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TABLE OF CONTENTS

Editorial

1. Product or Process: Cultural Competence or Cultural Humility? e1-e4
– Cecile N. Yancu* and Deborah F. Farmer

Case Report

2. A Case Report of Continuous Subcutaneous Infusion of Hydromorphone, Metoclopramide and Ondansetron Used To Treat Refractory Pain and Nausea in an Ambulatory Palliative Clinic 1-4
– Lawrence Aoun* and Josie Zakaria

Letter to the Editor

3. Cancer and Physiotherapy 5
– Inés Llamas-Ramos* and Rocío Llamas-Ramos

Mini Review

4. Inter-Professional High Fidelity Simulation: The Way Forward for End-of-Life Care Education 6-10
– Priscilla Cunningham, Joanne Reid*, Helen Noble, Helen McAneney, Claire Carswell, Susan McClement, Billiejoan Rice, Andrew Spence, Ian Walsh and Claire Lewis

Letter to the Editor

5. Parotitis at the End-of-Life 11-13
– Filipa Tavares Carreiro*, Rita Abril and Isabel Galriça Neto

Editorial

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Product or Process: Cultural Competence or Cultural Humility?

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The Institute of Healthcare's Triple Aim Initiative (TAI) identifies the improvement of patients' experience as one of three key components necessary for optimizing the American health care and cost-delivery systems.¹ Widely adopted today, the TAI's focus on patient-centered care² also implicitly embeds the idea of care that is culturally-sensitive. Perhaps nowhere in the health-care delivery system is this emphasis on patient-centered, culturally sensitive, care more important than for those addressing life-limiting illness³ or for frail elders who are coping with the advanced stages of multiple chronic conditions.⁴

These two patient populations have been the target of numerous studies in cross-cultural research, much of which has shown that dialogue surrounding palliative care and hospice is eased when caregivers, both clinical and laypersons, are culturally sensitive.⁵ Cultural sensitivity supports the development of trust and rapport with patients.⁶ The crucial question is how cultural sensitivity can best be achieved when working with a diverse patient population. The purpose of this editorial is to provide insight into the meaning of culture and to examine two leading methods for acquiring some degree of cultural sensitivity: cultural competence and cultural humility.

Culture is an umbrella term that subsumes within it values, beliefs, customs, rituals, practices and behaviors. In short, culture is a combination of the material and non-material components of human society that is as fluid as it is diverse. Over millennia, humans have learned to adapt culture as a tool for survival in a resource-challenged, often volatile environment. Seen from an evolutionary perspective, culture empowers individuals to work together in relatively cohesive social groups. Over time and generations, culture enables us to communicate with each other in meaningful ways that facilitate the development of substantive survival strategies and transmit this useful knowledge to progeny.⁷ As human environments vary widely so, too, do adaptive behavioral strategies.⁸

Culture plays a salient role in health. Culture determines how we distinguish health status from sickness and configures the patient experience.⁹ It influences diagnosis¹⁰ by contouring the way that we legitimate symptoms and separate objective disease from subjective distress.¹¹ In effect, culture influences all facets of the illness experience. However, the landscape of cultural diversity is broad, encompassing human characteristics ranging from, but not limited to, race/ethnicity, gender identity, sexual identity and orientation, socio-economic status, urban/rural, age/generation and religion. Nonetheless, whether motivated by the morality of social justice as in UNESCO's (2001) *Universal Declaration on Cultural Diversity*¹² or the efficiency of best practices demands,¹³ clinicians and service providers are increasingly called on to master an understanding of cultural diversity in order to improve care, especially for underserved groups.¹⁴

Cultural diversity embodies the idea that all societies generate a catalogue of distinctive differences that separate groups from one another often leading to social stratification.¹⁵ In practice, cultural diversity is manifested in a broad range of ever-changing behaviors, beliefs, rituals, restrictions, traditions, norms, institutions, and relationships that form the basis of cul-

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tural knowledge. This makes cultural mastery something akin to trying to grab onto a cloud.

The issue of the frequent collision of social and political worlds also complicates cultural understanding. Gender provides a salient example. Gender, long conceptualized as a binary social construct is used to attach social roles and behaviors to a binary concept of sexual identity. Social order runs smoothly when people behave in a way that supports a match of gender to sex; a mismatch between gender and sexual identity challenges the existing social and political order. Although the notion of a third gender is socially unremarkable in some societies, such as the Hijra of Southeast Asia, in the U.S. the gender/sexual identity mismatch has shifted into the clinical realm. Earlier versions of the diagnostic and statistical manual (DSM) identified gender identity disorder (GID) as a condition in which one is at odds with the gender identity assigned at birth. The 2013 version acknowledged a conceptual diagnostic shift and destigmatized the condition by changing the classification from GID to Gender Dysphoria.¹⁶ Now, four years later, social dialogue about gender has shifted to conversations about gender diversity, the concept that gender exists on a spectrum idea rather than being binary.¹⁷ Thus, in a span of less than ten years, a person who was born with female genitalia but self-identified as predominately male has “transitioned” from having a psychiatric disorder to being gender-non-conformist.

