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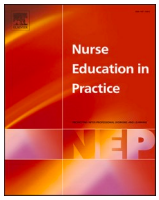

Development of a competency-based assessment template for oncology nursing: A participatory action research study

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ABSTRACT

Aim: The main objective of this study was to collaboratively develop a competency-based assessment template for oncology nurses.
Background: The care of oncology patients and their families requires very specific knowledge and skills, as well as that nurses are trained not only in theoretical and practical knowledge but also in competencies. There is a lack of specific tools to assess competencies in oncology and it is important to include students in the learning process.
Design: This study has a Participatory Action Research.
Methods: A focus group was conducted for data collection. The process consisted of 4 phases: 1- Identification of the problem; 2- Planning of the change; 3- Realization of the change; 4- Effect of the change and reflection. A purposive sampling where all the students of the master's degree in oncology nursing who wished to participate voluntarily were selected. A total of 23 students participated. The information was recorded and fully transcribed. Triangulation of researchers was used during data analysis.
Results: One of the most important aspects included in the new tool was the need for a comprehensive approach to people with oncological diseases and their relatives. The students emphasized the need to primarily address the physical, psychological and social dimensions in this approach.
Conclusion: This study developed a competency-based assessment template for oncology nurses, which includes the assessment of knowledge, skills and attitudes. The findings could help other oncology nurse educators or professionals to evaluate their training sessions and even their own knowledge in a healthcare setting.

1. Introduction

The world has experienced a significant increase in population and life expectancy in recent decades due to technological and medical breakthroughs (United Nations, 2022) However, this process has been accompanied by an increase in chronic diseases (WHO, 2019; WHO, 2022). Among those chronic diseases, cancer has become the second most common cause of death, only surpassed by cardiovascular diseases, with 9.3 million deaths recorded in 2022 (WHO, 2022).

The increase in the demand for healthcare for oncological pathologies means that specialized oncology training for nurses is required (Galassi et al., 2023). Care for patients with oncological diseases requires very specific knowledge and skills. This is because of both the complex nature of the processes involved (the role of nurse and case manager) and because of the patients' proximity to death in cases where the disease progresses (nurses trained in palliative care) (Parekh de Campos et al., 2022). In these situations, nurses need to be trained not only in theoretical and practical knowledge but also in competencies (Codorniu et al., 2013). The definition of nursing competencies is complex and not subject to a general consensus (Fukada, 2018). It includes the development of a wide variety of skills (critical thinking, problem solving, teamwork, etc.), attitudes and knowledge (Takase et. al, 2011).

2. Background

Training professionals in competencies to provide care for oncology patients is crucial (Codorniu et al., 2013; Oses Zubiri et al., 2020). Appropriate methodologies are required from the first stages of training if these competencies are to be developed (Carriles Ortiz et al., 2012). Recommendations for the use of active methodologies such as Problem-Based Learning (PBL), among other methodologies, are

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therefore not surprising (González-Hernando et al., 2013). These methodologies facilitate the nursing professional's development of critical thinking, enabling them to solve problems and make decisions (Morán et al., 2016).

Various authors have identified difficulties with competency-based assessment in nursing (Dumpe et al., 2007; Axley et al., 2008; Clifford, 2020). These difficulties may be due to a lack of consensus on their definition (Clifford, 2020), the complexity of the items to be assessed (Fukada, 2018) or the lack of adequate tools (Helminen et al., 2017). The review by Immonen et al. (2019) emphasizes the importance of continuing to develop reliable and valid assessment tools with clear language and the need for opportunities for students and their teachers to reflect.

In the absence of specific tools to assess competencies in oncology and the need to include students in the learning process, our study aimed to collaboratively develop a template for competency-based assessment for oncology nurses.

3. Methods

We decided to carry out participatory action research (PAR), to be able to benefit from the students' participation and collaboration in the preparation of the assessment tool and to identify the perceived needs for change. PAR adopts a qualitative approach to change a situation based on a collaborative perspective (Parkin, 2009) and takes the contributions of the participants in the study and the researchers into account (Norton, 2018). It is an emerging and cyclical process (Parkin, 2009), where theory and practice relate to action and reflection (Reason et al., 2001).

