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ORIGINAL

Proposal for a modular educational program for the prevention and management of pressure ulcers in older adults from primary health care

Propuesta de un programa pedagógico modular para la prevención y manejo de la ulcera por presión en adultos mayores desde la atención primaria de salud

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ABSTRACT

Introduction: Pressure ulcer (PU) is a frequent complication in older adults (OA), increasing its prevalence in the community, requiring attention to this population group by primary health care (PHC) professionals. Objective: to design a modular pedagogical program for training in prevention, management and treatment of pressure ulcers in AM from the (APS), through interdisciplinary approaches, emphasizing the use of natural and traditional medicine (MNT) and strengthening palliative care when they are advanced ulcers, closing the gaps in knowledge and practices in APS professionals. Methods: A pedagogical program was developed with a modular, adaptable, participatory approach, through an interaction-action study, which allowed a deeper understanding of the process and its interrelations in the historical social conditions of the management of the PPU by the APS professional. Results: The modular pedagogical program for the prevention, management and treatment of pressure ulcers in AM from the APS is presented, based on foundations supported in different areas of knowledge. The structure, characteristics, components and relationships for the process under study and its theoretical validation are proposed. Conclusions: This modular educational program allowed addressing pressure ulcers from a comprehensive and multidimensional perspective, which strengthened the capacity of the PHC system to offer quality care to elderly people by increasing the level of knowledge and skills of professionals. It also reduced the incidence and severity of pressure ulcers in elderly people assisted at this level of care, increasing the improvement in the quality of life of both patients and their families through comprehensive and humanized interventions.

Keywords: pressure ulcer, bedsores, prevention, elderly, primary health care.

RESUMEN

Introducción: la ulcera por presión (UPP) es una complicación frecuente en adultos mayores (AM), aumentado su prevalencia en la comunidad, requiriéndose de atención a este grupo poblacional, por los profesionales de la atención primaria de salud (APS). Objetivo: diseñar un programa pedagógico modular para la capacitación en prevención, manejo y tratamiento de UPP en AM desde la APS, mediante enfoques interdisciplinarios, enfatizando en el uso de la medicina natural y tradicional (MNT) y fortaleciendo los cuidados paliativos (CP) cuando sean ulceras avanzadas, cerrando las brechas en conocimientos y prácticas en los profesionales de la APS. Métodos: se desarrolló un programa pedagógico con un enfoque modular, adaptable, participativo, a través de un estudio de interacción-acción, que permitió profundizar en el conocimiento del proceso y sus interrelaciones en las condiciones históricas sociales del manejo de la UPP por el profesional de la APS. Resultados: se presenta el programa pedagógico modular para la prevención, manejo y tratamiento de la UPP en AM desde en la APS, a partir de fundamentos sustentados en diferentes áreas del conocimiento, se proponen la estructura, características, componentes y relaciones para el proceso en estudio y su validación teórica. Conclusiones: lograr un desempeño eficiente de los profesionales de APS, en la prevención, manejo y tratamiento de la UPP en el AM, es esencial para mejorar su calidad de vida y reducir la carga de esta condición en la comunidad en el área de salud del Policlínico Universitario Juan Navarro Lopetegui del municipio Sandino.

Palabras clave: ulcera por presión, escaras, prevención, adulto mayor, atención primaria de salud.

INTRODUCTION

Professional development is an inherent part of the training of Cuban health professionals, and for this reason, they constantly prioritize remaining up-to-date, whether through self-study or training programs, which ensure that they acquire the necessary knowledge to perform as competent and compassionate professionals and thus fulfill their mission of providing health care with the highest standards of ethics and quality.

