Texila International Journal of Nursing
ISSN: 2520-3126
DOI: 10.21522/TIJNR.2015.08.02.Art002

Evidence-Based Practice: Nurses' Knowledge and Implementation in the Prevention of Pressure Sore Amongst Debilitating Patients in Selected Government Hospitals, Delta State

Nkor, Mary Modupe
Ph.D. in Nursing, School of Nursing, Texila American University, Nigeria

Abstract

Evidence-Based Practice: Nurses' knowledge and implementation; in the prevention of Pressure sore amongst debilitating patients was carried out in selected Government Hospitals in Delta State. The research method for the study was a correlational survey design. A simple random sampling was used to select 250 respondents. Permission to collect data was sought from the Ethical Committee of the Hospital Management Board and from respondents. The data collection instrument was a self-developed structured questionnaire that was validated before use. Data were analyzed using descriptive statistics, and the test statistic used for the hypotheses was the Pearson Product Moment Correlation Coefficient at 95% CI (i.e., at 0.05 significance level). The results demonstrated 54.4% had knowledge of EBP, 19.6% of nurses employed EBP to prevent pressure sore while and 19.6% employed best practice. There exists a significant relationship between nurses' level of knowledge of EBP and the prevention of Pressure sore in debilitating patients ($r=0.338$, df-248, $p<0.05$). There was a relationship between the implementation strategy of EBP and the prevention of Pressure sore in debilitating patients ($r=0.258$, df-248, $p<0.05$). This study revealed the majority had knowledge of EBP. However, there is still a wide gap in knowledge as 38.8% of nurses indicated that opinion, expertise, and intuition are sufficient in preventing Pressure sore in debilitating patients. Nurses are to use nursing models. Models not only increase patient's satisfaction and quality of nursing care but also offer a useful set of frameworks to guide education and nursing practice as failure to translate research evidence into practice hinders patients from adequate care and is likely to have skin breakdown.

Keywords: *Evidence-based practice, Implementation, Nurse's knowledge, Pressure sore, Prevention.*

Introduction

Evidence-based practice (EBP) is an approach that integrates research findings, Clinical expertise, and patients' preferences in providing individualized care for patients [1]. Furthermore, EBP provides quality and cost-effective patient care [2], and it is necessary to improve patients' outcomes as patients are expected to receive effective, individualized care based on available evidence. Although skills, experience, intuition, and body of knowledge acquired from training schools and in-service training are taken into consideration with the patient's values and situation cum the practice context in which the nurse is working in caring for patients; however, the application of EBP is the best research evidence to making the decision about patient care [3].

A debilitating patient is expected to receive the most effective care in Pressure sore prevention in order to advent the development of Pressure sore which is very difficult to heal. Pressure sore is the third most expensive disorder after cardiovascular diseases and cancer [4], and it is described as the costliest and most physically debilitating complication in this contemporary time. It is also a well-known fact that Pressure sore occurs essentially in body

Received: 19.10.2022 ***Accepted: 25.10.2022*** ***Published on: 30.11.2022***
Corresponding Author: nkor.mary@yahoo.com

prominences of the body where there is potential for its breakdown. Besides, Pressure sore is grouped among the five most frequent causes of harm to patient [5] and are a serious and common problem for the elderly. As the population ages, Pressure sore will be a major healthcare problem globally.

This study focuses on EBP: Nurses' knowledge and implementation in preventing pressure sore amongst debilitating patients. Undertaking this study comes because patients with debilitating conditions come down too often with a pressure sore, making them stay longer in hospitals with mounting hospital bills, depression, and some others, having infected sores. Why do debilitating patients come down with Pressure sore despite meticulous care, and best practices? This gives impetus to this study. This study will find out if nurses in Government owned Hospitals have or lack the intrinsic motivation to do research to solve identified needs of patients or read available clinical evidence from journals and systematic reviews from multiple randomized controlled trials to the solved need of patients [3; 6]. The knowledge of EBP is very fundamental to best practice (that is the standardized way of doing things) and will therefore provide nurses in Government owned Hospitals to seek research evidence in making appropriate decisions to increase the chances of preventing Pressure sore in debilitating patients.

The lack of studies on EBP in preventing Pressure sore in debilitating patients in this geographical area makes this study imperative. Therefore, more studies on EBP in the prevention of Pressure sore in debilitating patients in this geographical area are essential. Although studies have been conducted in the past on EBP for example evidence-based practice, utilization, and associated factors among nurses; a study carried out in Ethiopia and in Nigeria, a study on knowledge and utilization of EBP among nurses in specialist hospital was conducted by an author [7]. However, no study has been conducted on nurses' knowledge and implementation of EBP in the prevention of Pressure sore amongst debilitating patients in this geographical area so, it makes this study relevant and insightful, which perhaps can possibly equip nurses with appropriate skills to prevent the breakdown of skin integrity. Therefore, the gap between the identification of research evidence and the applicability of research evidence for the optimal benefit of patients will be bridged in this study thereby enhancing care of patients using quality and relevance evidence in Government owned Hospitals in the State. This may make patients have value for the money they spend on Medicare, give them satisfaction for the care they receive, and perhaps change the wrong opinions they and their significant others have for the nursing profession in this part of the world while some others may perhaps be nursed to a peaceful death.

There is worldwide unanimity that EBP improves outcomes for people using health and social services [8]. Although several studies have been conducted in the past to examine nurse's utilization of EBP in the care of patients, for example, in China, however, it is observed that nurses have insufficient understanding and, therefore, not prepared in the utilization of evidence-based practice due to inadequate time and resources [9]. They further reiterated that improving the health of the patients, clients, and communities is dependent upon nursing care underpinned by evidence-based practice.

The incidence rate of Pressure sore in selected Nigerian hospitals is 13.84% [10]. Most patients affected with Pressure sore are debilitated patients and those confined to chair or bed for a very prolonged period [11] and other health conditions that influence the capillary perfusion and blood supply tissue for example type 2 diabetes mellitus can make them more vulnerable to pressure ulcers [11]. In the USA each year more than 2.5million people develop pressure sore [12] However, Nigeria do not have statistics of patients with pressure sore but individual studies carried out indicate incidence of Pressure sore is high [10].

