

Educational intervention in caregivers to prevent pressure ulcers in adults with prolonged immobility

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ABSTRACT

Introduction: The knowledge of caregivers about the prevention of pressure ulcers in patients with immobility is useful to prevent the appearance of injuries, by means of planning, implementing, and assessing of an at-home educational program.

Objective: To determine the efficiency of educational intervention about knowledge regarding prevention of pressure ulcers in primary caregivers of patients with prolonged immobility. **Methodology:** A quasi-experimental design and simple random sampling; the intervention group was considered as its own control under a test and re-test statistical treatment, with simple blind intervention to 15 caregivers of adult patients, hospitalized with indication of discharge and in risk of suffering pressure ulcers. The intervention was implemented in three phases of four sessions conducted as a workshop, with duration of thirty minutes. Data analysis was descriptive, and in order to compare the test and re-test a Student's t-test was applied. Ethical issues were considered for a low-risk survey. **Results:** In the diagnosis phase 80% of caregivers had no knowledge at all, in the re-test 100% of them increased knowledge with a positive and significant effect ($p=.000$). **Conclusion:** The result obtained showed statistically significant efficiency of the four sessions that comprised the educational program to increase the level of knowledge of caregivers for the prevention of pressure ulcers.

Key Words: Pressure ulcer; caregiver; prevention; learning (DeCS).

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INTRODUCTION

Prolonged immobility that results from any problem that affects the health of a person is a conditioning factor in the development of pressure ulcers (UPP by its acronym in Spanish). These are defined as injuries of ischemic origin located in the skin and underlying tissues, produced by prolonged pressure or friction between two hard surfaces ⁽¹⁾. The UPP etiology is multifactorial and is related to the deterioration of physical mobility, very old age, chronic diseases, inadequate sanitation, pressure, shearing, and friction ⁽²⁾. UPP represents an important public health problem, which affects not only to the ill person but also to the caregivers, and to the health system due to the development of complications such as infections, pain, dependency of care, and increase in the morbimortality indices ⁽³⁾.

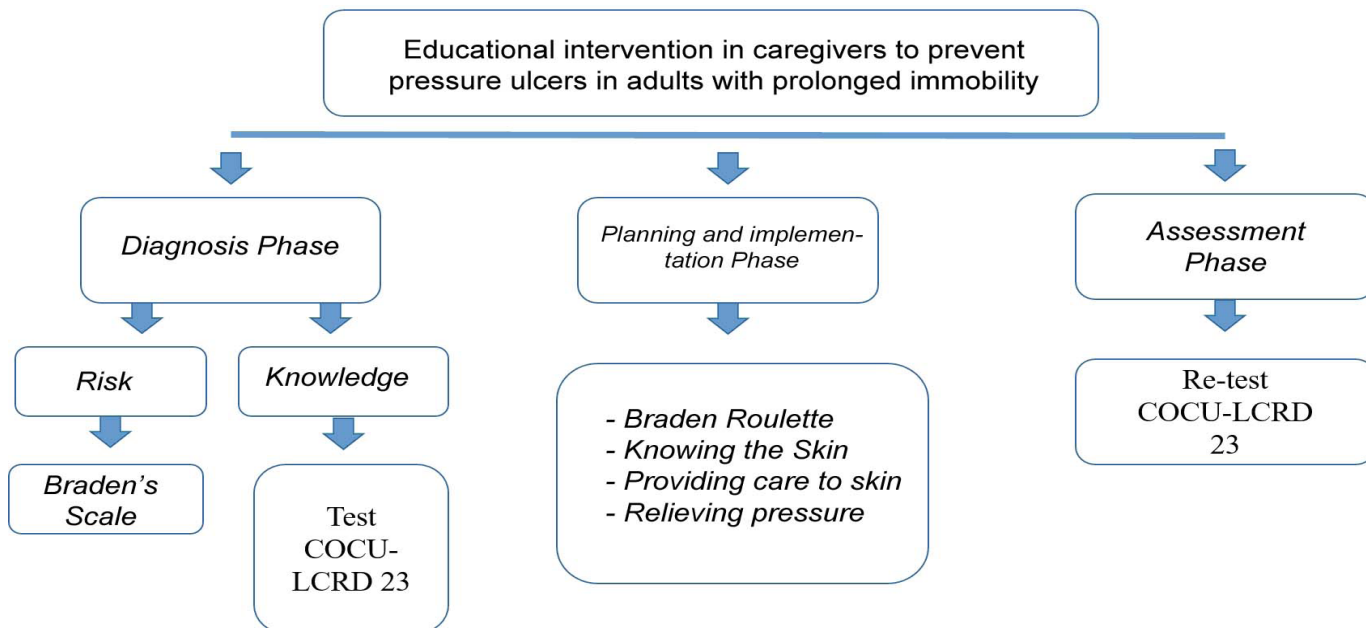
According to the WHO, at an international level the prevalence oscillates between 5 and 12%; in Latin America is 7%. Similar results were found in other countries such as Germany, Brazil, and Spain. In Mexico, a survey carried out with 13,137 patients, hospitalized in second and third level units in 32 states of Mexico, reported a national average prevalence of 20.07% ⁽⁴⁾.