3.1. Participants

Purposive sampling was performed, where all students on the master's degree course in oncology nursing who wanted to participate voluntarily in the construction of the evaluation tool were selected (N=23). On the first day of class, the study was explained and those students who wished to participate stayed voluntarily to conduct the focus group. The master's degree course is part of a postgraduate programme amounting to 60 ECTS credits taught at the University of Valencia, Spain. There were no exclusion criteria.

3.2. Procedure

The steps proposed by Norton (2018), based on the work of Lewin et al. (1946) were followed for the study procedure. It consists of four steps - observation, planning the change, carrying out the change and reflecting on the effect (Fig. 1). Data collection began in January 2023 and concluded in March 2023.

3.3. Step 1. Observation of the problem

The competences needed as oncology nurses were identified by students through a focus group. This method involves a group of people engaging in a structured discussion to examine a specific topic (Merton and Kendall, 1946). The questions ranged from more general issues to more specific aspects (Table 1).

The study and its objectives were introduced prior to the focus group session and those attending were thanked for their participation. The session took place in a classroom in the Faculty of Nursing and Podiatry, which is particularly suitable for this type of dynamic, with good lighting, a circular table and recording facilities contained in the classroom. The session was recorded with the participants' prior consent. It lasted 90 min. To ensure the students' impartiality and openness, the person facilitating the focus group and the transcription process was not a Faculty member, thereby guaranteeing the participants' anonymity. This person is an expert oncology nurse, working in an oncology unit

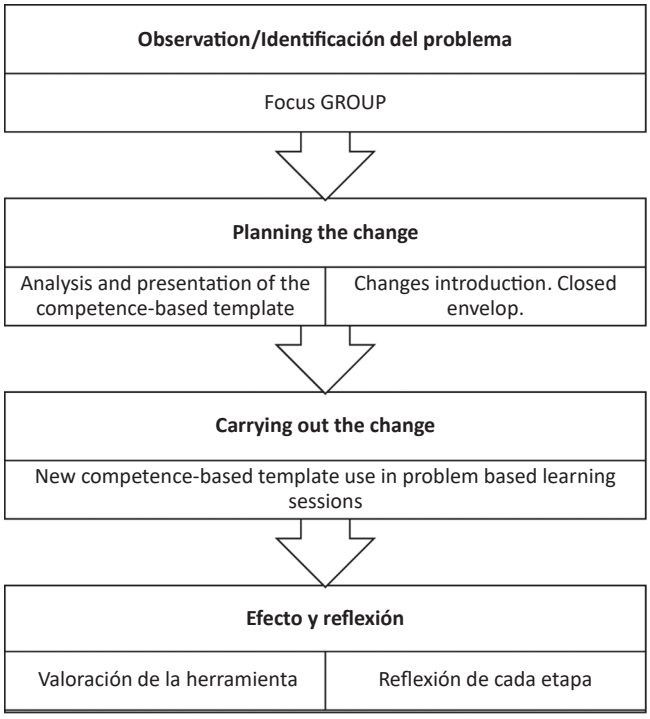

Fig. 1. Participatory action research. Steeps.

Table 1
Focus group questions.

Openning questions	*Tell me abour your experience in the Master*
Central questions	General questions about competency *What do you know about what a competency is?* *What competencies do you think it is important to acquire during the master's degree?* *In what aspects do you feel prepared to care for the oncology patient? And for the highly complex oncology patient? And for the palliative patient?* *What aspects do you think you need to work on or improve in relation to the care of the oncology patient? What do you fear the most or worry about the most?* *How would you like to be assessed in the case study, in the case of oral assessment work, what do you think is important?* *In the case of having to solve a situation/case what do you think is important for teachers to assess apart from theoretical knowledge?* *How do you know that you are learning in the process?* *If we were to evaluate oral communication, what elements would be present?* *If we were to evaluate collaborative teamwork (not task sharing) what elements would be present?* *Specific questions about palliative care and case management* *What competencies do you need to develop/what do you need to learn for the care of the physical aspects of patients with complex oncological situation?* *What competencies do you need to develop/what do you need to learn for the care of the psychological aspects of patients/families in complex oncological situation?* *What competencies do you need to develop/what do you need to learn for the care of social/family aspects in complex oncological situation?* *Do you know what resources you can offer to patients/families in complex situations? What aspects of these aspects would you like to be trained in?* *What competencies do you need to develop/what do you need to learn for the care of the spiritual aspects of patients?* *What do you need to reinforce in communication for when you find yourselves accompanying complex situations (disability, death, bereavement, etc.)?*
Closing of interview	Open question and answer session Acknowledgment and closing

and holds a master's degree and has experience of conducting focus groups.

