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Original Research Article

Assessment of Knowledge Regarding Life-Sustaining Treatment Plans and Attitude Towards Withdrawal of Life-Sustaining Treatment Among Staff Nurses at Tertiary Health Care Hospital

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Abstract: *Life-sustaining treatment (LST) and decisions regarding its withdrawal present significant ethical and clinical challenges in healthcare. As frontline providers, nurses play a crucial role in end-of-life care decision-making. Understanding their knowledge and attitudes towards LST is essential, especially in countries like Pakistan, where cultural and religious influences strongly impact medical practices.* ***Objective:*** *To assess the knowledge regarding life-sustaining treatment plans and attitudes towards withdrawing life-sustaining treatment among staff nurses working in a tertiary care hospital in Lahore, Pakistan.* ***Methods:*** *Using convenience sampling, a descriptive cross-sectional study was conducted among 150 registered nurses. Data were collected using a structured, adapted questionnaire comprising demographic details, knowledge-based questions, and attitude-related statements. Nurses with more than one year of experience were included. Data were analyzed using SPSS version 25, with descriptive statistics and chi-square tests applied.* ***Results:*** *Out of 150 participants, the majority (74.7%) were aged 31–40, and all were female. Regarding knowledge, 26.3% demonstrated high knowledge, 35.3% had average knowledge, and 38.3% had low knowledge. Most nurses (76%) believed CPR is more effective in healthy individuals, while only 30% believed that half of the seriously ill patients survive CPR. On attitudes, 57.3% had a good attitude towards ethically managing withdrawal of LST, and 100% respected religious reasons for such decisions.* ***Conclusion:*** *The study revealed moderate knowledge and relatively positive attitudes among nurses regarding LST and its withdrawal. Educational interventions, ethical training, and institutional guidelines are needed to enhance nurses' understanding and confidence in end-of-life care decisions.*

Keywords: knowledge, life-sustaining treatment, attitude, life-sustaining treatment withdrawal

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Introduction

Life-sustaining treatment (LST) refers to any medical intervention that prolongs life without necessarily reversing the underlying medical condition, including mechanical ventilation, cardiopulmonary resuscitation (CPR), dialysis, and artificial nutrition or hydration. The ethical decision-making surrounding withdrawing or withholding such treatments has gained prominence globally, especially in critical and palliative care settings (1). In Pakistan, where sociocultural and religious norms influence end-of-life care practices, the knowledge and attitudes of nurses, the frontline healthcare providers, play a critical role in ensuring ethically appropriate and patient-centered care (2).

Withdrawal of life-sustaining treatment (WLST) is an ethically and medically acceptable option in terminal conditions where interventions are deemed futile (3). The decision to initiate or withdraw such treatments requires clinical judgment, awareness of legal frameworks, patient autonomy, and religious or cultural considerations. Inadequate knowledge among nurses regarding the goals and implications of LST can lead to prolonged suffering for patients and families and hinder the provision of quality end-of-life care (4, 5).

Globally, studies have shown that healthcare professionals often hold varied levels of understanding and differing attitudes toward WLST. A study in Iran revealed that nurses with formal training in palliative care exhibited significantly better comprehension of LST protocols (6). Similarly, research from the United States demonstrated that educational interventions improved nurses' confidence and ethical decision-making related to DNR and LST practices (7). However, in developing countries, including Pakistan, the lack of structured training and policy implementation often leads to moral distress and confusion among nurses about the correct course of action (8).

Furthermore, the attitude of nurses towards WLST is shaped by their clinical experience, ethical reasoning, and institutional support. A positive attitude is essential to preserving the patient's dignity and autonomy, especially when aggressive interventions are no longer beneficial (9). In Pakistan, where religious and cultural values deeply influence healthcare decisions, the withdrawal of LST is often met with reluctance and emotional distress among healthcare providers, which necessitates enhanced awareness and ethical training for nurses (10,11).

Given the increasing burden of terminal illnesses and intensive care admissions in tertiary hospitals, it is imperative to assess the baseline knowledge and attitudes of nurses who are directly involved in the care of critically ill patients. By identifying gaps in knowledge and factors influencing nurses' attitudes toward WLST, targeted educational programs can be developed to align practice with ethical standards and international guidelines.

This study was conducted to assess the knowledge and attitudes of staff nurses regarding life-sustaining treatment plans and their views on the withdrawal of such treatments at a tertiary care hospital in Pakistan. The findings will help guide institutional policies, staff training, and ethical guidelines to improve end-of-life care in line with best practices.