Nigeria do not have national guidelines for pressure ulcer risk assessment, prevention, and treatment. However, millions are affected globally by Pressure sore and is also recognized as one of the five frequent causes of harm to patients [13]. It is very imperative that pressure ulcer be prevented because it threatens the safety of patients by increasing mortality rate, prolonging hospital stay, decreasing quality of life, and the financial burden increases considerably [5]. Moreover, body image is distorted and coupled with delayed wound healing, affecting overall health outcomes [14]. Using EBP in the prevention of Pressure sore in debilitating patients is both a process and a product that requires that the evidence produced is applied to practice [15].

Prevention of Pressure sore should be based on EBP rather than conventional methods in the prevention of Pressure sore as there is no strong evidence of a reduction in Pressure sore with 30-degree tilt compared with the standard 90-degree position and frequency of positioning on Pressure sore incidence. [16]. EBP can be put into use to prevent Pressure sore in debilitating patients. This is because EBP allows nurses to critically appraise patients' conditions and use scientifically proven evidence to deliver quality nursing care to debilitating patients to prevent pressure sore, [17]. Research has focused on evaluating equipment used to manage the risk of skin breakdown [18]. Current international guidelines strongly recommend repositioning of clients at risk of Pressure sore development [19]. Nevertheless, the evidence base does not support consensus recommendations about care practices such as optimizing the frequency in repositioning, selecting mattress surfaces and identifying the patients most likely to benefit from implementing the various protocols. Although best practices are used in the prevention of pressure sore on the one hand, on the other hand, best practices are not research-based because they do not undergo the same scientific evaluation that evidence-based practices undergo. Thus the evidence-based practice is research-based practice because it has undergone rigorous scientific evaluation [20].

There are factors that facilitate EBP implementation. One factor is education programmes. When healthcare organizations provide resources such as education programmes for nurses, nurse educators, mentors, and organize seminars and sponsor nurses for conferences on EBP utilization, establish journal clubs, these will in no small way facilitate EBP implementation among nurses [21].

There are a lot of challenges in implementing EBP. One such challenge in this geographical area is the lack of a steady supply of power. The availability of electricity in Nigeria has worsened because it is unable to meet the demand due to its policies, regulation, and management of operations [22]. Thus, making access to the internet hampered. Consequently, sourcing for relevant literature likes; journals and articles from the internet using search engines that could help retrieve research findings that can be integrated in decisions making about patient care is hindered. Nurse burnout is another consequence of the lack of knowledge and implementation of EBP. Nurses perhaps may have a sense of reduced accomplishments [23]. Due to a lack of knowledge and implementation of EBP, nurses and nurse managers may make decisions about care of debilitating patients on instincts. According to one author [24], such decisions may be faulty as people do not recognize when their judgement is biased.

One strategy to promote EBP is creating an environment that encourages critical thinking. Critical thinking is essential to EBP as it prepares nurses with the obligatory disposition and skills to support EBP [25]. Nurse Managers can facilitate EBP on the ward because they play a vital role [26]. In addition, the introduction of staff and student nurses to EBP will promote safe, quality, and effective nursing care to patients [27].

The Stetler model can be applied by nurse clinicians to prevent Pressure sores in

debilitating patients in Government Hospitals across the State. The application of this model to this study is that nurses are to first identify the priority needs of the patients, then do a thorough search in databases for research evidence that can help to meet patients' needs or solve patients' problems.

The main objective of this study is to assess nurses' knowledge and implementation of evidence-based practice in the prevention of pressure sores in debilitating patients, while specific objectives consist essentially of the following:

1. To assess nurses' level of knowledge of EBP in the prevention of Pressure sore in selected Government owned Hospitals in the State.
2. To evaluate the implementation strategy of EBP in the care of debilitating patients to prevent pressure sores in selected Government Hospitals.
3. To identify nursing care underpinned in EBP in the prevention of Pressure sore amongst debilitating patients in selected Government Hospitals.
4. To identify challenges nurses face in implementing EBP to prevent Pressure sore in selected Government owned Hospitals.
5. To determine the strategies used to address challenges in the implementation of EBP to prevent Pressure sore in debilitating patients in selected Government owned Hospitals.

The research questions raised were:

1. What was nurses' level of knowledge of EBP in the prevention of Pressure sore in debilitating patients in selected Government owned Hospitals?
2. What was nurses' implementation strategy of EBP in the prevention of Pressure sore in debilitating patients in selected Government Hospitals?
3. Would nursing care underpinned in EBP prevent the development of Pressure sore amongst debilitating patients in selected Government Hospitals?
4. What were the challenges nurses faced in the implementation strategy of EBP in the bid to prevent Pressure sore in debilitating patients in selected Government Hospitals?
5. What strategies have nurses used to address the challenges in the implementation of EBP to prevent Pressure sores in debilitating patients in selected Government Hospitals?

Research Hypothesis

Five research hypotheses were thus raised in a null form.

1. There is no significant relationship between nurses' level of knowledge on EBP and the prevention of Pressure sore in debilitating patients in selected Government owned Hospitals
2. There is no significant relationship between nurse's implementation strategy of EBP and the prevention of Pressure sore in debilitating patients in selected Government owned Hospitals
3. There is no significant relationship between identified nursing care underpinned in EBP and prevention of Pressure sore amongst debilitating patients in selected Government Hospitals
4. There is no significant relationship between challenges nurses may have in the implementation of EBP and the prevention of Pressure sore in debilitating patients in selected Government Hospitals.
5. There is no significant relationship between strategies nurses can use to address Challenges in the implementation of EBP and the prevention of Pressure sore in debilitating patients in selected government hospitals.

Material and Methods

This study adopted a correlational research method, survey design. The study was conducted in five State Government hospitals in Delta state, namely: Central Hospital Warri, Central Hospital Agbor, Central Hospital Sapele, Central Hospital Ughelli, and Government Hospital Eku, all located in three Senatorial districts of the State. The hospitals are

purposively selected due to their status. These hospitals are grouped under the public secondary health facilities in the State. They have between one hundred and thirty-two to two hundred and fifty beds, respectively. Furthermore, they provide medical services to patients in and around Delta state. The population of the study comprised all nurses working in Government owned Hospitals irrespective of their cadre. The population of nurses in Delta state is nine hundred and ninety [28]. A total of two hundred and fifty nurses constituted the sample size of this study which was selected based on a simple random sampling technique. The instrument used for data collection was a self-developed structured questionnaire which was validated by the research supervisor and two experts and was administered by trained personnel. The instrument was divided into sections A, B, and C. Section A contained an introductory letter about the study to the respondents, section B contained demographic data of respondents and section C contained questions for each of the variables investigated. The reliability of the instruments was ascertained using the test-retest method using Cronbach Alpha. The coefficient was 0.77and Pearson product-moment correlation coefficient was used to test all five hypotheses.