3.4. Step 2. Planning the change

An exhaustive analysis of the information was carried out, unifying the needs perceived by the students with the basic template prepared by the research team beforehand. The initial template (Annex 1), which had previously been used on the master's degree course in oncology nursing for several years, was based solely on the learning skills within the PBL methodology. Competencies regulated by nursing institutions for providing both palliative care (Codorniu et al., 2013) and case management (Aguilera-Serrano et al., 2021) were included in this initial template.

The assessment tool developed after the focus group was conducted was presented to the students individually, anonymously and in sealed envelopes and they offered suggestions for its improvement. These proposals were compiled and used to prepare the final assessment template.

3.5. Step 3. Carrying out the change

After the changes to the assessment template had been made, the template was conducted to assess students in two PBL sessions, with two teachers participating simultaneously in two different group sessions. Two cases were presented. These required the students to seek a comprehensive resolution involving competencies related to case management and palliative care. The cases were resolved using PBL methodology in three sessions (Branda, 2013): The first included the presentation of the template, objectives and cases and the students hypothesized and developed a working plan; the second was devoted to work and resolving doubts; and the third consisted of a discussion-presentation session, followed by the teachers' and students' assessment of the learning process.

3.6. Step 4. Effect of the change and reflection

After the PBL sessions, the students and the teachers evaluated the experience and the usefulness of the tool. For this purpose, during the final PBL session, the students and teachers conducted an evaluation exercise of the experience, identifying positive points and areas for improvement, which included an assessment of the evaluative component. The researchers reviewed each step performed and their evaluative coherence with the competencies required for use in healthcare practice.

3.7. Data analysis

The data analysis was performed using a transcription and pairwise coding process. The coding and categorization were performed by two of the researchers. A third reviewer assisted with the triangulation of the information. The Colaizzi method (Morrow et al., 2015) was followed for processing the information. This entailed an initial in-depth reading of the participants' texts (A), followed by extraction of identifying texts (B), these texts were assigned representative codes (C) and the texts were grouped by meanings in categories (D); Finally, the phenomenon studied was described by means of interpretative writing (E). The ATLAS.ti 22 software package was used to analyse the texts.

3.8. Ethical considerations

The present study is part of a teaching innovation project approved by the University of Valencia (UV-SFPIE_PID-2078775). All the participants in the study were informed of the study and gave their informed consent. Permission to carry out the study was requested from the Dean's Office of the Faculty of Nursing and Podiatry.

4. Results

The competency-based template was developed in various stages; the changes are shown in Table 2.

4.1. Step 1. Observation of the problem

A total of 12 students participated out of the 23 members of the group (the total number of participants in the session). All the participants were women aged between 22 and 30 years old. As regards variability, not all the participants had experience in dealing with complex patients; one participant was from a different autonomous region in Spain and another was from another country. The focus group yielded two main categories with their respective subcategories. The results are presented in Fig. 2. The most significant results of the focus group are listed below:

4.2. Specific competences for healthcare practice

The "Symptom Management-Care" category was changed to "Comprehensive Care" to encompass a more holistic approach to care. A new category called "Physical Aspects Management" was added. This modification was due to the need expressed by the students to broaden their knowledge of nursing procedures, treatments and care related to this aspect:

> "S1: And then the reactions you get from the drugs, for example. I mean which ointments you can and can't use. Or telling them that it's better if they brush their teeth with alcohol-free chlorhexidine"

> "S8: …the drugs and the reactions each drug can cause. First the type of cancer, then what type of more general drugs are used. And within that, the effects can they trigger…"

> "S12: I think dealing with drainage, for example, because there are different types. We didn't cover that and I think it's quite important, especially for this type of patient"

Another aspect that the students felt was a cause for concern was the need to address psychological issues not only with the patients and their relatives, but also for the students themselves, especially in situations where death was a factor. For this reason, the subcategory was adjusted to include coping strategies, in addition to addressing the role of the team and the impact on the professional:

> "S12: How to react. For example, the first time I did an internship it was in oncology. And a man told me "I just want to die". And I just thought "What do I say to him?"