Such shifts in cultural ideas leave clinicians and service providers with major challenges when working with patients/clients from diverse cultural backgrounds. Nonetheless, patient- or client-centered care depends on respecting the values, practices, and beliefs that matter most to individuals and their families, particularly near the end-of-life. Although, a universal approach to addressing cultural differences would be ideal, culture's very complexity makes this strategy nearly impossible. Two commonly used approaches to bridge the cultural sensitivity gap are cultural competence and cultural humility.

Competence is often used interchangeably with terms such as skill, proficiency, and expertise. Cultural competence is conceptualized as having four elements: cultural awareness, knowledge, attitudes, and skills.¹⁸ The concept implies a delineated product and suggests a mastery of something, in this case, of a theoretically finite body of knowledge.¹⁹ The underlying idea is that awareness and understanding of the cultural backgrounds and beliefs of others facilitates communication.²⁰ In contrast, cultural humility is a dynamic process that includes self-reflection, personal critique, and growth.²² On the plus side, competence is more easily standardized, taught, and implemented than cultural humility; however, the danger is that it can lead to essentialism or stereotyping.^{18,21} Using a sociological framework that focuses on the reality of human cultural diversity, cultural humility (process) better serves patient-centered, culturally sensitive care when used in tandem with competency (product). Cultural competence has long been viewed as the cornerstone of fostering cross-cultural communication, reducing health dispari-

ties, improving access to better care,²³ increasing health literacy and, in general, promoting health equity.²⁴ The problem is that much of the recent work done to address health inequities has focused on increasing cultural competence among providers as if this could somehow empower at-risk groups to overcome decade's worth of social disadvantages that are at least partially responsible for poor health outcomes.²⁴ Additionally, despite decades of theorizing about and researching cultural competence certification, there is a lack of consensus about its key components.²⁵ Adding cultural humility, a process of openness, collaboration, and self-reflection rather than a presumption of competency,²⁶ to cultural competence could be uniquely beneficial.

Cultural humility provides a distinctive approach to exploring, understanding, and appreciating the differences among us. Cultural humility begins with self-examination of one's own cultural beliefs and practices with the goal of developing respectful relationships.²⁰ It “involves the ability to maintain an interpersonal stance that is other-oriented (or open to the other) in relation to aspects of cultural identity that are most important to the client”.²⁶ Cultural humility has both an intrapersonal, self-reflective dimension and an interpersonal dimension that includes respect for others, lack of superiority, and a focus on others rather than self.²⁶ Cultural humility is a lifelong process; the goal is the process, not the end product.¹⁹

Sociologically speaking, cultural humility shuns ethnocentrism in favor of a culturally relativistic approach to others. It is rooted in the belief that one culture may not impose its value system on other cultures; this may be considered part of professionalism.²⁷ The other-focused nature of cultural humility requires the practice of cultural sensitivity, seeking out, perceiving, and striving to understand cultural information provided by the other person.²⁶ Biases may be explicit to the individual and to others or implicit and unrecognized by the interacting individuals.²⁸ Ideally, self-reflection enables people to make their implicit biases explicit, acknowledge them and take them into account when working with others.

Essential to the cultural humility perspective is the idea that we are all members of multiple, intersecting cultures, not just one culture related to our race or ethnicity.²⁹ Our multiple identities and perspectives encompass a myriad of factors such as gender, social position, and geographical location that affect the way we view the world and influence the ways in which we interact and communicate meaningfully with others. The practice of cultural humility puts us in the potentially uncomfortable position of being learners, rather than experts, about cultures other than our own. Communication and understanding occur more easily among people who have shared cultural ideas and beliefs about how the world works; it is more difficult to acquire among people who do not have shared core beliefs.²⁰