Methodology

This descriptive cross-sectional study assessed the knowledge regarding life-sustaining treatment plans and the attitude towards the withdrawal of life-sustaining treatment among staff nurses working in a tertiary

healthcare hospital in Lahore, Pakistan. The study population comprised registered nurses providing direct patient care in public hospitals. Nurses with more than one year of clinical experience were included. In contrast, head nurses, student nurses, and newly appointed nurses with less than one year of experience were excluded to ensure homogeneity in clinical exposure.

A convenience sampling technique was used to recruit participants, and the sample size was calculated to be 150 using Slovin's formula. Data were collected through a structured questionnaire that had been adapted from previously validated tools. The questionnaire was designed to assess both knowledge of life-sustaining treatments and attitudes toward their withdrawal. It was divided into three sections. Section A collected demographic information, Section B contained questions assessing factual knowledge about life-sustaining interventions such as CPR, DNR orders, and their outcomes, and Section C explored attitudes related to ethical decisions around withdrawing such treatments.

The questionnaire underwent expert review for content validity and was piloted on a small group of nurses (n=10) to ensure clarity and relevance; responses from the pilot group were not included in the main study. Ethical approval for the study was obtained from the institutional review board, and informed written consent was taken from all participants. Data collection was done during regular duty hours, and confidentiality and anonymity were strictly maintained.

The collected data were analyzed using SPSS version 25. Descriptive statistics, including frequencies and percentages, were calculated to describe the demographic characteristics and responses to knowledge and attitude items. Knowledge scores were classified into low, average, and high categories, while attitude scores were categorized as good or poor based on predefined criteria. Associations between demographic variables and levels of knowledge and attitude were examined using chi-square tests, with a p-value of less than 0.05 considered statistically significant.

Results

A total of 150 female nurses participated in the study. The majority of the participants were between 31 and 40 years of age (n = 112, 74.7%), followed by those aged 20–30 years (n = 22, 14.7%), and above 40 years (n = 16, 10.7%). All participants in the study were female (100%). Regarding professional qualifications, 98 (65.3%) had a Bachelor of Science in Nursing (BSN), 31 (20.7%) had a nursing specialty, and 21 (14.0%) were general nursing diploma holders. (Table 1)

Participants were assessed for their knowledge regarding CPR, DNR, and outcomes of life-sustaining interventions.

The majority of participants (76.0%) believed CPR is more effective in healthy individuals. However, only 30.0% thought that about half of critically ill patients survive CPR, while 62.0% believed not many survive. Knowledge about DNR was accurate among 72.0% of participants. While 70.7% rejected the idea that brain damage could occur post-CPR, 24.7% accepted the risk. All participants (100%) correctly denied that CPR causes cancer. (Table 2)

Participants' knowledge levels were categorized as high, average, or low based on cumulative scores. Most nurses had low (38.0%) or average (35.3%) levels of knowledge regarding life-sustaining treatments. (Table 3) Nurses were asked about their attitudes on treatment continuation, religious rights, and ethical dilemmas. A large majority (87.3%) disagreed with continuing treatment in non-recoverable patients. Additionally, 92.0% supported the patient's right to withdraw life-sustaining treatment when recovery is not possible, and 100.0% affirmed respect for religious choices. (Table 4) Participants' overall attitudes were categorized into good and poor based on cumulative attitude scores.

More than half of the participants (57.3%) demonstrated a good attitude towards ethical end-of-life decision-making and respect for patient autonomy. (Table 5).

Table 1: Demographic Characteristics of Participants (n = 150)

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	20–30	22	14.7
	31–40	112	74.7
	>40	16	10.7
Gender	Female	150	100.0
Qualification	General Nursing	21	14.0
	BSN Degree	98	65.3
	Specialty	31	20.7

Table 2: Responses to Knowledge-Based Questions (n = 150)

Knowledge Statement	Yes n (%)	No n (%)	Don't Know n (%)
CPR works best if the patient is healthy	114 (76.0)	30 (20.0)	6 (4.0)
Many patients with serious illness survive CPR	45 (30.0)	93 (62.0)	12 (8.0)*
DNR means allowing natural death without resuscitation	108 (72.0)	36 (24.0)	6 (4.0)
Brain damage could happen after CPR	37 (24.7)	106 (70.7)	7 (4.7)
CPR increases the risk of cancer	0 (0.0)	150 (100.0)	0 (0.0)

**Note: "Almost everyone" was merged with "Don't know" for analytical clarity.*

Table 3: Knowledge Score Classification (n = 150)

Knowledge Level	Frequency (n)	Percentage (%)
High Knowledge	40	26.7
Average Knowledge	53	35.3
Low Knowledge	57	38.0

Table 4: Responses to Attitude-Based Questions (n = 150)