In the case of primary health care (PHC) professionals—a priority program of the Ministry of Public Health (MINSAP) and national policy—efforts are being redoubled to implement a system of continuous professional development that guarantees the quality of health services. From this perspective, the concept of professional development in primary health care is often characterized by training, education, and development. (1)

The Cuban educational model for professional training in health sciences involves the fusion of the pedagogical model of higher education with the healthcare model developed under the specific historical conditions of our country. This undoubtedly distinguishes the conception and development of a training process that is unique to the Cuban Medical University, setting it apart from those of other countries and even from other degree programs and specialties within Cuban higher education. (2,3)

Professional development must be context specific; it begins with an analysis of the actual situation in which professional problems arise, where the professional objectively recognizes their needs and potential. (4) This definition is well suited to the case of PHC professionals because it allows for an understanding of the relationship between the work they perform and the content of professional development, as well as its orientation toward solving problems that arise in the socio-occupational context and the articulation between content, organizational forms, implementation, and evaluation, in accordance with the needs identified in the short, medium, and long term. Given its rapid obsolescence, the impact of professional development on a graduate's personal growth is considered significant, and the need to plan it on the basis of their needs and social mandate requires deepening and updating their knowledge. (5)

Pressure ulcers (PUs) represent a significant health problem among older adults and serve as indicators of the quality of medical care. Primary health care (PHC) plays a crucial role in the prevention and management of these injuries, as it is the first point of contact with the health system. play

According to the World Health Organization (WHO), the global prevalence of pressure ulcers ranges from 5% to 12%. (6) This figure is 7% in Latin America (7) and varies among geriatric patients, whose prevalence ranges from 0.4% to 38% and whose incidence ranges from 3.8% to 12%. (8)

The European Wound Management Association (EWMA) states that the available evidence regarding the prevalence of pressure ulcers is weak and inconsistent, ranging from 6% to 13% in Europe, with an increasing incidence due to an aging population and the prevalence of increasingly common conditions such as obesity, constituting a significant health problem in Spain, where it is also estimated that between 8% and 30% of patients receiving home care also have some form of PUS. (6)

In the rest of Europe, the prevalence of PUs follows a similar pattern; for example, in Australia, between 6–15%; in Belgium, Switzerland, and England, it ranges from 21–23%; and in Italy, it ranges from 8%; and in Portugal, 13% of patients develop some form of PU. (9)

In Canada, PUs are prevalent in 23–29% of the population.

In Latin America, the country with the most comprehensive epidemiological data on PUs is Brazil, with an incidence and prevalence rate of 11.4%. On the other hand, in Chile, only one study on PUs has shown a prevalence of 35.7%, while Mexico has a prevalence ranging from 5.87% to 8.43%. In Ecuador, the prevalence of PUs is approximately 8.3%. (10)

In Peru, the prevalence is estimated to be between 11.4% and 16% in the elderly population because of shortcomings in the healthcare system. In Mexico, the first national study on the prevalence of pressure ulcers was conducted in 2011. The prevalence was 12.92%, which is intermediate compared with that in other countries, such as Spain and Germany, where the prevalence ranges between 6% and 13%. (11)

In addition to their high prevalence, pressure ulcers are associated with high morbidity and mortality. In fact, studies have already demonstrated that the presence of pressure ulcers increases the risk of death among hospitalized patients fivefold. (6,12)

The increase in the incidence and prevalence of PUs worldwide is accompanied by an increase in psychological distress, as PUs are a source of great suffering for affected patients and their families at physical, emotional, and social levels (6,13) because of pain, foul odor, disfigurement, loss of bodily integrity and self-esteem, or changes in the social role that the patient or their caregiver must assume.

In Cuba, the incidence of PUs in the general population is estimated to be 1.7% among those aged 55 to 69 and 3.3% among those aged 70 to 75. (11) It is estimated that 60% of cases develop in the hospital, and of these, more than 70% occur in people over 70 years of age. They affect 9% of patients admitted to a hospital and 23% of those admitted to geriatric institutions. There are no reliable data on their incidence in primary care.

In the author's opinion, and after reviewing various literature sources, she infers that although PUs are more frequent complications in elderly people during hospital stays or in social care facilities, this is not exclusive; evidence of this is that in recent years, an increase in this condition has been observed in the community, and in this regard, in the author's view, the advantages of home care -one of the prioritized programs of primary health care- may also be a factor, as well as increased awareness and sensitivity regarding pressure ulcers. This is highly positive because it not only allows for more timely access to treatment but also provides a more comfortable and personalized environment for patients and their families, fostering a more humane and comprehensive approach to treatment.