Thus, cultural humility may complement, rather than replace, cultural competence.²⁹ To interact effectively with an increasingly diverse population, we need both process (cultural

humility) and product (cultural competence), awareness and openness to other world views combined with some knowledge about other cultures and ways of thinking to know what to look for, what questions to ask. Beginning with self-reflection of our own attitudes, beliefs, and practices, we must then learn as much as possible about the beliefs, values and behavioral practices of the cultures/groups with which we interact. Cultural knowledge, such as concepts of personal space, how people like to be approached, and whether direct eye contact is desired or considered disrespectful, can facilitate positive and productive initial interactions. The initiator should be aware of subtle signs like body language and adjust the communication and interaction style accordingly. This demands sensitivity that depends upon willingness to acknowledge we must be perpetual learners with our reach always exceeding our grasp. Throughout this process, we must be mindful that we are all members of multiple cultures and interlocking identities that are continuously influenced by factors such as racial/ethnic identity, gender, age, cohort, family composition, socio-economic status, living situation, educational level, and life experiences.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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Case Report

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A Case Report of Continuous Subcutaneous Infusion of Hydromorphone, Metoclopramide and Ondansetron Used To Treat Refractory Pain and Nausea in an Ambulatory Palliative Clinic

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ABSTRACT

Background: This case report describes a patient with advanced breast cancer with both refractory pain related to metastatic skeletal lesions and nausea who was successfully managed during the last nine months of her life with a continuous subcutaneous infusion of hydromorphone, metoclopramide and ondansetron in one chemically compatible mixture.

Case presentation: A 56-year-old woman with widespread metastatic breast cancer to bone who was followed in an ambulatory palliative care clinic for pain management and nausea. As her disease progressed and she was in the last year of her life, her pain and nausea had become very difficult to manage despite multiple modalities of treatment.

Case management: A continuous subcutaneous infusion of hydromorphone, metoclopramide and ondansetron was started and titrated to achieve relief of her intolerable and refractory pain and nausea. All three medications were chemically compatible, and provision for bolus was ensured.

Case outcome: The patients ultimate goals of care were achieved, including nine months of excellent relief of both nausea and pain, while enhancing quality of life due to ease of administration of one mixture.

Conclusion: The combination of hydromorphone, metoclopramide and ondansetron is a potentially useful regimen for the targeted treatment of concomitant refractory pain and nausea in the palliative care setting. This represents the first time the triad mixture has been reported successfully in case studies.

KEYWORDS: Palliative care; Subcutaneous; Hydromorphone; Metoclopramide; Ondansetron; Refractory pain; Nausea.

BACKGROUND

Pain and nausea are very common occurrences in advanced oncological states, and well described in the palliative care literature.¹⁻⁵ There are an abundance of publications dedicated to addressing various refractory symptoms and possible therapeutic options, whether nausea or pain. When concomitant symptoms exist, however, the likelihood that expert opinion is required rises.⁶ Moreover, if poorly managed, the implications on not only quality of life, but also quantity of life become more apparent.⁷⁻⁸ Pharmacological strategies for the management of both pain and nausea have an abundance of research dedicated to the parenteral delivery of these agents.⁹⁻¹²

For various reasons patients with advanced cancer may experience a reduction or a complete loss of the oral route, potentially severely compromising the ability to deliver evidence-based theapeutics in a timely fashion. When it happens earlier in the disease trajectory, the concern for prolonged unnecessary suffering comes to the forefront. For a combination of the

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aforementioned reasons, including refractoriness of symptom management and limitations in the oral route, we arrived at a chemically compatible mixture of subcutaneous hydromorphone, metoclopramide, and ondansetron that dramatically improved both severe pain and nausea in a patient with advanced breast cancer. This mixture was administered as a continuous infusion with the provision for bolus doses, which not only optimally managed physical suffering but further enhanced quality of life by ensuring simplicity of delivery.

Case Presentation

A 56-year-old woman with metastatic breast cancer was assessed in an ambulatory palliative care clinic for pain and symptom management in association with widespread skeletal lesions. There had been disease progression despite completion of adjuvant treatment with chemotherapy and radiation as well as 5 years of Tamoxifen and 3 years of Letrozole. The patient presented with excruciating hip pain radiating down her left leg that inhibited her mobility, and was described as constant and “intense”. Direct correlation was made with lesions seen on imaging such as bone scan and X-ray. Later, several other sites of bony metastases resulted in similar excruciating pain. Initially, pain management started with a hydromorphone based regime, moving from a short-acting formulation to a longer acting agent. Several upward titrations were then pursued, as well as the addition of co-analgesia described below. Despite various trials of oral opioids and increasing doses, along with numerous adjuvants such as gabapentin (600 mg po three times daily), methadone (10 mg po three times daily), and dexamethasone (8 mg po twice daily), the patient’s pain continued to escalate. Transdermal analgesia (fentanyl 100 mcg patch every 48 hours) and further opioid rotations were no longer effective for pain relief. After experiencing a severe pain crisis, the patient was transitioned to a continuous hydromorphone subcutaneous infusion of 1.5 mg/hr with 1.5 mg bolus every 30 minutes as needed. After titration of both basal and bolus doses (2.5 mg/hr and 2.5 mg every 30 minutes as needed), her pain had eventually improved dramatically. It should be noted that the patient had previously developed severe radiation-induced enteritis, which limited the role of further palliative radiotherapy for pain management.