Physical evidence states that preventive actions significantly reduce the development of UPP in people who are discharged from the hospital; in this respect, nursing professionals should assume the challenge of prevention through planning, execution, and follow-up of care addressed to caregivers, as they relate to adult people who voluntarily assume the care at the patient's home with prolonged immobility in order to prevent skin injuries ⁽⁵⁾. Therefore, caregivers should assume this responsibility with knowledge and skills for the assessment and prevention of

UPP in patients with deterioration of physical mobility ⁽⁶⁾. Some authors state that Health Education (EpS) addressed to caregivers is a fundamental tool of primary health care that influences the efficiency used to prevent the appearance of injuries, strengthens meaningful learning through strategies that achieve autonomy and independence in the care provided once the patient has left the hospital ⁽⁷⁻⁹⁾. According to scientific evidence, the EpS should be based on training tools that motivate and empower caregivers in the acquisition of knowledge regarding the assessment of risks and the implementation of preventive measures such as mobilization, handling of pressure, specific positions and support surfaces to response to the challenge posed by home care to the population in risk of developing UPP ⁽¹⁰⁻¹²⁾. However, previous studies on caregivers report low level of knowledge, for which reason the following purpose arises, namely, to determine the efficiency of educational intervention regarding the knowledge about the prevention of pressure ulcers in primary caregivers of patients with prolonged immobility.

METHODOLOGY

A quasi-experimental design was performed using a simple random sampling, where the group of intervention was considered as its own control, under a statistical treatment test, re-test, with single blinded intervention, addressed to 15 primary caregivers of adult patients hospitalized in a third level of care. Patients of both genders were included, hospitalized, with discharge indication, and at risk of developing pressure ulcers in accordance to the Braden scale, without considering the medical diagnosis.



Source: Own development

Such intervention was performed under a single blind form and was based on the PRECEDE Model ⁽¹³⁾. This model is summarized in three phases. 1. Diagnosis Phase: In this phase the level of knowledge of primary caregivers for prevention of UPP was measured, through the application of the questionnaire COCU-LCRD 23, which reports previous acceptable reliability in Mexican population ⁽¹⁴⁾; it is comprised by three divisions: The first one includes data regarding the primary caregiver; the second one includes data about the patient; and the third one includes 23 items looking for the knowledge that the caregiver has about the UPP. The level of knowledge is obtained by the addition of one point for correct answers, and of zero for the wrong ones, where the higher the points the higher the level of knowledge. The analysis of data was performed through the statistical kit SPSS version 24. The descriptive analysis was performed through frequencies and percentages of sociodemographic variables of caregivers to determine the level of comparison between the test and the re-test and a Student's t-test was applied for related samples ⁽¹⁵⁾. Such survey strictly followed the code of ethics postulated in the Declaration of Helsinki and all ethical aspects were considered in order to have a low risk study in accordance to the General Health Act for Research ⁽¹⁶⁾.