Responses were tallied and coded to get their frequencies and were converted to percentages using descriptive statistics for data analysis, and then (the latest version 26 SPSS) inferential statistics Pearson Product Moment Correlation (PPMC) was also used to test for a significant relationship between nurses' level of knowledge of EBP and prevention of pressure sore, nurse's implementation strategy of EBP and prevention of Pressure sore and

Permission was obtained from Ethical Committee. Code of conduct that governs researchers was maintained. The respondents were not coerced into participating, but their consent was obtained based on; the principle of respect and the wishes of individuals participating in the study was respected, and confidentiality and anonymity were maintained. The information provided was never linked to the participant's name.

Results

Table 1. Socio-demographic Characteristics of Respondents

S/N	Variables	Frequency (n=250)	Percent (%)	Mean	SD
1	**Gender**				
	Male	52	20.8	1.79	0.407
	Female	198	79.2		
2	**Age (in years)**				
	21-30	130	52.0	1.91	1.112
	31-40	48	19.2		
	41-50	36	14.4		
	51-60	36	14.4		
3	**Highest level of nursing education**				
	RN	110	44.0	2.02	1.094
	RN/RM	53	21.2		
	BNSc.	70	28.0		
	MSc.	7	2.8		
	PhDN	10	4.0		
4	**Work experience**				
	0-5 years	63	25.2	2.68	1.583

	6-10 years	91	36.4		
	11-15 years	23	9.2		
	16-20 years	27	10.8		
	21-25 years	27	10.8		
	26 years and above	19	7.6		

Table 2. Nurses Level of Knowledge of EBP to Prevent Pressure Sore

S/N	Items	Freq. (n)	Percent	Mean	SD
1.	**Those who knew meaning of EBP**				
	Knew	232	92.8%	0.93	0.259
	Never knew	18	7.2%		
2.	**Those being taught of EBP in school**				
	Being taught	202	80.8%	0.81	0.395
	Never taught	48	19.2%		
3.	**Those with adequate knowledge to carry out EBP approach**				
	Knowledgeable to carry out EBP approach	136	54.4%	0.54	0.499
	Not Knowledgeable	114	45.6%		
4.	***Definition of EBP according to respondents' view**				
	Using best practices in making decision about patient care	64	25.6%	0.35	0.47
	Using nursing expertise and intuition in patient care	98	39.2%		
	Making decision about using research findings	102	40.8%		
5.	**Those who research database for current research evidence on the prevention of pressure sore**				
	Always researching database	50	20.0%	1.89	0.526
	Rarely research database	178	71.2%		
	Never researched database	22	8.8%		
6.	**Ascertaining how often database is being searched**				
	Always searched	63	25.2%	1.85	0.575
	Rarely searched	162	64.8%		
	Never searched	25	10.0%		
7.	**Ascertaining how often published journals are read to understand how Pressure sore can be prevented**				
	Read always	54	21.6%	1.91	0.577
	Rarely read	165	66.0%		
	Never read	31	12.4%		
8.	**Opinions, intuition, and nurse's expertise being sufficient in preventing pressure sore**				
	Sufficient	97	38.8%	0.95	0.782
	Not sufficient	83	33.2%		
	No idea	70	28.0%		
9.	***Best decisions in preventing pressure sore**				
	Reporting to the nurse manager	121	48.4%	0.25	1.482
	Informing the doctor on duty	11	4.4%		
	Doing a systematic review	89	35.6%		

	Using a model	24	9.6%		
10.	***Relevance of systematic review**				
	Making right decision in Pressure sore prevention	89	35.6%	0.39	0.492
	Delivering exceptional nursing care	138	55.2%		
	Prevents pressure sore	46	18.4%		
11.	**Knowledge on whether Stetler's model can help in selecting best evidence in preventing pressure sore**				
	Knowledgeable	130	52.0%	1.18	0.671
	Not knowledgeable	38	15.2%		
	Do not know	82	32.8%		

*Multiple responses

Table 3. Implementation Strategies of Evidence-Based Practice in the Prevention of Pressure Sore

S/N	Items	Freq. (n)	Percent	Mean	SD
1.	**Those who ever nursed a debilitating patient**				
	Always nursed debilitating patient	83	33.2%	1.24	0.607
	Rarely nurse a debilitating patient	144	57.6%		
	Never nursed a debilitating patient	23	9.2%		
2.	**Patient ever had potential to develop pressure sore**				
	Always had potential to develop pressure sore	100	40.0%	1.35	0.636
	Rarely have potential to develop pressure sore	128	51.2%		
	Never had potential to develop pressure sore	20	8.8%		
3.	**Scale used to assess patents' potential for developing pressure sore**				
	Braden scale	144	57.6%	1.60	0.776
	Norton scale	61	24.4%		
	Water low scale	45	18.0%		
4.	**Pressure sore prevention as priority for patient**				
	Always a priority for patient	49	19.6%	1.14	0.488
	Rarely a priority for patient	186	74.4%		
	Never a priority for patient	15	6.0%		
5.	***Approaches used to prevent pressure sore**				
	Two hourly turning	216	86.4%	0.42	0.423
	Pressure area care	130	52.0%		
	Ambulating patient	85	34.0%		
	Employed best practice	49	19.6%		
	Employed EBP	49	19.6%		
6.	***Approach found to be successful**				
	Two hourly turning	124	49.6%	0.34	0.424
	Pressure area care	161	64.4%		
	Ambulating patient	49	19.6%		
	Employed best practice	32	12.8%		
	Employed EBP	52	20.8%		
7.	***Models used in preventing pressure sore**				
	Stetler's Model	57	22.8%	0.21	0.365
	John Hopkin's EBP Model	44	17.6%		