In addition to her rapidly escalating pain, the patient also developed refractory nausea. As with strategies aimed at managing her pain, numerous oral anti-emetic agents of differing mechanistic action were trialed with little success. This in turn depleted her quality of life. Not until parenteral formulations (subcutaneous) of both ondansetron (8 mg subcutaneous three times daily) and metoclopramide (10 mg subcutaneous four times daily) were instituted did the patient begin experiencing excellent relief of her nausea. This of course raised the suspicion that the patient was, in addition to all the aforementioned, experiencing poor GI absorption of medications given a previous history of chemotherapy-induced enterocolitis and partial small bowel obstruction with resection. This is outside the scope of

this article.

Case Management

Given the evolution and escalation of therapeutic options described above, and in particular the triad of parenteral hydromorphone, metoclopramide, and ondansetron being effective for this patient’s symptom control, the clinical team confirmed that the three medications were compatible in one mixture.¹³ We desired greatly to simplify the patient’s regime in order to enhance quality of life. Our clinical pharmacist established that the three agents could indeed be mixed together without crystallization and degradation of the product. The initial mixture reflected both the basal and bolus rate of her hydromorphone infusion, as well as the required doses of ondansetron and metoclopramide used to mitigate nausea. As such, the initial mixture consisted of 250 mg of hydromorphone, 90 mg of metoclopramide, and 72 mg of ondansetron in a 500 ml minibag of normal saline. This was run at 5 ml/hr, with the provision for a 5 ml bolus every thirty minutes with lockout. Ultimately titration reached a final mixture that included 500 mg of hydromorphone in 500 ml of normal saline with the aforementioned anti-emetic doses. This equated to roughly a basal rate of 5 mg/hr of hydromorphone and equivalent bolus dose (5 ml/hr and 5 ml every 30 minutes). Similarly, metoclopramide, according to these ratios, equates to approximately 0.9 mg/hr (21.6 mg/day) and ondansetron at 0.72 mg/hr (17.3 mg/day).

Case Outcome

The patient’s pain and nausea improved dramatically. Very much consistent with the patient’s wishes, she was able to enjoy a fairly high quality of life without restriction to several hours of nursing in the home that would otherwise have been encountered had the medications been administered separately *via* the parenteral route. As such she could for example, maintain high levels of functioning, such as driving and taking longer trips away from home, given the mixture cassette size allowing for changing every fourth day.

It can be seen from Table 1 above that shortly after institution of the pump on May 27, and in close follow-up, the patient’s nausea improved dramatically, which remained a sustained effect throughout the remainder of the her journey. When the patient’s pain escalated on September 12, it was found to be secondary to a new bony metastatic lesion. This new disease site responded quite well to palliative radiotherapy.

DISCUSSION

A mixture of subcutaneous hydromorphone, metoclopramide, and ondansetron was deemed compatible and safe to administer as a continuous infusion with the provision for bolus dosing. The combination of hydromorphone, metoclopramide, and ondansetron aligned with the patient and family wish to achieve excellent pain and symptom management, while simplifying the

Table 1: Sequential ESAS Scores after Institution of Patient's Pump, a Chemically Compatible (Singular) Mixture of Subcutaneous Hydromorphone, Metoclopramide, and Ondansetron.

ESAS	May 27	June 30	July 29	Aug 30	Sept 12	Oct 5
Pain	5	4	2	2	6	1
Fatigue	8	8	5	9	9	5
Drowsiness	8	8	4	8	8	4
Nausea	7	2	0	1	0	0
Appetite	8	2	0	5	7	2
SOB	0	5	0	0	0	0
Depression	5	6	3	5	5	4
Anxiety	6	6	4	5	5	4
Well-being	6	5	3	5	5	4

regime as much as possible. This represents the first case report documentation of this combination of medications used in such a long-term fashion.

CONCLUSION

The combination of subcutaneous hydromorphone, metoclopramide, and ondansetron is a compatible mixture that could be a valuable addition to the palliative care armamentarium. This mixture was found to be significantly beneficial in the management of intractable pain and nausea in a patient with advanced metastatic disease.

