Biomedical Research 2018; 29 (17): 3288-3291 *ISSN 0970-938X*
www.biomedres.info

Evaluation of risk factors for pressure injuries in home care unit patients.

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Abstract

The author aimed to evaluate the risk factors for pressure injuries in those receiving home care units. This cross-sectional descriptive study was performed in 786 patients who were served from home care unit between 1st March 2016 and 31st April 2016. Patients' pressure injury was evaluated with Braden risk assessment scale. The mean age of seven hundred eighty six patients was 71.22 ± 16.23 y; 51.3% of them were female. In home care unit patients, the pressure injury prevalence is 29.8%. It was observed that in patients who had 11.9 ± 3.0 point averages from the Braden risk assessment scale. It was seen the pressure injury evaluation and in patients who had 21.1 ± 3.4 point averages it was not seen any evaluation of the pressure injury (t=14.6, p=0.000). In home care patients, the pressure injury prevalence is found in 29.8% age, having chronic illness, nutrition status are risk factors to pressure injury in home care patients. Patients who were served in home care unit had high risk for pressure injuries. In this respect, in home care patients should be evaluated for pressure injuries.

Keywords: Braden, Home care unit, Pressure injury, Patients.

Accepted on August 31, 2018

Introduction

In accordance with the suggestions of physicians to the patients, the medical examination which embraces the social and psychological consultancy services in his/her home or family environment is provided and on the other hand observation, analysis, treatment, medical care, following and the rehabilitation services are supplied [1,2]. This practice in different countries appeals to the needers in a wide range; from those whom had a need for post-operative care, to patients and elders whom need long term care, from the mothers whom newly gave birth to the patients whom can continue to be home-cured, from the patients whom need short-term nursing services to those who wants services such as immunization and laboratory observations in his/her home or workplace. The aims of home care units; to increase the functions of the individuals, contribute for well-being of the services area to become in optimal level, the service area by preventing the individuals' hospitalization or institutionalization ensure them to stay in his/her home [3].

Pressure injuries are defined as localized injury to the skin and underlying tissue that occur over bony prominences because of pressure or pressure in combination with shear, whereas skin failure is defined ‘‘as an event in which the skin and underlying tissue die due to the hypoperfusion that occurs concurrent with severe dysfunction or failure of other organ systems” [4].

The pressure injuries are localized tissue damage which is consisted with, in skin/subcutaneous tissue, in bone spurs with pressure and/or shear (laceration)/friction/medical stuff [5].

The pressure injury prevalence changes between 3%-66%. The pressure sore prevalence change from 0-29% in those who gets home care unit [6]. Pressure injuries are serious health problem that increases the risk of illness and death extends the hospitalization duration and requires high treatment cost. As in case of many other diseases, a good quality care also has a high importance for prevention and treatment of the pressure injury. It reduces the quality of life of the patients and their relatives [7]. Pressure injuries extend the hospitalization duration [8,9]. It increases the cost of healthcare services [9]. It increases morbidity and mortality by four or five times [10]. It doubles the nasocomial infection risk. Brown et al. reported that the patients that have newly-emerging pressure injury in the long term care center, six months of mortality rate was 67% [5].

In development of pressure injury, in individual plays different preparatory risk factors. Factors arising from the patients such as pressure, friction, physical inactivity, bacterial contamination, due to fecal/urinary incontinence dampness of the skin, loss of sense, loss of motor (muscles of movements), old age, high fever, peripheral vascular disease, malnutrition cause the occurrence of pressure injury disease [11,12].

The main pathology of the development of pressure injury is the cease of blood flow depending on the pressure on affected areas and hypoxia [13]. Disruption of capillary circulation due

to pressure pulls the trigger for occurrence of the sore by causing hypoxia [14].

In home care patients, risk assessment should be carried out on first contact, documented and reviewed weekly or as the patient's condition or circumstances change. The risk assessment score, combined with the holistic patient assessment, should ensure that the correct support surface and interventions are implemented [15].