> "S6: Then we need psychological help too. Because whether you like it or not, because they're chronic, you get very fond of these patients and you can end up feeling terrible if they get worse or die"

Another need expressed was increasing knowledge related to bereavement. In this case, the previously created subcategory was reinforced, but this aspect was not changed:

> "S6: It's a little bit about knowing how to deal with the different types of grief that a relative may experience"

> "S3:…Well, you know the theory, you know a little bit about what grief could be like, the different types of grief and how the person might react, but you don't know how you're going to react to it until you see it"

Dealing with the patient's social relations and family also created uncertainty among students, both in terms of their access and the professionals they should turn to:

Table 2
Changes to the assessment template.

1st draft: Categories and subcategories after the literature review		*2nd draft: Categories and subcategories after the focus group*		*3rd draft: Categories and subcategories after the anonymous assessment*	
	Assessment of competencies for healthcare practice		*Assessment of competencies for healthcare practice*	*Assessment of competencies for healthcare practice*	
Basic theoretical principles	Understands the basic principles of palliative care, its philosophy and applies them correctly to the case	Basic theoretical principles	Understands the basic principles of palliative care, its philosophy and applies them correctly to the case	Basic theoretical principles	Understands the basic principles of palliative care **(adult and paediatric),** its philosophy and applies them correctly to the case
	Understands the basic principles of the nurse case manager, their tasks and applies them correctly to the case		Understands the basic principles of the nurse case manager, their tasks and applies them correctly to the case		*Understands the basic principles of the nurse case manager, their tasks and applies them* correctly to the case
Symptom management-care	Identifies the most common symptoms in advanced oncology/high complexity patients, and the various scales/questionnaires available to assess the patient and adapts them to the situation	**Comprehensive care**	Identifies the most common symptoms in advanced oncology/high complexity patients, and the various scales/questionnaires available to assess the patient and adapts them to the situation	Comprehensive care	Identifies the most common symptoms in advanced oncology/high complexity patients, and the various scales/questionnaires available to assess the patient and adapts them to the situation
	Correctly applies the different stages of the nursing care plan to the situation (assessment, diagnosis, planning, execution and evaluation, especially the first three) and does so in a way tailored to the case		Correctly applies the different stages of the nursing care plan to the situation (assessment, diagnosis, planning (non-pharmacological interventions, etc.) execution and evaluation, especially the first three) and does so in a way tailored to the case		Correctly applies the different stages of the nursing care plan to the situation (assessment, diagnosis, planning **(non-pharmacological interventions**, etc.) execution and evaluation, especially the first three) and does so in a way tailored to the case
	A timeline is established covering all the steps to be taken to monitor the situation		A timeline is established covering all the steps to be taken to monitor the situation		A timeline is established covering all the steps to be taken to monitor the situation
		Physical aspects management	**Applies and knows the procedures, treatments and care for the patient's physical changes**	Physical aspects management	Applies and knows the procedures, treatments **(administration, side-effects, etc.)** and care for the patient's physical changes
Psychological aspects management	Recognizes the psychological impact on the patient-family binomial in the situation (illness, death and bereavement)	Psychological aspects management	Recognizes the psychological impact on the patient-family-**team (staff)** of the situation (illness, *death and bereavement)* **and coping strategies.**	Psychological aspects management	*Recognizes the psychological impact on the patient-family- team (staff) of the situation (illness, death and bereavement) and coping strategies.*
Social aspects management in high complexity	All the professionals who they coordinate with as nurse case managers are taken into account	Social aspects management in high complexity	All the professionals who they coordinate with as nurse case managers are taken into account	Social aspects management in high complexity	All the professionals who they coordinate with as nurse case managers are taken into account
	The various associations, support groups, resources, etc. are taken into account. What the patient/family may need		The various associations, support groups**, socio-economic resources, grants** etc. are taken into account. What the patient/family may need		*The various associations, support groups, socio-economic resources, grants etc. are taken into account. What the patient/family may need*
	Tailored actions towards the family/primary caregiver are taken into account		Tailored actions towards the family/primary caregiver are taken into account		Tailored actions towards the family/primary caregiver are taken into account
Spiritual aspects management	The person's/family's personal, social and cultural beliefs and values are taken into account	Spiritual aspects management	The person's/family's personal, social and cultural beliefs and values are taken into account	Spiritual aspects management	*The person's/family's personal, social and cultural beliefs and values are taken into account*
Patient communication skills	Knows and identifies complex situations in terms of communication and the skills to address them in the patient-family binomial in the case	Patient communication skills	Knows and identifies complex situations in terms of communication and the skills to address them in the patient-family binomial in the case	Patient communication skills	Knows and identifies complex situations in terms of communication and the skills to address them in the patient-family binomial in the case
	Knows how to behave in terms of verbal and non-verbal communication in the case considered		Knows how to behave in terms of *verbal and non-verbal communication in the case considered*		Knows how to behave in terms of verbal and non-verbal communication in the case considered
Ethical and legal aspects	They are aware of the bioethical principles and apply them to the situation correctly	Ethical and legal aspects	They are aware of the bioethical principles and apply them to the situation correctly	Ethical and legal aspects	*They are aware of the bioethical principles and apply them to the situation correctly*
	Competencies for learning		*Competencies for learning*		*Competencies for learning*
Learning skills	Ability to formulate hypotheses. Ability to organize the work plan.	Learning skills	Ability to formulate hypotheses. Ability to organize the work plan.	Learning skills	Ability to formulate hypotheses. Ability to organize the work plan.
	Reasoning of information and adequate quantity and quality		Reasoning of information and adequate *quantity and quality*		Reasoning of information and adequate quantity and quality
	Use of relevant sources		Use of relevant sources		Use of relevant sources