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The authors declare that there is no conflict of interest.

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Cancer and Physiotherapy

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The word “CANCER” continues to be one of the most dreadful contexts today, generating a feeling of concern, stress and especially fear. What can we do about this? The population’s ignorance increases this situation so it is convenient to describe and make people known about the process which happens to a person with cancer in order to be able to face the disease with optimism and hope of healing.

Perhaps, one of the factors to emphasize is the control of symptoms, which remains a worldwide challenge. The oncology population experiences a lot of symptoms such as pain, lack of energy, lack of appetite, constipation, and change in the way of food tastes. Each patient is unique, but it is possible to investigate which are the most prevalent symptoms for each type of cancer so as to understand better how to treat them in a best way. It is a difficult task and although, it is a field that is currently under continuous development which means whenever it becomes more relevant, several authors attribute this difficulty to the absence of validated scales or questionnaires for the quantification of these symptoms.

There are many disciplines that can help to control those symptoms, one of them is the physiotherapy. Physiotherapy focuses on physical therapy and promote healthy lifestyles which help to prevent cancer risk. A negative habit is the sedentary lifestyle that is fought by the physiotherapists establishing a plan of exercise adapted to each type of patient.

On the other hand, due to their high incidence, patients resort to physiotherapy to avoid the most frequent complication in breast cancer: lymphedema. There is much scientific evidence about its effectiveness. It should also be noted that depending on the type of cancer, patients experience different symptoms but the most common is fatigue which will be present to a greater or lesser extent depending on the treatment they are receiving. The literature contains many articles which demonstrate that a physical exercise program is effective for these type of patients. Respiratory physiotherapy also contributes to improve fatigue and stress tests to achieve an earlier recovery in cases of surgery or bedding for a long period of time.

For all of that, it is crucial to highlight the importance of a multidisciplinary team that works for the same purpose: The well-being and quality of life of these patients throughout the process of their illness, in the way that the more we know about the characteristics of each patient, the better we can eradicate or minimize symptoms by ensuring the success of treatment as much as possible. Physiotherapy is a useful treatment filed for this kind of population. The potentiality of physiotherapy should be known in order to help our patients in the different phases of their illness.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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Mini Review

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Inter-Professional High Fidelity Simulation: The Way Forward for End-of-Life Care Education

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BACKGROUND

Providing high quality care for dying patients and their families has been highlighted as a national priority in the United Kingdom (UK)¹ with national guidelines and policies existing to provide direction specific to the provision of end-of-life care (EOLC). These include National Institute for Health and Care Excellence '*Guidance for end-of-life care in adults*'² and '*End-of-life Care Strategy: Promoting high quality care for adults at the end of their life*' from the Department of Health.³ The challenges faced by dying patients are substantial and potentially overwhelming⁴ and those near the end-of-life may experience perhaps extreme symptoms that include physical, spiritual and psychosocial suffering.⁵ It is recognised that quality EOLC can only be delivered when the needs of both patients and their support network, such as families, are addressed; taking into account their priorities, preferences and wishes.⁶

Despite the inevitability of death, patients and families may not always receive the quality EOLC they desire. Patients and their families have reported sub-optimal EOLC with unmet needs in areas such as communication and information giving,⁷ and symptom control and emotional support.⁸ This can be exemplified in the case of the care of patients with cancer cachexia at end-of-life, where research uncovered a lack of communication and information giving from healthcare professionals about the causes and impact of cachexia in advanced cancer.⁹ They reported that this left patients and their families feeling apprehensive and distressed at an already emotive time, weakening their confidence in the ability of the staff to provide adequate care. In order to further investigate this response from healthcare professionals, Millar et al conducted a study exploring healthcare professionals' understanding and perception of cachexia at end-of-life.¹⁰ This revealed that a lack of understanding of this complex symptom at end-of-life contributed to a culture of avoidance, as staff struggled to recognise cachexia or understand how to manage it appropriately. Participants reported that an absence of professional education at both pre-registration and post-registration contributed to their lack of knowledge and understanding of cachexia at end-of-life and how to respond to it.¹¹

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This lack of preparation appears as a common thread throughout the literature, including at undergraduate level with evidence suggesting that end-of-life education is poorly delivered within undergraduate nursing and medical curricula.^{12,13} Medical students have reported feeling unprepared to deal with end-of-life issues¹⁴ and nursing students and newly qualified nurses report feeling ill-equipped to provide quality EOLC to patients and their families.^{1,15} It is a recognised area of concern for undergraduate students, with many reporting concerns about communication (such as talking about death and dying), how they will react to death and practical matters such as symptom management.^{16,17} This lack of preparation appears to have an impact in clinical practice. A recent independent investigation into the utilisation of the Liverpool Care Pathway¹⁸ highlighted a number of concerns about the competence of nursing and medical staff to care for the dying and bereaved. Too often there were variations and failings in the delivery of EOLC, causing unnecessary distress to people who were dying and those close to them.¹⁹

From the evidence presented above it is imperative that EOLC must have a predominant place in the curricula of undergraduate healthcare professionals, particularly in the disciplines of nursing and medicine, with effective teaching strategies tailored to the needs of the undergraduate learner.