	Iowa Model	102	40.8%		
	Rosswurm and Larrabee Model	7	2.8%		

*Multiple responses

Table 4. Consequences of not Implementing EBP in Providing Nursing Care in the Prevention of Pressure Sore

S/N	Items	Freq. (n)	Percent	Mean	SD
1.	**Consequences exists if EBP is not implemented when providing nursing care to prevent pressure sore**				
	Agreed	214	85.6%	0.86	0.352
	Disagreed	36	14.4%		
2.	***Possible consequences**				
	Prolonged hospital stay	145	58.0%	0.51	0.483
	Increased cost of care	98	39.2%		
	Breakdown of skin integrity	150	60.8%		
	Disability/immobility	170	68.0%		
	Infection	126	50.4%		
	Death	73	29.2%		

*Multiple responses

Table 5. Challenges in the Implementation of EBP to Prevent Pressure Sore

S/N	Items	Freq. (n)	Percent	Mean	SD
1.	***Challenges encountered in implementing EBP to prevent pressure sore**				
	No internet services	87	34.8%	0.28	0.421
	No access to computer	159	63.6%		
	Management do not provide data	63	25.2%		
	Do not know how to search for articles in databases	28	11.2%		
	EBP not yet incorporated in the care of patients in the facility	70	28.0%		
	Not interested in using EBP in the care of patients	31	12.4%		
	No time due to workload	98	39.2%		
	No supply of power	54	21.6%		
	No equipment like e-books, library, etc.	48	19.2%		

*Multiple responses

Table 6. Strategies to Address Challenges

S/N	Items	Freq. (n)	Percent	Mean	SD
1.	***Strategies employed to address challenges**				
	Incorporating EBP in the training institutions by NMC	149	59.6%	0.46	0.588
	Conferences/seminars to train graduate nurses	122	48.8%		
	Using knowledgeable facilitators/mentor in providing care	92	36.8%		
	Providing relevant equipment by the management	102	40.8%		
	Providing an environment that encourages critical thinking	91	36.4%		

*Multiple responses

Findings

A total of 285. copies of the questionnaires were administered, but only 250 were retrieved and correctly filled, giving a response rate of 87.7%, upon which data analysis was done.

Table 1 shows the Socio-demographic characteristics of respondents. Out of the 250 (100%) respondents, the majority, 198 (79.2%), were females, while 52 (20.8%) were males. Most of the participants, 130 (52.0%), were within the age group 21-30 years, followed by 48 (19.2%) within 31-40 years, while 36 (14.4%) were within 41-50 years and 51-60 years, respectively.

As shown in Table 2, the classification of nurses' level of knowledge, respondents who knew the meaning of evidence-based practice were 232 (92.8%), and those who never knew the meaning were 18 (7.2%). Those taught EBP were 202 (80.8%), and those never taught were 48(19.2%). Nurses who had adequate knowledge to carry out the EBP approach were 136 (54.45%), and those who did not have the knowledge to carry out EBP approach were 114 (45.0%). Those whose view of EBP is using best practice in making the decision about patient care were 64(39.2%), while those who made the decision based on research findings were 102 (40.8%). Respondents who reported to the nurse manager as the best decision to prevent Pressure sore were 121(48.4%). Those who informed the doctor on duty were 11(4.4%). Those who do a systematic review to get evidence were 89(35.6%), while those who use the model were 24(9.6%).

Respondents who have knowledge of Stetler's model and indicate it as the best approach in selecting appropriate evidence to pressure sore prevention were 130 (52%). Those not acknowledgeable were 38 (15.2%), while those who do not know that Stetler's model can help in selecting appropriate research evidence to make the right decision about Pressure sore prevention were 82 (32.8%).

With regards to implementation strategy, as indicated in Table 3A, Nurses who have cared for debilitating patients were 88 (37.2%), rarely nursed debilitating patients were 144 (57.6%) and 23 (9.2%) never nursed debilitating patients. Respondents who believed patients rarely had the potential to develop Pressure sore were 100(40%). Those who believed patients rarely had potential were 128 (51.2%), while those who believed patients never had the potential to develop Pressure sore were 20 (8.8%). Respondents who always viewed the prevention of Pressure sore as a priority need of patients were 186 (74.4%), while those who never viewed the prevention of Pressure as a priority need of patients were 15 (6.0%).

With regards to the approach used to preventing pressure sore, 213 (86.4%) respondents used 2 hrly turning approach, those who used pressure area care only were 130 (52.0%), those who employed evidence-based practice were 49 (19.6%), those who ambulate patients only were 85 (34.0%) while those who employed best practice only were 49 (19.6%). With regards to the approach found to be successful, 124 (49.6%) found 2 hrly turning approach successful in preventing pressure sore, 161 (64.4%) found the pressure area care approach successful, 49 (19.6%) found ambulating patient approach successful, 32 (12.8%) found best practice approach successful while 52 (20.8%) approach successfully in preventing Pressure sore.

Results in Table 4 show the consequences of not implementing EBP in providing nursing care to prevent pressure sore. 214 (85.6%) respondents agreed consequences exist when EBP is not implemented in providing nursing care to prevent pressure sore, and 36 (14.4%) disagreed.

On possible consequences, 145 (45.0%) indicated prolonged hospital stay as possible consequences, 98 (39.2%) indicated increased cost of care as a possible consequence, 150 (60.8%) indicated a breakdown of skin integrity as a possible consequence, 170 (68.0%) indicated disability/immobility as possible consequences, 126 (50%) indicated infection as

possible consequence while 73 (29.2%) as a possible consequence of Pressure sore if not prevented.

Results in Table 5 showed challenges in the implementation of EBP to prevent pressure sore, 87 (34.8%) stated no internet service, 159 (63.6%) indicated no access to the computer, 63 (25.2%) stated management does not provide data, 28 (11.2%) stated they do not know how to search for articles in databases, 70 (28.0%) stated that EBP is not yet incorporated into the care of patients in the facility. 31(12.4%) not interested in using EBP in the care of patients, 98 (39.2%) had no time due to workload, 54 (21.6%) had no supply of power, while 48 (19.2%) had no equipment like e-books, library etc.