Therefore, given the increase in the incidence and prevalence of PUs in the community served by the polyclinic under study and given that early intervention and adequate follow-up by PHC professionals can help reduce this prevalence, which is not complex in Cuba, where PHC plays a leading role in health promotion and primary care and care for terminally ill patients, we consider it of utmost importance to propose a modular educational program for the prevention and management of PUs in older adults through PHC, and if we further consider that, as reflected in much of the literature reviewed, Type I and II ulcers predominate among the types of ulcers, and their treatment is specific to primary health care; an update on this topic is needed, as it was not addressed in the physician's initial training (14), a fact corroborated by an analysis of the methodological guidelines of Curriculum E of the medical degree program. (15)

On this basis, the objective was to design and implement a modular educational program for training in the prevention, management, and treatment of PUs in primary care through PHC, utilizing optimal prevention strategies via interdisciplinary approaches, complementing treatment with the use of NTM, and strengthening palliative care for patients with advanced ulcers, thereby closing the gaps in knowledge and practice among PHC professionals.

METHODS

An educational program was developed based on a modular, adaptable, and participatory approach through an interaction-action study grounded in the dialectical materialist approach, which views the object as a process. This allowed for a deeper understanding of the process and its interrelationships within the historical and social conditions of pressure ulcer management by PHC professionals.

The study population consisted of 38 PHC professionals from the Juan Navarro Lopetegui Polyclinic in the municipality of Sandino; 15 of them were physicians, and 15 were nurses who made up the basic health teams of the 15 local medical clinics, in addition to 8 physicians and nurses who held management positions at the institution.

Theoretical methods made it possible to interpret theories, explore the fundamental relationships underlying unobservable processes, and provide a conceptual interpretation of empirical data.

In this regard, the following equation is used:

- The historical-logical method, which examines the chronological sequence of the subject to understand its evolution and development.
- Documentary analysis facilitates the organization and processing of all information.
- The inductive-deductive method allows for the interpretation of documentary information.
- Modeling for the graphical representation, in abstract terms, of the characteristics and development of the process.
- The appropriate structural-systemic approach to model the process by identifying its components.

The empirical-level methods provided data for characterizing the scientific problem, as well as information for developing the proposal to find its solution. The following were used:

• A literature review provided the necessary information on the current state of the research subject, based on guiding documents of the improvement process in the context of the APS and the available literature.

• Interviews and surveys to assess the current state of UPP management in PHC, based on postgraduate management at the Juan Navarro Lopetegui University Polyclinic and the current opinion regarding the relevance of the content and actions of the training and refresher process on the UPP in PHC, respectively.

• Expert judgment is used to assess the feasibility of the obtained scientific results.

• The triangulation technique—of a methodological nature—was employed to determine the similarities and discrepancies in the information obtained through the applied instruments.

DEVELOPMENT

Pressure ulcers have existed since the dawn of humanity. Their primary causal factors are inherent to human interaction with the surrounding environment, although evidence of their existence is linked to various historical records from past eras. (11)

According to the World Health Organization (WHO), in 2021, pressure ulcers were defined as lesions directly related to ischemic causes affecting the skin and subcutaneous tissues because of pressure on a bony prominence. (16) They result from restricted blood flow caused by prolonged pressure or friction between an external surface and a bony or cartilaginous surface. (17) They constitute a global problem that, over the years, has affected different age and social groups. They affect everyone without distinction: It is a condition that disrupts people's daily lives, and it is most prevalent among older adults. (10), classified by the WHO in 2022 as a geriatric syndrome. (18)

They are more common in certain parts of the body, such as the heels, ankles, hips, and tailbone, appearing within just hours or days; most heal with treatment, but some never heal completely. (10)

They occur more frequently in geriatric care facilities for various reasons, such as prolonged bed rest or sitting in chairs, lack of mobility, excessive humidity, poor hygiene, and malnutrition—including issues related to being underweight or obese. (19) They develop rapidly and are difficult to treat, thereby increasing resource consumption and healthcare costs. (20)

Among the predisposing factors contributing to the development of pressure ulcers are (11)

Pathophysiological: skin dehydration and alterations in elasticity. Vascular changes that contribute to reduced oxygen supply to tissues nutritional deficits, whether due to deficiency or excess. Immunosuppression resulting from conditions such as HIV, cancer, sepsis, etc. Altered levels of consciousness, such as stupor, confusion, or coma, and conditions that reduce patient mobility sensory disorders such as loss of sensation, neuropathies, etc.