STRATEGIES FOR TEACHING END-OF-LIFE CARE

Teaching strategies must provide meaningful connections between the student, course content, practical experience, and the dying patient.²⁰ Literature on preferred teaching strategies for EOLC have been reported over the years, such as the preference for experiential approaches for teaching about death and dying.²¹ Experiential learning can aid the discovery of possibilities which may not be evident solely from direct experience.²² Experiential learning opportunities are necessary to allow students to spend time with dying patients and their families.²³ For example, research has found that newly qualified doctors' competence and confidence in delivering care to patients at the end-of-life increased in tandem with accumulated exposure to EOLC.²⁴

It has been argued that technological advances in healthcare have obscured the need for human compassion for those at the end-of-life and their families. Not surprisingly, public demand for a more holistic, integrated approach toward health, illness, death and dying has been increasing.²⁵ The literature has reported on a number of different teaching strategies used to deliver EOLC, including:

'Traditional' classroom-based methods: EOLC education using 'traditional' teaching methods, such as didactic lectures, audio-visual aids and small group discussions in the classroom have been found to have had a positive impact on students' personal and professional development regarding care of the dying.²⁶ Other 'traditional' classroom activity, such as seminars on EOLC, can help students to learn about communication skills, holistic care, and knowing what to expect in the final hours of life.²⁷

Artistic strategies: Whilst 'traditional' teaching methods have had some previous positive evaluations as described, the use of theatre (a performance of *Wit*) has been reported as a more preferable teaching method of EOLC in comparison to didactic lectures and reading journal papers.²⁸ A method known as 'storyboarding'—sharing stories through written words and pictures—is another artistic learning strategy and has been reported as a helpful way to learn how to identify cultural aspects and feelings related to dying patients and valued by students as a way of sharing their experiences.²⁹

Low and high fidelity simulation: Low fidelity simulation, using role-playing and low fidelity manikins, has been reported as useful by undergraduate nurses for developing communication skills for EOLC.³⁰ High fidelity simulation using more sophisticated technology (such as computer controlled simulator manikins) has been reported as an effective way to change attitudes toward EOLC in undergraduate nursing and medical students.³¹

Online learning resources: Online EOLC education can include online courses. The use of an online learning course on death and dying found that students appreciated the ability to reflect on their experiences in a non-judgmental setting and online education increased their confidence in EOLC.³² Other online resources include the use of virtual patient cases, which has been found to increase students' comfort and knowledge regarding EOLC.³³

Clinical or voluntary placements: Aside from mandatory clinical practice placements forming part of students' healthcare programmes, (voluntary) placements specific to EOLC have been employed as a teaching strategy for EOLC education, such as visits to hospices. Such experiences can improve students' attitudes towards EOLC and students have reported improvements in self-perceived competence to care for dying patients following EOLC education placements.³⁴

Standardised patients: Standardised patients (actors) have been used as a strategy to deliver EOLC education, and their use has been found to improve students' confidence and knowledge of EOLC.³⁵ This strategy had also been reported to be a valuable way to practice conversations relating to death and dying before encountering patients at the end-of-life in clinical practice.³⁶

Multimodal methods: Multimodal (or multidimensional) methods incorporate more than one type of teaching strategy into an EOLC curriculum or EOLC course. For example, 'traditional' methods such as didactic lectures partnered with experiential methods such as high fidelity simulation have been found to improve students' attitudes towards EOLC.³⁷

Although, these studies have demonstrated the effectiveness of some of these teaching methods to deliver EOLC, there are a number of limitations within the published literature, which includes small-scale pilot studies with small sample sizes, potential bias, and the use of non-validated measurement tools for data analysis. Many of these studies were carried out in a uniprofessional context which recruited one type of student

sample (such as nursing students only), or recruited students from a number of healthcare courses but the study did not focus on their learning in an interprofessional education (IPE) context.