2. Intervention Planning and Implementation Phase. The educational program was developed under the social learning perspective which is characterized by the fact that each one of the participants shares the responsibility of achieving success in the learning activities ⁽¹⁷⁾. Such intervention consisted of four sessions, lasting 30 minutes each, which were carried out once a week, during six months. The sessions were held as a workshop with the use of educational, visual, and validated materials. The first session was termed Braden's Roulette ("Ruleta de Braden") and it consists of a scale of assessment for caregivers of patients who are at the risk of suffering skin lesions associated to prolonged rest. The roulette was adapted by the authors, re-taking parameters of the original Braden scale ⁽¹⁸⁾, in a clear and simple way without numerical points, substituted by color codes containing the risk level and the measurements in order to prevent the appearance of pressure ulcers ⁽¹⁹⁾. During the second session, "knowing the skin" through informative material, the importance of keeping the integrity of the skin and the risk factors were explained. The third session was termed "providing care to skin", during which the physical zones of more pressure were shown to caregivers as well as the UPP stages; the fourth session, "relieving pressure", had the purpose of increasing the level of knowledge and skills to

decrease the risk of appearance of injuries.

3. Assessment Phase. In this phase, the educational intervention effect was measured with the application of the re-test, through the COCU-LCRD-23, after the implementation of educational sessions.

RESULTS

The sample consisted of 15 relatives participating, who accomplished the role of primary caregivers of patients with prolonged immobility, of both genders, where females (73%) predominated, within an age ranging from 25 to 58 years, most of them having only elementary school education (47%).

In order to reach the objective of the educational program in the diagnosis and assessment phases, knowledge was measured before and after the intervention under a test and re-test statistical format, in order to perform the cross-check of arithmetic averages of samples related. In the diagnosis phase (test), 80% of caregivers had no knowledge about the prevention of pressure ulcers. In the assessment phase, the level of knowledge (re-test) was measured again, and the findings showed that after the implementation of the educational program, 100% of caregivers increased their level of knowledge, with a positive and statistically significant ($p=.000$) effect.

Table 2. Student's t-test for related samples

<i>t</i>	<i>gl</i>	Significance (bilateral)	95% of trust interval of the difference	
18.348	14	.000	<i>Lowest</i> 48.97	<i>Highest</i> 61.94

Source: COCU- LRCO 23

DISCUSSION

In the research we looked for determination of efficiency of educational intervention regarding the knowledge of prevention of pressure ulcers in primary caregivers of patients with prolonged immobility. Sociodemographic data reiterate that women are the ones in charge of accomplishing the role of main caregiver of their relatives, reinforcing with this the socially set standards, which recognize women as care providers within the household. Besides, predominance of elementary school education in most of these women decreases the possibility of having a formal employment relationship, which makes them of them individuals with higher probability of assuming this role, due to the patient's great demand of time and care. Finding out and getting to know the demographical data of primary caregivers, in

Table 1. Descriptive analysis of measurements

Measurement	Arithmetic Average	Typical Deviation
Test	46.33	±2.31
Re-test	55.45	±11.7

Source: Own development

terms of education and literacy help to define the profile of the structuring of the tools to be used in the educational programs.

This study evidences the insufficient knowledge of caregivers for the prevention of UPP; it shows the need of implementing this program in order to strengthen in this group the abilities toward the reduction of these injuries, results similar to those found in another study, where it was found a deficiency in the knowledge of caregivers, and that when implementing the intervention, a significant result in the increase of the level of all the caregivers resulted⁽²⁰⁾.

The findings in this study agreed with results from other authors, which when explaining the increase of knowledge after the implementation of an intervention, they concluded that health education is effective in caregivers to increase their knowledge about prevention of UPP^(20, 21).

The scientific contribution of the study consisted in providing a nursing intervention under an experimental design, situation that is not common in literature regarding care science, in addition to have carried out the statistical assessment. In addition, not only the arithmetic averages should be considered, since the clinical significance of this work implies a contribution under grounded theory in the previously published evidence, which contributes to the educational nursing programs because of the methodology of intervention that was used.

CONCLUSIONS

The result obtained shows statistically significant efficiency of the four sessions that comprised the Educational Program to increase the level of knowledge of caregivers for the prevention of UPP.

Limitations of the study: The quasi experimental design by itself represents a limitation since it did not have a control group. However, the same study subjects behaved as their own control to carry out the statistical cross-checking. The size of the sample limited the degrees of freedom, and although the number of subjects included in the intervention was small, the distribution of data was normal, which allowed the application of parametric statistics. The results are considered reliable despite the small sample; during the development of the research the statistical power was preserved since there was no loss of study subjects.

CONFLICT OF INTEREST

The authors declare they do not have any conflict of interest.

FINANCING

No one

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