Results in Table 6 showed strategies to address challenges.149 (59.6%) indicated that incorporating EBP in the training institutions by the Nursing and Midwifery Council in Nigeria could address challenges, 122 (48.8%) indicated that holding conferences/seminars to train graduate nurses could be a strategy to address challenges, while, 92 (36.8%) indicated that using facilitators/mentors who have knowledge of EBP to provide skills and knowledge to nurses who are novice could be another strategy to address challenges to implementing EBP in the prevention of pressure sore. 102 (40.8%) indicated that providing relevant equipment by the management could also address the challenges, while 91 (36.4%) indicated that providing an environment that encourages critical thinking could address the challenges in the implementation of EBP in order to prevent pressure sore.

Hypotheses Testing

Hypothesis One

Ho_1: There is no statistically significant relationship between nurses' level of knowledge on EBP and the prevention of Pressure sore in debilitating patients in selected Government owned Hospitals. To test this hypothesis, the independent variable was nurses' level of knowledge on EBP, while the dependent variable was the prevention of pressure sore. The test statistic used was the Pearson Product Moment Correlation Coefficient at 95% CI (i.e., at 0.05 significance level). The analysis in Table 2 showed that there exists a low, positive linear correlation between the two variables since the r-value is 0.338. In other words, the strength of the relationship is a positively low one. Since the p-value (p=0.0001) is less than a 0.05 significance level, the null hypothesis was rejected. Therefore, the researcher concluded that there is really a statistically significant relationship between nurses' level of knowledge of EBP and the prevention of Pressure sore in selected Government owned Hospitals (p<0.05).

Table 7. Pearson's Product Moment Correlation Analysis of the Predictive Relationship between Nurses' Level of Knowledge on EBP and Prevention of Pressure Sore in Selected Government-Owned Hospitals (n=250)

Variables	n	Mean	SD	r-value	p-value
Knowledge level	250	1.60	0.665	-	-
-	-	-	-	0.338	0.0001**
Prevention of pressure sore	250	1.520	0.501	-	-

**Statistical significance based on P-value < 0.05 at 95% CI

Table 7a. Correlations

Correlations		Level of knowledge on EBP	Prevention of pressure sore
Level of knowledge on EBP	Pearson Correlation	1	.338**
	Sig. (2-tailed)	-	.000

	N	250	250
Prevention of pressure sore	Pearson Correlation	.338**	1
	Sig. (2-tailed)	.000	-
	N	250	250

**. Correlation is significant at the 0.05 level (2-tailed).

Hypothesis Two

Ho_2: There is no significant relationship between nurses' implementation strategy of EBP and the prevention of Pressure sore in debilitating patients in selected Government owned Hospitals. To test this hypothesis, the independent variable was the nurse's implementation strategy of EBP, while the dependent variable was the prevention of pressure sore. The test statistic used was the Pearson Product Moment Correlation Coefficient at 95% CI (i.e., at 0.05 significance level).

Table 8. Pearson's Product Moment Correlation Analysis of the Predictive Relationship between Nurse's Implementation Strategy of EBP and Prevention of Pressure Sore in Debilitating Patients in Selected Government Owned Hospitals (n=250)

Variables	**N**	**Mean**	**SD**	**r-value**	**p-value**
Implementation strategy of EBP	250	2.280	1.852	-	-
-	-	-	-	0.258**	0.000**
Prevention of pressure sore	250	1.520	0.501	-	-

**Significant at $p < 0.05$

Table 8a. Descriptive Statistics

Descriptive Statistics	**Mean**	**Std. Deviation**	**n**
Nurses' implementation strategies of EBP	2.2800	1.85238	250
Prevention of pressure sore	1.5200	.50060	250
Correlations			
		Nurse's implementation strategy of EBP	Prevention of pressure sore
Nurse's implementation strategy of EBP	Pearson Correlation	1	.258**
	Sig. (2-tailed)		.000
	N	250	250
Prevention of pressure sore	Pearson Correlation	.258**	1
	Sig. (2-tailed)	.000	
	N	250	250

**. Correlation is significant at the 0.01 level (2-tailed)

Table 8 showed that there exists a negligible, positive linear correlation between the two variables since r-value is 0.258. In other words, the strength of the relationship is the positively weak one. Since the p-value (p=0.000) is less than 0.05 significance level, the null hypothesis was rejected. Therefore, the researcher concluded that there is a statistically significant relationship between nurse's implementation strategy of EBP and the prevention of Pressure sore in debilitating patients in selected Government owned Hospitals ($p<0.05$).

Hypothesis Three

Ho_3: There is no significant relationship between identified nursing care underpinned in EBP and prevention of Pressure sore amongst debilitating patients in selected Government Hospitals. To test this hypothesis, the independent variable was identified as nursing care underpinned in EBP, while the dependent variable was the prevention of pressure sore. The test statistic used was the Pearson Product Moment Correlation Coefficient at 95% CI (i.e., at 0.05 significance level).

Table 9. Pearson's Product Moment Correlation Analysis of the Predictive Relationship between Identified Nursing Care Underpinned in EBP and Prevention of Pressure sore amongst Debilitating Patients in Selected Government Hospitals (n=250)

Variables	**n**	**Mean**	**SD**	**r-value**	**p-value**
Identified nursing care underpinned in EBP	250	2.12	1.254	-	-
-	-	-	-	0.601**	0.000**
Prevention of pressure sore	250	1.520	0.501	-	-

**Significant at $p < 0.05$

Table 9a. Descriptive Statistics

Descriptive Statistics		**Mean**	**Std. Deviation**	**n**
Nursing Care underpinned in EBP		2.12	1.254	250
Prevention of pressure sore		1.5200	.50060	250
Correlations				
			Nursing Care underpinned in EBP	**Prevention of pressure sore**
Nursing Care underpinned in EBP	Pearson Correlation		1	.601**
	Sig. (2-tailed)			.000
	n		250	250
Prevention of pressure sore	Pearson Correlation		.601**	1
	Sig. (2-tailed)		.000	
	n		250	250

**. Correlation is significant at the 0.01 level (2-tailed)

Table 9 shows that there exists a strong, positive linear correlation between the two variables since R-value is 0.601. In other words, the strength of the relationship is a strong, positively moderate one. Since the p-value (p=0.000) is less than 0.05 significance level, the null hypothesis was rejected. Therefore, the researcher concluded that there is a statistically significant relationship between identified nursing care underpinned in EBP and prevention of Pressure sore amongst debilitating patients in selected Government Hospitals ($p<0.05$).