A literature review by Gillan et al found that studies suggest end-of-life simulation to be a viable learning approach and have a positive impact on knowledge acquisition, communication skills, self-confidence, student satisfaction and level of engagement in learning.³⁸ Simulation using high fidelity manikins is being increasingly used by educators in EOLC education, due to the lack of practice placements in this area due to increasing student numbers.³¹ Research conducted in the UK quantitatively evaluated the use of high fidelity simulation in EOLC education.³¹ This was a quasi-experimental, pre-test-post-test pilot study which recruited undergraduate students from nursing (n=15) and medicine (n=4). The intervention involved two independent simulation scenarios, intended to reflect the challenges of providing EOLC to dying patients and their families. A high-fidelity simulation manikin was used as the patient and an actor played the role of the patient's relative. Using the Frommelt Attitudes Towards Care of the Dying (FATCOD) Form B-scale, results showed that students' attitudes towards EOLC were more positive after taking part in the simulation intervention in comparison with pre-intervention scores. This study noted that whilst high fidelity simulation is a viable method for teaching EOLC, the use of high fidelity simulators to teach EOLC in both undergraduate nursing and medical education in an interprofessional context is scarce. IPE, "...occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes".³⁹ After almost fifty years of enquiry, evidence sufficiently indicates that effective IPE enables effective collaborative practice,³⁹ with the implementation of IPE into healthcare profession programmes gaining support from the worldwide governments and universities.⁴⁰

FUTURE RESEARCH

A systematic review of the literature is being conducted to identify empirical evidence regarding teaching strategies which are effective for delivering EOLC education in undergraduate healthcare programmes. As there is a lack of evidence concerning the use of high fidelity simulation for teaching EOLC to undergraduate students for IPE, a study is currently being conducted as a part of the lead author's doctoral research training to address this gap in the literature. The study is currently recruiting undergraduate nursing and medical students to take part in high fidelity simulation scenarios (adaptations of those used in previous research).³¹ The study will employ a three-phase mixed-methods research design. Symbolic interactionism⁴¹ was the chosen theoretical framework for this study as it provides a meaningful framework by which to interpret and understand human behaviour and social interaction. This is relevant as the study is focusing specifically on IPE.

THE WAY FORWARD

EOLC is an internationally applicable area of healthcare. The research team has recognised this and has therefore made tentative links with a higher academic institution in Canada that is highly involved with undergraduate EOLC education with an IPE presence within the university. It is then hoped to develop a research agenda related to EOLC education that is globally applicable.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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Parotitis at the End-of-Life

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Dear Editor,

Saliva plays a key role in maintaining physiological homeostasis of the oral cavity and its estimated daily production is of about 500-600 mL/day.¹ Xerostomia is defined as the subjective feeling of dry mouth caused either by changes in the saliva consistency, or by the acute reduction of its production, by 50% or more.² Its prevalence varies among 14% and 72%,¹ and it is most common in polymedicated elder patients, when in a state of dehydration and/or malnutrition. It is also associated to multiple comorbidities such as renal failure, hepatic failure, hypothyroidism, diabetes mellitus and depression.³ The use of drugs with anticholinergic and diuretic effects can lead to dehydration and to the consequent increase of the prevalence of xerostomia. The most commonly implicated drugs are antidepressants, anticholinergics, sedatives, antipsychotics, antiepileptic, anti-parkinson drugs and antihistamines, diuretics and anti-hypertensives.^{1,3,4} There are numerous secondary complications to xerostomia such as dysphagia, taste alterations, lesions of the oral mucosa, local pain and oropharyngeal infections.¹

Parotitis is the most common form of salivary gland infection. Parotids are the glands most often involved and its inflammation is called parotitis. The location of these gland channels, along the upper jaw, leads to salivary stasis, contrary to what occurs with sublingual and submandibular glands. On the other hand, the saliva produced by the parotid gland is more serous in comparison to the one produced by sublingual and submandibular glands, which consists of mucous material, rich in immunoglobulins. These mechanisms are responsible for the occurrence of parotitis, once they lead to the stasis of the salivary flow, as they also retrograde contamination by bacteria from the oral cavity.³ In elderly patients facing the end-of-life, there's an increasing prevalence of parotitis due to the existence of multiple risk factors, such as malnutrition, poor dentition, multiple comorbid conditions and consequent polymedication.^{3,4}

The treatment of parotitis is always adjusted to the patient, and consists of a wide range of practices such as hydration, withdrawal of diuretic or anticholinergic drugs, the usage of nonsteroidal anti-inflammatory drugs, and the administration of antibiotics, when there is a suspicion of a bacterial infection. There are certain measures that help to prevent xerostomia and consequently parotitis, such as: the use of substances that increase salivary secretion, like lemon drops, optimization of oral hygiene, lubrication of the jugal mucosa and local application of warm compresses. An improvement is expected up until 48 hours after the treatment onset.^{3,4}