In addition to these are factors related to treatment, such as imposed immobility resulting from certain therapeutic options, particularly in cases of musculoskeletal injuries that limit mobility. The use of immunosuppressive medications, such as corticosteroids, which suppress the immune response and cause skin atrophy, also plays a role.

Sedative medications also play a role, as they reduce mobility and the response to pain and discomfort. The presence of intravenous catheters or tubes is another risk factor for the development of pressure ulcers, as there is often a fear of moving to prevent them from dislodging; consequently, their mobility is reduced, which promotes the development of ulcers.

Environmental factors include insufficient health education for caregivers of dependent patients; infrequent position changes; prolonged use of wet diapers; mattresses or chairs that are too rigid or too soft and easily compressed; and malpractice by healthcare teams.

Depending on the severity of the injury, pressure ulcers are divided into four groups:

Category I or Grade I: the epidermis is intact, but the skin appears red and erythematous because hyperemia persists for 24 hours.

Category II or Grade II: the epidermis and dermis are affected. Blisters or phlyctenules, skin cracks, and desquamation are the main characteristics of this category.

Category III or Grade III: The changes extend to the subcutaneous tissue. Well-defined edges, necrotic tissue, and the presence of serosanguineous exudate are observed; some lesions exhibit tunneling and cavitation.

Category IV or Grade IV: Muscle, bone, and joint involvement is present. Necrotic tissue, abundant exudate, loss of sensation, and, occasionally, small cavities are observed.

The WHO defines palliative care as “an approach that improves the quality of life of patients and families facing problems associated with life-threatening illnesses, through the prevention and relief of suffering by means of early identification and accurate assessment of pain and other physical, psychological, and spiritual problems.” It further emphasizes that palliative care should not be limited exclusively to the final days of life but should be applied progressively as the disease progresses and in accordance with the needs of the patient and their family. Therefore, pressure ulcers are a significant problem in patients requiring palliative care. (16)

Awareness of palliative care has led to increased identification of PUs in the community. This may be because more patients are receiving care at home than at hospitals. We recognize that palliative care aims to improve patients’ quality of life, but PUs represents a significant challenge in this context. Therefore, in primary care, the management of PUs must focus on patient comfort, especially in home care. Thus, the need for this is emphasized. (21)

For the treatment of PUs, the first step is prevention, which involves assessing the risk factors to which the person is exposed; subsequently, appropriate treatment is administered based on the type of lesion, considering the various complications that may arise. Among the treatment alternatives is MNT, given its purpose of preventing and treating diseases by activating the body’s own capacities or natural biological resources while harmonizing the body with nature—hence the use of exercise, diet, and plants as a treatment arsenal.

Studies by Manuela Cebrián Arroyo (22) have demonstrated the efficacy and safety of the topical application of extra virgin coconut oil to prevent the onset of PUs in patients at moderate or high risk of PUs. Based on this evidence, it is possible to conclude that extra virgin coconut oil is at least as effective as hyperoxygenated fatty acids (HOFAs) and is therefore another therapeutic option for preventing PUs among healthcare professionals, caregivers, and patients.

Honey, as an alternative for treating ulcers, also helps resolve the problem in a more natural and less aggressive way than the artificial methods available today do. It has positive effects, such as reducing exudate, which keeps the wound cleaner; preventing microbial growth in the wound, thereby preventing infection; reducing inflammation; eliminating bacteria that may be present in the wound; accelerating the healing time; and promoting blood oxygenation in the affected area (23).