Ho_4: There is no significant relationship between challenges nurses may have in the implementation of EBP and the prevention of Pressure sore in debilitating patients in selected Government Hospitals. To test this hypothesis, the independent variable was challenges nurses might have in the implementation of EBP while the dependent variable was the prevention of pressure sore. The test statistic used was the Pearson Product Moment Correlation Coefficient at 95% CI (i.e., at 0.05 significance level).

Hypothesis Four

Table-10. showed a low, positive linear correlation between the two variables since the r-value is 0.376. The strength of the relationship is a positively low one. Since the p-value (p=0.000) is less than 0.05 significance level, the null hypothesis was rejected. Therefore, the researcher concluded that there is a statistically significant relationship between challenges nurses may have in the implementation of EBP and the prevention of Pressure sore in debilitating patients in selected Government Hospitals (p<0.05).

Table 10. Pearson's Product Moment Correlation analysis of the predictive relationship between challenges nurses may have in the implementation of EBP and the prevention of Pressure sore in debilitating patients in selected Government Hospitals (n=250)

Variables	**n**	**Mean**	**SD**	**r-value**	**p-value**
Nurses' challenges	250	2.552	1.884	-	-
-	-	-	-	0.376**	0.000**
Prevention of pressure sore	250	1.520	0.501	-	-

**Significant at p < 0.05

Table 10a. Descriptive Statistics

Descriptive Statistics	**Mean**	**Std. Deviation**	**n**
Nurse's challenges	2.5520	1.88401	250
Prevention of pressure sore	1.5200	.50060	250
Correlations			
		Nurses challenges	**Prevention of pressure sore**
Nurses' challenges	Pearson Correlation	1	.376**
	Sig. (2-tailed)		.000
	n	250	250
Prevention of pressure sore	Pearson Correlation	.376**	1
	Sig. (2-tailed)	.000	
	n	250	250

**Correlation is significant at the 0.01 level (2-tailed)

Hypothesis Five

Ho_5: There is no significant relationship between strategies nurses can use to address challenges in the implementation of EBP and the prevention of Pressure sore in debilitating patients in selected government hospitals. To test this hypothesis, the independent variable was strategies nurses can use to address challenges in the implementation of EBP, while the dependent variable was the prevention of pressure sore. The test statistic used was the Pearson Product Moment Correlation Coefficient at 95% CI (i.e., at 0.05 significance level).

Table 11. Pearson's Product Moment Correlation Analysis of the Predictive Relationship between Strategies Nurses can use to Address Challenges in the Implementation of EBP and Prevention of Pressure Sore in Debilitating Patients in Selected Government Hospitals (n=250)

Variables	**n**	**Mean**	**SD**	**r-value**	**p-value**
Nurses' challenges	250	3.912	1.880	-	-
-	-	-	-	0.394**	0.000**
Prevention of pressure sore	250	1.520	0.501	-	-

**Significant at $p < 0.05$

Table 11a. Descriptive Statistics

Descriptive Statistics	**Mean**	**Std. Deviation**	**n**
Strategies to address challenges	3.9120	1.88000	250
Prevention of pressure sore	1.5200	.50060	250
Correlations			
		Strategies to address challenges	**Prevention of pressure sore**
Strategies to address challenges	Pearson Correlation	1	.394**
	Sig. (2-tailed)	-	.000
	N	250	250
Prevention of pressure sore	Pearson Correlation	.394**	1
	Sig. (2-tailed)	.000	-
	N	250	250

**Correlation is significant at the 0.01 level (2-tailed).

Table 11 showed a low, positive linear correlation between the two variables since the r-value is 0.394. The strength of the relationship is a positively low one. Since the p-value (p=0.000) is less than 0.05 significance level, the null hypothesis was rejected. Therefore, the researcher concluded that there is a statistically significant relationship between strategies nurses can use to address challenges in the implementation of EBP to prevent Pressure sore in debilitating patients in selected government hospitals ($p<0.05$).

Discussion

The data obtained in table 1 showed the socio-demographic characteristics of respondents. The percentage of female respondents is higher (79.2%) than that male respondents (20.8%). This demonstrated female dominance in the nursing profession in Delta State. However, both genders were represented in this study to enable the generalization of this study to target population.

A greater percentage (44.0%) of the nurses in the study hold registered nurse certificates. The percentage of holders of Registered Nurse/Midwife Certificates is 21.2%, while Bachelor of Nursing Science (BNSc) is 28.0%. The larger workforce is at a low level of nursing education. This may affect effective patient care. Clinicians with Bachelor of Nursing Science degrees are better prepared to meet the challenges and demands placed on today's nurse [29]. Therefore, continued update of nursing knowledge and skills is essential for nurses in all cadre working in Government Hospitals in the State to meet the expectations of the patients.

Regarding work experience, 36.4% have worked between six years to ten years only. This revealed many nurses working in the selected

Government Hospitals are still young in the profession. Nurses work experience to provide guidelines to make the appropriate decision for patient care, as inexperience would negatively impact on the quality of care rendered to a debilitating patient by a nurse [30]. Regarding nurses' knowledge of EBP to preventing pressure sore, 48.4% indicated that the best decision to make in preventing Pressure sore is to report to the nurse manager, while 35.6% and 9.6%, respectively, indicated that doing a systematic review and using a model are best decisions in preventing pressure sore. Although reporting can help managers make appropriate decisions to ensure good clinical performance and outcome [31], an author [32] asserted that the model on pressure sore prevention ensures all basic aspects of Pressure sore prevention are included in the care of patients. Moreover, [6] also noted that a systematic review of evidence from multiple randomized controlled trials is at the top of the hierarchy in terms of evidence regarding intervention effectiveness. Models inform accurate decision-making in Pressure sore prevention. Therefore, nurses, perhaps in Government Hospitals, may use models as they ensure fundamental aspects of Pressure sore prevention.

Moreover, 38.8% indicated that opinions, intuition, and nurse expertise are sufficient in preventing Pressure sore while 33.2% said not sufficient. Therefore, the intuition, opinions, and expertise of nurses may not be sufficient to prevent Pressure sore in debilitating patient in Government Hospitals hence nurses may need to have knowledge on evidence-based practice to make appropriate decision to prevent Pressure sore in all Government Hospital in Delta State. An author [3] opined that experience, intuition, and body of knowledge acquired are taken into consideration with patient's value and the context in which the nurse is working in caring for patients. However, the application of EBP is the best research finding to make the decision about patient care.