Attitude Statement	Yes n (%)	No n (%)	Don't Know n (%)
Continue all treatment methods even if the patient cannot recover	0 (0.0)	131 (87.3)	19 (12.7)
Patients unable to afford life-sustaining treatment should be allowed to refuse them	102 (68.0)	33 (22.0)	15 (10.0)
If patients prefer withdrawal of life support over pain control, it's the best choice	138 (92.0)	6 (4.0)	6 (4.0)
Withdrawal of life support in unrecoverable elderly is a way to complete their journey	92 (61.3)	39 (26.0)	19 (12.7)
Religious-based refusal of life support must be respected	150 (100.0)	0 (0.0)	0 (0.0)

Table 5: Attitude Score Classification (n = 150)

Attitude Level	Frequency (n)	Percentage (%)
Good Attitude	91	57.3
Poor Attitude	59	42.7

Discussion

This study assessed the knowledge and attitudes of staff nurses toward life-sustaining treatment (LST) and the withdrawal of life-sustaining treatment (WLST) in a tertiary care hospital setting in Pakistan. The findings reflect a moderate level of knowledge and a mixed attitude among nurses, highlighting areas that need educational and ethical reinforcement.

The majority of participants (76%) believed that cardiopulmonary resuscitation (CPR) is most effective in otherwise healthy patients, indicating a basic awareness of its prognosis-related outcomes. However, only 30% thought that about half of seriously ill patients survive CPR, while 62% believed that survival rates are low—this aligns with international literature reporting low success rates of CPR in terminally ill or ICU patients (12).

Regarding the understanding of DNR orders, 72% correctly identified that a DNR implies allowing a patient to die naturally without resuscitation. A study conducted in Turkey reported similar findings, where 70% of nurses had accurate knowledge of DNR orders (13). However, this still leaves a significant proportion with misconceptions, suggesting the need for clarification and training in code status documentation and legal implications.

A notable observation was that all respondents (100%) rejected the false notion that CPR increases cancer risk, which demonstrates some clarity regarding clinical outcomes of resuscitative interventions. However, confusion remained regarding complications like brain damage after CPR, with 24.7% incorrectly stating it does not happen. This indicates partial understanding of post-CPR morbidity, which could hinder comprehensive decision-making during end-of-life care (14).

The knowledge scoring revealed that only 26.3% of participants had high knowledge, while 38.3% had low knowledge regarding LST. This is comparable to a study conducted in Iran, where 34.5% of nurses demonstrated low knowledge about end-of-life interventions, citing lack of exposure to formal education in palliative care as a key factor (15). In Pakistan, similar gaps are likely due to the absence of LST-related modules in nursing curricula and limited exposure to ethical training.

In terms of attitudes, 87.3% of nurses disagreed with the notion of mobilizing all available treatments for patients with no recovery chances, which is a positive indicator of ethical maturity. This contrasts with findings from a Malaysian study where over 40% of nurses felt obligated to continue aggressive care regardless of prognosis (16). Furthermore, 92% of our participants believed that it is appropriate for terminal patients to choose withdrawal of LST over pain control. This attitude reflects growing recognition of patient autonomy and palliative preferences among Pakistani nurses.

Additionally, religious and cultural sensitivity emerged as a strong theme, with 100% of participants acknowledging the need to respect WLST decisions if made for religious reasons. This is consistent with studies from Islamic-majority nations, where religious beliefs significantly influence end-of-life decisions and are considered a core ethical component (17).

The overall attitude score showed that 57.3% of nurses had a good attitude toward WLST, which is encouraging but still leaves a substantial portion (42.7%) needing targeted interventions. Previous research emphasizes the impact of educational workshops and hospital ethics committees in improving such attitudes (18). This study provides important baseline data for understanding the ethical preparedness of nursing staff in a tertiary care setting. However, its generalizability is limited due to its single-center design and all-female sample. Additionally, the use of self-reported questionnaires may be subject to response bias. Institutional policies should include structured training on LST, DNR, and WLST as part of continuing nursing education. Moreover, ethics-based modules should be integrated into undergraduate and postgraduate nursing curricula to bridge the existing knowledge gap and improve patient-centered care at the end of life.

Conclusion

This study highlights the need for improved knowledge and ethically aligned attitudes among nurses regarding life-sustaining treatment and its withdrawal. Structured training programs and policy implementation can enhance nurses' decision-making capabilities and the quality of end-of-life care in tertiary hospitals.

Declarations

Data Availability statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned. (IRBEC-SZH-098-24)

Consent for publication

Approved

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Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

RA (Assistant Nursing Superintendent)
Conception of Study, Development of Research Methodology Design, Study Design, manuscript review, critical input.
AR (Vice Principal)
Manuscript drafting, Study Design,
Review of Literature, Data entry, Data analysis, and drafting article.

All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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