(*continued on next page*)

Table 2 (*continued*)

1st draft: Categories and subcategories after the literature review		*2nd draft: Categories and subcategories after the focus group*		*3rd draft: Categories and subcategories after the anonymous assessment*	
			Practical application of the theoretical knowledge acquired		Practical application of the theoretical knowledge acquired **and it is applied to future situations**
Communication skills	Clarity and precision of presentation Waits for their turn to speak	Communication skills	*Clarity and precision of presentation* **Respectful attitude, waits for their turn to speak, listens to colleagues and respects their opinions**	Communication skills	Clarity and precision of presentation Respectful attitude, waits for their turn to speak, listens to colleagues and respects their opinions
	Participates in the learning process Explains concepts without reading		Participates in the learning process Explains concepts without reading, **knows/masters the subject** **Helps order the presentation or follows the agreed order**		Participates in the learning process **and has initiative** Explains concepts without reading, knows/masters the subject Helps order the presentation or follows the agreed order
Teamwork skills	Attendance and punctuality Completes the agreed tasks Time management Identification of weaknesses and strengths Is interested in acquiring knowledge from the other members of the group	Teamwork skills	Attendance and punctuality Completes the agreed tasks Time management Identification of weaknesses and strengths Is interested in acquiring knowledge from the other members of the group **Leadership skills**	Teamwork skills	Attendance and punctuality Completes the agreed tasks Time management Identification of weaknesses and strengths Is interested in acquiring knowledge from the other members of the group Leadership skills