With reference to implementation strategies of EBP in the prevention of pressure sore, 86.4% employed 2 hourly turnings, 52.0% did pressure area care, 34.0% ambulated the patients, 19.6% employed evidenced-based practice and 19.6% used best practice. Best practices (turning pressure area care, ambulating patients, and doing pressure area care) is a set of guidelines on how to carry out tasks [33], while evidence-based practice is a research-based practice that has undergone rigorous scientific evaluation, which best practice does not undergo [6]. Thus, nurses in Government Hospitals in the State may perhaps employ research evidence to care for debilitating patients, which might make the implementation strategy of EBP better.

Furthermore, the use of scales in assessing patients' potential for developing Pressure sore is another implementation strategy. 57.6% used Braden Scale to assess patient's potential to develop a pressure sore. 24.4% used Norton Scale, while 18.9% used the Water-low scale. [34] asserted that Norton is the widely used scale because it is most effective in predicting pressure sore risk in a surgical ward in Indian as nutrition, friction, shear, body mass index, mobility, and activity are the significant factors in the surgical ward. No statistics is Nigeria to back up this claim.

In contrast, the Braden scale is the most widely used scale in the US [35] nevertheless, the three scales are the most widely used tools for the formal assessment for the risk of pressure sore. Jo Brown [36] observed that Braden Scale is useful for predicting pressure sore risk nonetheless, she asserted that it should be used with clinical nursing judgment. Prevention of Pressure sore is imperative and cannot be over emphasized. It is perhaps absolutely a priority for nurses in Government Hospitals in Delta State. On possible consequences of not implementing nursing care underpinned in EBP in preventing pressure sore, 58.0% indicated that prolonged stay is a possible consequence, 60.8% indicated a breakdown of skin integrity is also a possible consequence, 68.0% said disability and

immobility are possible consequences, 50.4% indicated infection a consequence while 29.2% indicated deaths as a possible consequence. This observation supports one author [5] that Pressure sore can be prevented because it threatens the Safety of patients by increasing the mortality rate, prolonging hospital stay, decreasing quality of life, and increasing financial burden considerably. However, these may be prevented when nursing care rendered to patients are underpinned by evidence-based practice.

Also, 85.6% agreed that consequences exist when nursing care underpinned in EBP is not provided for debilitating patients. This observation is in support of one author [23] that the health of the patient may be compromised as evidence-based practice enhances health and improve the quality of life of patients with debility. Nurses are to implement EBP when providing nursing care to prevent Pressure sore in debilitating patients in selected Government Hospitals. On the challenges in implementing EBP to prevent pressure sore, 63.6% stated that they do not have access to the computer, 34.8% said that internet services are not made available, and 21.6% indicated that there is no supply of power. The availability of electricity will power the computer and provide access to a plethora of articles online. However, the "epileptic" power supply in Nigeria has worsened as it is unable to meet the demand due to its policies and management operations, consequently making hospitals to rely on self-generated power using either diesel or petrol [22]. This consequently posed a lot of challenges to using internet service and computers, making running costs expensive.

Conclusion

This study assessed EBP nurses' knowledge and implementation in the prevention of Pressure sore amongst debilitating patients in selected Government Hospitals in Delta State. Findings showed there are challenges in implementing EBP to prevent Pressure sore in debilitating patients in the State; however, providing equipment can address these challenges in implementing EBP. There is also a wide gap in knowledge as nurses indicated that expertise, opinion, and intuition are sufficient in preventing Pressure sore in debilitating patients. Nurses are to be encouraged to learn how to use nursing models as models do not only increase patient satisfaction and quality of nursing care but also offer a useful set of framework to guide education and nursing practice as failure to translate research evidence into practice hinders patients from benefiting optimally from adequate care and are likely to be exposed to skin breakdown.

Recommendations

1. Nurses in Government Hospitals are to prioritize pressure sore prevention for debilitating patients and employ EBP as an implementation strategy to prevent pressure sore.
2. Government to provide adequate equipment needed to prevent Pressure sore and provide steady power supply to enable nurses access plethora of articles and journals online to integrate research evidence in decisions about patient care.
3. Health policy formulations and implementers are to use this information in this study to guide nursing practice in all Government Hospitals and to create a monitoring team to ensure quality assurance in Pressure sore prevention in all Government Hospitals in Delta State.

Acknowledgement

I wish to express my profound gratitude to Dr. Ofili, Mary, my supervisor, for her comments on this project (article), the academic staff of Texila American University, and my academic mentors for their support during my program.

Conflict of Interest

There is no conflict of interest.

Funding

No grant was received from any organization, either public or private.

References

[1] Smeltzer, S. C. Bare, B. G. Hinkle, J. L. & Cheever, K.H., (2008). *Textbook of Medical-Surgical Nursing.* 11th ed. Lippincott Williams & Wilkins.

[2] Chrisman, J. Jordan, R. Davis, C. & Williams, W., [2014]. Exploring Evidence-based Practice *Research. Journal of IWW*. 12[4]: 8-12. https://doi.org/10.1097//01.NME.000045029593626.e7.

[3] Turner, M., [2014]. Evidence-Based Practice in Health. https://canbrra.libguides.com/evidence.

[4] Agrawal, K. & Chauhan, N., [2012]. Pressure Ulcers: Back to the Basics. *Indian Journal of Plastic Surgery.* 45[2]: 244-254. https://doi.org/10.4103/0970-0358.101287.

[5] Shiferaw, W.S. Aynalem, Y.A.& Akalu, T. Y., [2020]. Prevalence of Pressure ulcers among Hospitalized Adult Patients in Ethiopia: A Systematic Review and Meta-analysis. BioMed Central Dermatol. https://doi.org/10.1186/s12895-020-00112=2bmcdermatol.biomedcentral.com.

[6] Polit, D.F. & Beck, C.T., [2012. Nursing Research: Generating and Assessing Evidence for Nursing Practice. 9th ed. Lippincott Williams and Williams.