Sucrose possesses antibacterial, bacteriostatic, antiseptic, debriding, antiedematous, nonirritating, and immunological properties; it stimulates healing and is not absorbed topically. Its application to the skin and mucosa generates osmotic pressure that dehydrates the bacterial cytoplasm within the bacterial colonies present in the wound bed, thereby achieving bacterial lysis on the one hand and preventing the reproduction of nonlysed bacteria in the wounds on the other hand.

The properties of sucrose promote collagen synthesis by stimulating keratinocyte production, which allows the lesion to heal in a relatively short time and makes it highly effective for the treatment of pressure ulcers. (24)

Another natural and traditional alternative for the treatment of pressure ulcers is aloe vera, an excellent natural cleanser and antiseptic that easily penetrates the skin and tissues, acts as an anesthetic to relieve pain, and possesses potent bactericidal, fungicidal, and anti-inflammatory properties. It dilates blood capillaries, breaks down and destroys dead tissue, promotes cell growth, and hydrates the tissue. Therefore, it can be inferred that aloe vera is beneficial for managing this health issue. (25)

RESULTS

Structure of the modular educational program for the prevention and management of pressure ulcers among older adults in primary health care.

Diagnostic stage

Objective: To characterize the current state of knowledge regarding the prevention and management of pressure ulcers in older adults among primary health care professionals at the Juan Navarro Lopetegui Polyclinic in the municipality of Sandino.

Pre- and posttraining surveys will be administered. Nonprobabilistic sampling will be used at the discretion of the research team based on preestablished inclusion and exclusion criteria. The sample consists of 38 PHC professionals who need to acquire up-to-date knowledge on the prevention and management of PUs to provide quality medical care to older adults with this condition: Knowledge levels are calculated by assigning one point for correct answers and zero points for incorrect answers, with higher scores indicating a better level of knowledge. Excel software will be used for the descriptive statistical analysis of the data.

Planning and Implementation Phase

Specific objectives: To pedagogically design training methods that can be used to implement a modular educational program for the prevention and management of PUs in older adults through primary health care.

This stage is related to the curriculum design of the proposed modules. Each module will include theoretical sessions, practical workshops, and interactive tools.

Program Modules

PPI prevention: risk factors, postural care techniques, use of support surfaces.

Comprehensive treatment: Wound management, infection control, nutritional care.

Palliative Care: Pain management, quality of life, and emotional support for patients and families.

Natural and Traditional Medicine: Application of medicinal plants, therapeutic massage, and other scientifically validated traditional practices.

Assessment will be conducted through pre- and posttraining surveys, case studies, and practical simulations.

Evaluation Phase

Objective: To evaluate the results of implementing a modular educational program for the prevention and management of pressure ulcers in acute care settings through primary health care.

The following actions are identified:

Determination of the indicators to be measured in all evaluation activities of the modular educational program.

Planning of the various evaluation instruments (oral, written, and theoretical-practical) to measure changes in the knowledge of PHC professionals and the implementation process of the modular program.

Application of evaluation instruments to assess professional performance and the feasibility of the modular program.

Systematically evaluating the progress of the proposed actions.

Assessment of the significance of improvements in the prevention and management of UPP in primary care settings by PHC professionals and the implementation process of the modular program.

At the end of each module, an immediate assessment of the knowledge imparted to PHC professionals will be conducted to determine the level of achievement in each module taught.

Strengths of the Pedagogical Model

Vertical and horizontal integration of disciplines by combining knowledge from medicine, nursing, education, and sociology, which allows for a deeper understanding of the subject.

Continuing education through training for health professionals

Preventive approach promoting preventive practices in PHC

Research and pedagogical practices promote applied research and continuous reflection to improve educational and care practices.

Increased knowledge and skills among PHC health personnel, reduced the incidence and severity of pressure ulcers in patients treated in PHC, and improved the quality of life for patients and their families through comprehensive and humanized interventions.

CONCLUSIONS

This modular educational program allowed for a comprehensive and multidimensional approach to pressure ulcers, which strengthened the primary care system's capacity to provide quality care to patients by increasing the knowledge and skills of healthcare professionals. It also reduced the incidence and severity of PUs in older adults treated at this level of care, improving the quality of life for both patients and their families through comprehensive and patient-centered interventions.

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