Amendments in bold/support for students' needs in italics

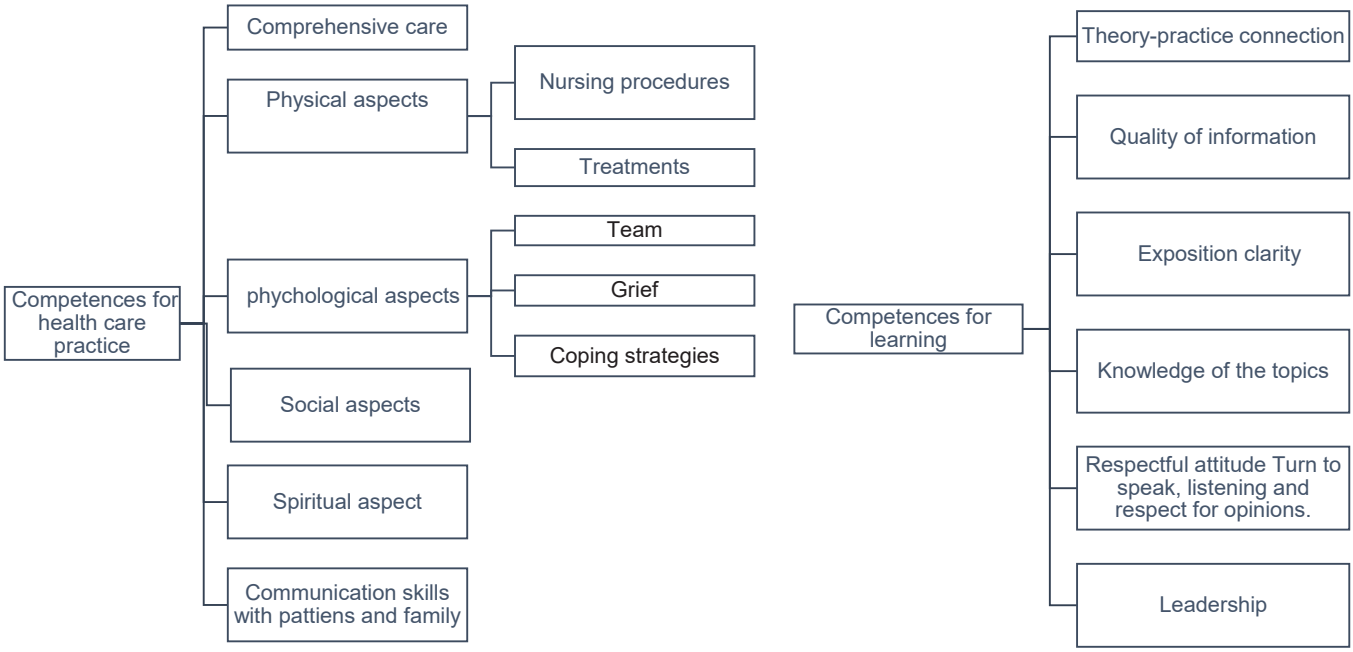

Fig. 2. Category tree.

"S1: …Who do I have to call, the social worker, the psychologist, is there an association? I don't know. I mean, tell me where I have to go to ask that question, not what resources there are"

"S2: … I need to know what resources I can access because there are a lot of them these days, once you're in the room, there are associations. And you don't know at what point you need to say "Right, I'm going to ask for a second opinion or ask for them to give a second opinion because we need the social worker"

The need to understand how to deal with or recommend socio-economic support and resources was identified. One of the subcategories was adjusted to cover both dimensions as a result:

"S3: Knowing how to ask these questions because you don't ask them, "Excuse me, what are your socio-economic circumstances?"

"S2: How you know what helps and what you have access to"

The need to develop spiritual skills was mentioned to a very limited extent and only handling religious issues was mentioned:

"S3: Knowing the basics of other religions, because in the end if you have someone who's a Catholic, you know you have to call the priest and you more or less know the basics and let them pray. But if you have someone who's a Muslim or any other religion that you have no

idea about… Knowing the basics of their religion to be able to understand them to a minimal extent."

Communication skills were closely linked to psychological management of the patient. The difficulties encountered were associated with actions related to non-verbal communication, particularly with dealing with expressions such as weeping. The items presented in the first version were reinforced:

"S3: And then talking to the patient. Sometimes they start crying and I feel, I don't know… And if I talk, I start crying too…"

"S6: For example, I get a call from children's oncology and the parents I'm talking to start crying. And I give them a hug and that's about it"

They did not mention any need to broaden their knowledge of ethical and legal aspects.

4.3. Competencies for learning

The need to connect theory with practice was identified in the aspects related to learning. As a result, we decided to add a new subcategory: Practical Application of the Knowledge Acquired:

"S3: Application of the theory, not just using the theory as it is, but applying it to the case. Taking the patient's circumstances into account, all the details. Not what you would do with a standard patient, what applies to that person"

The fact that the information sought in the work was also of high quality and this was assessed was emphasized:

"S2: …The quality of what you are looking for should also be valued. Because often how long it takes you to produce something isn't obvious"

The importance to the students of evaluating communication and particularly factors such as clarity and precision in the presentation, was also observed:

"S5: …It should be pleasant to listen to"

"S1: It should be short but useful"

"S8: It should summarize the most important concepts"

The need for students to demonstrate an in-depth understanding and command of the subject matter when making presentations was identified. Consequently, criteria were added which included the ability to explain concepts without reading and demonstrating knowledge of the subject matter:

"S11: You've looked at it properly"

"S8: They should really show that they've worked on it"

"S3: They should show some confidence, show that they know it. Even if you get nervous, you need to know that what you're saying is true"

"S2: They should know about the subject, know what they're talking about"

A respectful attitude both among peers and towards the teacher was considered important. Items such as waiting one's turn to speak, listening to other colleagues and showing respect for different opinions were therefore included:

"S6: The teacher's posture and the interest they show in the presentation are also influential. Pay a little attention to me, even if you're not really bothered"