Materials and Methods

A cross-sectional descriptive methodology was used for this study. The study was conducted between 1st March 2016 and 31st April 2016 in Samsun province. The patients who were served from home care unit were visited by the Health Sciences University Samsun Education and Research Hospital home care team. One doctor visited nine or ten patients a day in a month time. A questionnaire form which includes socio-demographic attributes was filled to the 786 patients over 18 year-old whom had pressure injury whom accepted this study and received informed consent. These include age, gender, civil, social security, educational status, chronic illnesses, nutrition, state of consciousness, dependent on the bed, pressure injury existence and stage were questioned. Braden risk assessment scale is implemented to the patients. The Braden risk assessment scale was developed by Braden and Bergstrom in 1987 with the aim of to determine pressure injury risk. The first reliability and validity of this scale was made by Oguz in 1997. In 1998, the reliability and validity of the Braden risk assessment scale were made by Pınar and Oguz and reliability and validity were determined high. Developed Braden risk assessment scale which takes as a basis the risk factors of the patients whom had been given home care is made of from 6 subscale. These are; sentimental perception, humidity, activity, mobility, nutrition, friction and position. The total score is between 6 and 23, and a low total score indicates a high risk for pressure ulcer. This scale is very reliable for the determination of patients which have great risks for pressure injury [2].

Health Sciences University Samsun Education and Research Hospital Clinical Research Ethical Committee approval was granted for the study.

Statistical analysis

Statistical analysis was evaluated using SPSS software version 20.00. Results are expressed as mean and standard deviation (SD). The Pearson's Chi-square test and Student t-test were used in the evaluation of the data. Statistical significance was accepted at $p<0.05$.

Results/Observations

Of the 786 patients who participated in this study, 51.3% (n=403) female and 48.7% (n=383) male. The mean age of the patients was 71.22 ± 16.23 y (min: 18 max: 93). 66.4% (n=522) of the patients were married, 32.5% (n=255) of the patients graduated from primary school (Table 1). 31.4% (n=247) of the patients had a chronic disease. 29.8% (n=236) of the patients had pressure injury (Table 2). The localization of pressure sore was observed: in sacrum region 96 (40.8%), trochanter 45 (18.9%), ankles 32 (13.5%), vertebra 10 (4.3%), Achilles 9 (4.1%), scapula 7 (3.1%), ears 6 (2.9%), humerus 6 (2.7%), femoral (1.4%), elbow 2 (1.7%). When the pressure sore stages were examined it was observed that stage I was 74 (31.2%), stage II was 104 (44.2%), stage III was 44 (18.8%) and stage IV was 14 (5.8%). According to the results of the patients in Braden risk assessment scale, it was determined that there were 314 (39.9%) patients who had no risk (19-23) in terms of pressure injury development, 202 (25.7%) patients were on the verge of a risk (15-18), 143 (18,2%) had moderate level of risk (13-14), 82 (10.4%) patients had high risk (10-12) and 45 patients had very high risk (5.8%) (9 and below).

It was found statistically significant relation between the pressure injury and the level of consciousness (Table 3) ($p<0.005$). Nutritional status and the risk of pressure injury development were statistically significant ($p<0.005$).

The mean age of patients with pressure injury was 74.22 ± 14.31 y, the age of patients that have not had the pressure injury was 70.04 ± 12.42 ($t=3.2$, $p=0.001$). It is observed that in the patients whom mean points from the Braden risk assessment scale were 11.9 ± 3.0 the development of pressure injury occurred, and in the patients whom mean points from Braden risk assessment scale were 21.1 ± 3.4 it did not occurred pressure injury ($p<0.001$).

Table 1. *The distribution of patients by socio-demographic characteristics (n=786).*

Descriptive characteristics	Number	Percent
Age (y)		
18-41	110	14
42-65	129	16.4
66-90	387	49.2
>90	160	20.4
Condition		
The married	522	66.4
Single	124	15.8
Divorced/widow	140	17.8
Education status		
Not literate	96	12.2
Literate	101	16.4
Primary high school	255	32.5
Middle school	145	18.4
High school	121	15.4
University	68	5.1
Social security		

Yes	766	97.4
No	20	2.6
Diagnosis	215	27.3
Alzheimer's	203	25.8
Cerebrovascular disease	95	12.1
Parkinson's	149	18.9
Oncological diseases	124	15.9
Other		

Table 2. *The distribution of the patients by the preparatory characteristics of pressure injury formation (n=786).*

Descriptive characteristics	Number	Percent
Nutrition status		
Oral	706	89.8
Nasogastric	25	3.2
PEG (gastrostomy)	55	7
The status of consciousness		
Conscious	711	90.5
Stupor	32	5.5
Conscious off	43	4
Dependency		
Fully dependent	490	62.4
Semi-dependent	269	34.2
Independent	27	3.4
Pressure injury		
Yes	236	29.8
No	552	70.2
Chronic disease		
Yes	247	31.4
No	539	68.6