We identify four elder patients with parotitis, hospitalized in a palliative care unit (PCU). The four identified patients were elder, with an average age of 77.6 years. Three of those were male patients. Most of them had a degree of completely dependence (mean Barthel scale score: 21.3 range 0-100) and the mean extension of hospital stay was of 16.3 days. Cancer was the main diagnosis in all (100%) of the referred patients and the major cause for the internment was symptomatic control at the end-of-life. They had on average 4 comorbidities and only one patient was under palliative chemotherapy.

Parotitis was diagnosed between the 6th and 14th day of hospitalization. Every individual patient had been prescribed with at least three potential drugs involved in its etiology, such as clonazepam, mirtazapine, midazolam, levomepromazine, haloperidol, butylscopolamine, hydroxyzine, furosemide, and perindopril. They all showed clinical improvement after

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Table 1: Characteristics of the Study Population.

	Patient 1	Patient 2	Patient 3	Patient 4
Gender	Male	Male	Male	Female
Age (years)	72	80	70	89
Barthel scale Score (0-100)	Total dependence 0	Total dependence 15	Mild dependence 50	Severe dependence 20
Days of hospitalization	13	15	16	21
Main diagnosis	Pancreas cancer	Lung cancer	Prostate cancer	Peritoneal metastases (unknown primary tumor)
Comorbid conditions	AHT [†] , type 2 diabetes, Dyslipidemia, Coronary disease	CKD [‡] , AHT [†] , type 2 diabetes, POCD [§] , PBH [¶] , Glaucoma	AHT [†] , DVT	Type 2 diabetes, CKD [‡] , Depression
Prescription drugs	Butylscopolamine, Clonazepam, Hydroxyzine and Levomepromazine	Butylscopolamine, Clonazepam, Furosemide and Haloperidol	Clonazepam, Furosemide and Mirtazapine	Butylscopolamine, Haloperidol and Midazolam
Diagnosis Day	8 th	6 th	10 th	14 th
Palliative chemotherapy	Yes	No	No	No
Antibiotic	No	No	Yes	yes
Death	Yes	Yes	No	No

[†]: arterial hypertension; [‡]: Chronic Kidney disease; [§]: pulmonar obstructive chronic disease; [¶]: Prostatic benign hyperplasia; ^{||}: Deep vein thrombosis.

the discontinuation of the above drugs, followed by the introduction of general measures and a treatment with nonsteroidal anti-inflammatory drugs and/or antibiotics. Nevertheless, parotitis was a terminal condition within 5 days of diagnosis, and 75% of patients died. Table 1 portrays the characteristics of the study population. We establish that all patients suffered from an oncological disease. In the other studies, this condition appears as a main diag these clinical cases, all patients were elder, following the same tendency as the population nosis in only about 60% of cases.^{3,4} In these clinical cases, all patients were elder, following the same tendency as the population of the published studies.³⁻⁵ This is related to the high prevalence of parotitis on the elderly, at the end-of-life, once they have multiple risk factors. Additionally, comparing to previous publications, the mortality rate was higher in this case series. This is probably due to our short sample but reveals the parotitis poor prognosis. The multiple comorbidities had a negative impact, contributing to the onset of parotitis and to a short-term adverse outcome. Also, note that the prescribed antibiotic therapy does not linearly favor the resolution of the clinical situation.

Parotitis is associated with active dying and produces discomfort for the patient. There are few studies published on this topic, but it is estimated that the mortality rate reaches about 50% after its diagnosis.³ Parotitis is a marker of poor prognosis, directly related to the principal diagnosis and to the associated comorbidities, which affect the patients' vulnerability to the use of drugs directly responsible for xerostomia.

There are certain measures that help preventing xerostomia and, thus, the emergence of parotitis, such as the use of substances increasing salivary secretion, the optimization of oral hygiene, the lubrication of the oral mucosa, and the local applica-

tion of hot lint.¹

The authors conclude that hydration, proper oral hygiene and judicious use of drugs with anticholinergic and/or diuretic effects can contribute to the reduction of the prevalence of parotitis at the end-of-life. It is essential to implement preventive measures to avoid this serious complication that induces great suffering to the patient. It is necessary to observe an excellent mouth care in this group of patients, particularly when anticholinergic drugs are used to control other clinical symptoms at the end-of-life.

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All authors contributed equally to the work.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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