. These findings of the study also agree with those of Fang *et al.* [34], who show that participants in the intervention group had higher truth-telling confidence than those in the control group. The result of the current study in both intervention and control groups revealed that several barriers to hospital nurses influence truth-telling to terminally ill patients. Bad news makes patients feel hopeless, and family members commonly request not to tell the truth to the patient. These are the two main barriers that participants in both intervention and control groups mentioned. In addition, some participants mention that nurses' and terminally ill patients' communication is not a barrier to truth-telling. The result of the present study is compatible with the study conducted by Cheng *et al.* [19], which indicated that the most common barriers perceived by

nurses were fear of patients' negative emotions after truth disclosure (75.6%) and families wanting to conceal the truth from the patients (71.7%). Also, lack of nurses' capacity, time, and place are the other truth-telling barriers among nurses. Another study, conducted by Liu *et al.* [35], indicated that some barriers, including requests from patients' family members, patients themselves not wanting to know the truth, and a lack of communication skills, were identified as the most common barriers for hospital nurses in two tertiary hospitals in Shandong Province, China. In addition, Mohamed and Abou-Abdou [21] identified fear of patients' reactions (64.2%) and difficulty in choosing the right person to inform of bad news (42.6%) as key barriers. Rayan *et al.* [15] found that the lack of training on delivering bad news to patients was the most common barrier among Jordanian critical care nurses. A significant association was found between hospital nurses' attitudes and their gender, with a p-value of 0.042. This indicates that females tend to have more positive attitudes. No significant association was found between nurses' attitudes and their other demographic characteristics, with a p-value of ≤ 0.05. This result contrasts with the study conducted by Altarawneh *et al.* [27], which found no statistically significant difference in the attitudes of male and female nurses toward caring for terminally ill patients. Bagheri *et al*. [37] mention that social and cultural factors have a significant correlation with nurses' attitudes toward disclosing the truth to patients. In another study, Etafa *et al.* [38] stated that there is a statistical association between nurses' attitudes and their work experience, as well as their reading of sources on palliative care, which leads to more positive attitudes. Female nurses may exhibit more positive attitudes because they are often educated to value empathy, trust, communication, and patient-centered care, all of which are closely aligned with supportive and honest interactions in a clinical setting.

Limitations of the study

Convenience sampling was used in this study, which may have limited the extent to which the results can be applied. The sample might not accurately reflect the larger nursing population because participants were chosen based on their willingness and availability. All participants in this study were only Muslim and Kurdish nurses. Therefore, caution should be taken when applying these results to other settings. However, feasibility considerations led to the selection of convenience sampling, which enabled the inclusion of a sufficient number of participants within the study period. It is recommended that random sampling techniques be employed in future studies to enhance external validity and representativeness.

Conclusion

The effectiveness of the educational program is proven through the highly significant difference in overall nurses' attitudes about truth-telling to terminally ill patients between the pre and post-tests of the intervention group. A high percentage of nurses in the intervention group achieved a positive attitude, which was higher than in the control group. The main barriers that participants mentioned in both the intervention and control groups were that truth-telling was bad news, which made patients feel hopeless. Family members commonly request not to tell the truth to the patient in the process of telling bad news to terminally ill patients. There is a statistically significant relationship between hospital nurses' attitudes concerning their gender. It is recommended that educational programs for nurses in hospitals be conducted regularly to enhance their attitudes regarding truth-telling to terminally ill patients.

Conflict of interests

The authors declared no conflict of interest.

Funding source

The authors did not receive any source of funds.

Data sharing statement

Supplementary data can be shared with the corresponding author upon reasonable request.

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