"S2: And they should all show some interest"

"S1: Everyone's opinion should be taken into account. It shouldn't be just one person who calls the shots and says that this is the way to do it and it has to be done this way because I say so"

"S5: Everyone needs to feel comfortable within the group, to feel that they are useful"

The subcategory of " helps order the presentation or follows the agreed order " was added:

"S5: The groundwork needs to be well done, first and foremost. And then, when it comes to presenting it, there needs to be an order, if it is a group"

"S1: And then it needs to follow a logical order"

A new category was created in teamwork due to the need to assess leadership ability:

"S7: There also needs to be a leader to guide the work, but all perspectives should be taken into account and everyone should cooperate, even if one person decides "let's get on with it", because a leader is useful in all areas"

"S1: It shouldn't be just one person who calls the shots and says that this is the way to do it and it has to be done this way because I say so"

4.4. Step 2. Planning the change

Twenty questionnaires were distributed in sealed envelopes and eight envelopes were collected, of which four were in complete agreement and four included suggestions:

Paediatric palliative care was added to the basic theoretical concepts and the fundamental principles of palliative care were reinforced (E2).

The addition of non-pharmacological measures in comprehensive care was suggested and included in the planning section of the care plan (E2).

Other suggestions included dealing with oncological injuries, which was not added due to its intrinsic inclusion in physical changes and as part of the care plan. The suggestion to provide information about associations was not adopted, as it is part of the development of the same competence. Placing more stress on verbal communication rather than non-verbal communication was also not included, as both are considered important (E2).

Specification of the adverse reactions of treatments was requested and the administration and side-effects of treatments were therefore added (E4).

Psychological management of the impact on the patient, family and team was reinforced, as well as dealing with highly complex spiritual and social issues and ethical and legal aspects (E2).

In learning skills, the focus once again fell on their practical usefulness, in addition to their application to future situations (E1). The need to evaluate the initiative was identified and this was added to the participation (E2).

There was some disagreement over leadership ability, as it was felt that it might not be reflected in all subjects. However, we decided to retain it due to the request expressed in the first data collection (E3).

4.5. Steps 3 and 4. Carrying out and reflecting on the change

After all the changes were made, the result consisted of a template of 30 items, which were each scored at 0.26 (totalling 8 points). These items were divided into two main sections, as shown in Table 2. The teachers in charge of the case management and palliative care courses reviewed the final version and the assessment was carried out in two PBL sessions. One PBL group was assessed by a single evaluator (11), while the other group was simultaneously assessed by two evaluators (12).

The students expressed their satisfaction with both the methodology and the knowledge acquired in their evaluation of the PBL session. They

found the template useful for focusing their working plan and approaching the case from a practical perspective, thereby satisfying the students' need for knowledge.

5. Discussion

This study aimed to develop a template suitable for unifying and measuring the most important competencies for oncology nurses. The template designed enables assessment of the PBL process from the perspective of postgraduate students.

One of the most important aspects included in the new tool was the need for a comprehensive approach to people with oncological diseases and their relatives. This aspect has been called comprehensive care. The students emphasized the need to primarily address the physical, psychological and social dimensions in this approach.

As in previous studies, in the physical dimension the postgraduate students identified shortcomings when dealing with aspects such as the secondary effects of drugs, or skin care. This aspect was previously reported in related research which identified the administration of medication and the risk and management of extravasation in particular, as key aspects that nurses need to work on, given the complications that can arise for the patient (Karius and Colvin, 2021; Jackson-Rose et al., 2017).

The students emphasized the importance of learning to identify and manage psychological needs, especially as the disease evolves and as death and subsequent bereavement approach. The students found talking about death with both the patient and their relatives particularly difficult, as well as dealing with someone who is suffering explicitly, e.g. dealing with weeping by the patient or their family. A recently published systematic review shows that the needs of oncology patients and their families, especially in advanced stages of their disease, were both psychological as well as physical (Hart et al., 2022). Specifically, both the patients and family caregivers suffer from anxiety and stress as the disease progresses (Hart et al., 2022; Bellas et al., 2022). It is therefore important for nursing professionals to receive training on communication and management of emotional aspects related to this population.