Table 3. *The distribution of formation of pressure injury by age, gender, having chronic disease, the status of consciousness nutrition status in home care patients.*

Descriptive characteristics	Number	Percent
Nutrition status		
Oral	706	89.8
Nasogastric	25	3.2
PEG (gastrostomy)	55	7
The status of consciousness		
Conscious	711	90.5
Stupor	32	5.5
Conscious off	43	4
Dependency		
Fully dependent	490	62.4
Semi-dependent	269	34.2
Independent	27	3.4
Pressure injury		
Yes	236	29.8
No	552	70.2
Chronic disease		
Yes	247	31.4
No	539	68.6

Discussion

This study's goals were to evaluate risk factors for pressure injuries in those receiving home care units.

In the study of Akturk et al. found the pressure injury prevalence was 23.8% [16]. In our study, the pressure injury prevalence was 29.8%. The reason of this can be because of the high percentage of our patients were fully dependent on the bed.

In the study of Sahin et al. the mean age of patients was 80 years [12]. In our study, the mean age of patients was 71.22 ± 1.83 y.

In our study, it was determined that pressure injury was mostly at the stage II (44.2%). In the study of Ozgenel et al. have shown the reason of that as a rehabilitation and a longer process of transition to daily life due to the reasons such as low educational level and economic problems [17]. In the study of Lepisto et al. stated in a study conducted in eleven hospitals in Finland that the highest pressure injury prevalence was at the stage II (40%) [18].

In our study, pressure injury was the most frequent in sacrum (40.8%). In the study of Uzun et al. it was observed that the pressure injury was the most frequent in sacrum [2].

In our study, it was found that the patients whom were the most stupor conscious state developed pressure injuries (65.6%). In the study of Inan et al. found that the patients whom were the most stupor conscious developed pressure injuries (66.7%) [7]. In the same way, it has also been determined in the study of Lepisto et al. that the more consciousness level was deteriorated the pressure injury was developed [18].

In the study of Horn et al. when they examined the patients that had developing pressure injury it was also observed that the most frequent diagnosis was hypertension (38%) [3]. In our study, there was also an increase in the pressure injury prevalence in patients with chronic illness.

In the study of Uzun et al. found that 32.3% of the patients were in the risk group in terms of pressure injuries development [2]. According to the results of the Braden risk assessment scale in our study, 34.4% of our patients were in the risk group.

In the study of Katran found that 31.4% of the patients in the age group of 75 y and over formed pressure injury and there was a significant correlation between the age and pressure injury development (p=0.001) [19]. In our study, we determined that 55.9% of patients at the age of 65 y or more developed pressure injury and that in elder ages, the rate of pressure injury development was increased (p=0.001). In the study of Inan et al. also showed that the mean age of the patients who are in a risk of pressure injury development (56.3 ± 16.5) is elder than the mean age of the patients whom have not has a pressure injury (48.5 ± 16.5) and the relation between them was significant (p=0.000) [7]. According to the Braden risk assessment scale the average age of the patients whom are in a risk of pressure injury development (74.22 ± 14.31) was higher than the average age of patients whom in a risk of pressure injury development (70.04 ± 12.42) and the correlation between them was significant (p=0.001).

In the study of Inan et al. Braden risk assessment scale it was observed that the score (11.7 ± 3.1) was lower in those patients whom were diagnosed with pressure injury. The Braden risk assessment scale score was higher (20.1 ± 3.6) in those who had not had diagnosed with pressure injury and the relation between them was found to be significant (p=0.000) [7]. In our study, patients who were diagnosed with pressure injury had lower scores on the Braden risk assessment scale (11.9 ± 3.0), we found that the Braden risk assessment scale score was higher (21.1 ± 3.4) in the patients whom had not had pressure injury and we determined there was a significant correlation between them (t=14.6, p =0.000).

Health care is very important in major diseases, especially in home care patients. In home care patients, the pressure injury prevalence frequency is 29.8%. Age, having chronic illness, nutrition status are risk factors to pressure injury in home care patients. The Braden risk assessment scale should apply to home-care patients, and the formation of pressure injury should be avoided.

Acknowledgments

Authors thank all participants for their cooperation in this study.

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