The students mentioned the need to improve their competence in communicating with the affected person and their relatives. This finding is consistent with previous research, which highlighted the need for adequate communication. A study of paediatric oncology nurses identified the need for the inclusion of more training in communication skills in both undergraduate and postgraduate nursing education study plans and palliative care (Sawin et al., 2019).

The nurses also said that addressing the psychological needs of patients and their relatives is as important as being able to identify the impact that caring for people who are dying can have on their own mental health. They therefore believe that the team should receive training and support for managing their own emotional needs. They consider teamwork and support from the team to be very important. This finding is consistent with previous research, which highlighted the suffering and sense of loss experienced by oncology nurses (Phillips and Volker, 2020; Lowe et al., 2016). They also confirm that nurses are poorly equipped to deal with the emotional experience involved in being a nurse in this area and feel alone and lacking guidance in the development of the necessary competencies. A change in the culture which recognizes the needs of these professionals and develops support and training programmes enabling them to achieve the necessary competencies in caring for people with cancer, especially in the terminal phase, is therefore important.

Although the nurses believe that knowing how to address the social aspects that arise with patients and their relatives is essential, they acknowledged a gap in their knowledge on this subject. This was primarily related to the benefits that the person affected may be eligible for. Previous research has shown the significant financial needs that cancer patients and their caregivers may have to address (Hart et al., 2022). Including these aspects in nursing professionals' undergraduate and postgraduate training is therefore essential.

An interesting finding of the study is that the nursing professionals pay little consideration to spiritual needs in this population, despite their importance and when they do refer to them, they do so almost exclusively in terms of religious aspects. This points to a significant shortcoming in nurses' training as it relates to spirituality, which is of crucial importance to everyone and especially to people with a potentially life-threatening illness. This has been clearly shown in research conducted with people with cancer (Köktürk Dalcali and Kaya, 2022; Selman et al., 2018; Wisesrith et al., 2021). It is therefore imperative to address these issues in the training of future oncology nurses and conduct research on this subject.

On the other hand, they do not mention the legal or ethical needs that people with oncological diseases may have. A similar issue has been identified in previous research. This applies to a qualitative study carried out with healthcare professionals, where ethical issues were rarely identified and described, although the patients experienced many ethical shortcomings and needs when they talked about their daily practice. In other words, there appears to be no real ethical awareness among healthcare professionals (Crico et al., 2022; De Panfilis et al., 2019). Considering that legal and ethical aspects are crucially important for patients with oncological diseases and their caregivers, this topic should be investigated and introduced in study plans for healthcare professionals.

As regards the crucial competencies for learning that need to be developed and assessed, the students highlighted the importance of the following aspects: a proper integration of theoretical and practical knowledge, an understanding and command of high-quality information, organization in presentation, respect and fellowship, as well as leadership skills. These competencies are essential for a nursing professional (Helminen et al., 2017; Fukada, 2018). Interestingly, the aspects that students consider important are also reflected in the assessment using PBL methodology, which includes the assessment of attitudes of responsibility, learning skills, communication skills and interpersonal skills (Branda, 2013).

6. Limitations

The assessment template emerged because of the perceptions and experiences of people who are going to work in the healthcare sector with oncology patients and their families. It would be interesting to have the perspective of other postgraduate participants —such as those in nursing, medicine, or physiotherapy— to ensure the results were more representative and enhance the heterogeneity of the population.

It would be useful to carry out a broader study to validate the competency-based assessment tool in oncology and thereby be able to increase its use not only on the oncology postgraduate course at the University of Valencia, but also on other similar postgraduate courses and even to validate the assessment template for the training of oncology teams in the practice of oncology care. Statistical validation of the assessment tool would also be useful.

7. Conclusions

This study developed a competency-based assessment template for oncology nurses, which includes an assessment of their knowledge, skills and attitudes. PAR was useful for incorporating the students' learning needs in resolving the cases and their active participation facilitated assessment of the cases in the Problem-Based Learning sessions. It also enabled the teachers to bridge the gap between theory and practice by basing assessment not only on academic competencies, but also on practical competencies for oncology patient care.

The results could help other teachers or oncology nurses evaluate their training sessions and even their own knowledge in a healthcare setting.

CRediT authorship contribution statement

Marta Terrón-Pérez: Writing – original draft, Supervision, Investigation, Conceptualization. **Silvia Corchón:** Writing – original draft, Investigation, Formal analysis, Data curation, Conceptualization. **Cecilia Mascarell:** Formal analysis, Data curation.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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