[7] Famutimi, E.O. & Fowomola, B.B., (2015). Knowledge and Utilization of Evidence-based Nursing Practice among Nurses of Offa Specialist Hospital Kwara State. *Journal of Nursing and Health Science*.4(4): 51-62. http://www.iosrjournal.org/.

[8] Mathieson, A. Grande, G. & Luker, K., (2019). Strategies, Facilitators, and Barriers to Implementation of Evidence-based Practice in Nursing Community: A Systematic Mixed-studies Review and Qualitative Synthesis. Primary Healthcare Research Development.20 (6) https://doi.org/10.1017/S14634236/8000488w.iosrjournal.org.

[9] Shu Li, M. B. Meijuan, C.A.O. & Xuejiao, Z., (2019). Evidence-based Practice, Knowledge, Attitude, Implementation, Facilitators, and Barriers among Community Nurses-Systematic Review. Doi:10.109/MD.0000000000017209.

[10] Onigbinde, A. T., [2012]. Pressure Ulcers Incidence among High Risk in Patients in Nigeria. *British Journal of Nursing.*

[11] Bhattacharya, S. & Mishra, R.K., [2015]. Pressure Ulcers: Current Understanding and Newer Modalities of Treatment. https://ncbi.nlm.nih.gov/.

[12] United State Department of Health and Human Services. The White House. [2020]. Preventing Pressure ulcer in Hospital. https://www.ahrq.gov/.

[13] Esan, T. Fasoro, A. Ojo, F. & Obialor, B. A., (2018). Descriptive Cross-sectional Study to Assess Pressure Ulcer Knowledge and Pressure ulcer Prevention, Attitude, of Nurses in a Tertiary Health Institution in Nigeria. Ostomy Wound Manage. 6496):24-28. Doi.org/10.25270/owm.2018.6.2428.

[14] Gorecki, C. Brown, J. M. Nelson, E.A. Briggs, M. Schoonhoven, L. Dealey, C. Defloor, T. & Nixon, J., [2009]. Impact of Pressure ulcers on Quality of Life in Older Patients: *A Systematic Review.* J A M Geriatrics. Google Scholar.

[15] Rutledge, D. A. & Bookbinder, M. (2002). Process and Outcomes of Evidence-based Practice. https://doi.org/10.1053/sonu.2002.30036.

[16] Gillespie, B.M. Walker, B. M. Latimer, S.L. Thalib, L. Whitty, J.A. Mclnnes, E. &. Chaboyer, W.P. (2020). Repositioning for Pressure Injury Prevention in Adults. *Conchrane Database Systematic Review.* 2(6); https://doi.org/10.1002/14651858.CD009958.

[17] Majid, S. Foo, S. Luyt, B. Zhang, X. Thang, Y. & Chang, Y., [2012]. Adopting evidence-based Practice in Clinical Decision-making: Nurses' Perceptions Knowledge and Barriers. *Journal of the Medical Library Association.* 99[3]: 229-236. https://doi.org/10.3163/1536-5050.99.3.010.

[18] Gardiner, L. Lampshire, S. Biggins, A. MacMurray, A. Noake, N. VanZyl, M. Vickery, J. Woodage, T. Lodge, J & Gillespie, B.M. Walker, B. M. Latimer, S.L. Thalib, L. Whitty, J.A. Mclnnes, E. &. Chaboyer, W.P. (2020). Repositioning for Pressure Injury Prevention in Adults. Conchrane Database Systematic Review. 2(6); https://doi.org/10.1002/14651858.CD009958.

[19] Yap, T. L' Kennerly, S. M. & Horn, S., (2016). An Evidence-based cue Selection Guide and Logic Model to Improve Pressure ulcer Prevention in Long Term Care. Journal of Nursing Care Quality. 31(1): 75-83. https://doi.org/10.1097/NCQ.0000000000000128.

[20] Nieswiadomy, R. M. & Bailey, C., [2018]. *Foundations of Nursing Research*. 7th ed. Pearson Education, Inc.

[21] Hsieh, P. & Chen, S., [2020]. Effectiveness of an Evidence-based Practice Educational Intervention among Student Nurses. https://doi.org/10.3390/ijerph17114083.

[22] Olowosejeje, S. A., (2020). Quantifying the Challenges Associated with Poor Electricity Supply in Nigeria and the Role of a Hybrid P V System in Addressing them. https://creativecommons.org//licenses/by-nc-nd/4.0/Accessed 2 February 2022.

[23] Chijindu, A.C. Ezenuigbo, C. & Emeh, A.N., (2016). Evaluation of Barrier to the Implementation of Evidence-based Practice among Nurses Working at Federal Teaching Hospital Abakaliki. *European-American Journal*. https://www.eajournals.org Accessed 2 February 2022

[24] Koch, A.J. D'Mello, S.D.& Sackett, P.R., [2016]. A Meta-analysis of Gender Stereotypes and Bias in Experimental Simulations of Employment Decision Making. *Journal of Applied Psychology Health and Wellbeing*; 100[1]:128-61. https://doi.org/10.1037/a0036734.

[25] McGrath, J., (2005). Critical Thinking and Evidence-based Practice. *Journal of Professional nursing*. 21(6):364-71. https://doi.org/10.1016/j.profnurs.2005.10.002.

[26] Kueny, A. Shever, L. L Mackin, M.L. Titler, M.G., [2015]. Facilitating the implementation of evidence-based practice through contextual support and nursing leadership. *Journal of Healthcare Leadership*. 7:29-39. https://doi.org/10.2147/jhl.s45077.

[27] Chiwaula, C. H. Kanjakaya, P. Chipeta, D. Chikatpwa, A. Kalimbuka, T. Zyambo, L. Nkata, S. & Jere, L. D., (2020). Evidence-based Nursing. *International Journal of Africa Nursing Sciences*. https://doi.org/10.1016/ijans2020.100272.

[28] Hospital Management Board. (2021). Nominal roll for Nurses Delta State.

[29] The American Association of Colleges of Nursing. (2021). Clinicians with Bachelor of Science in Nursing. https://www.aacnnursing.org.

[30] Morrison, A.L. Durie, M. & Beck, C.R., (2001). The effects of nursing staff inexperience on the occurrence of adverse patient experiences in ICUs. https://doi.org//10.1016/s1036.7314(01)80028x.

[31] Calzon, B., (2022). How to Improve Facility Management with Healthcare Reports. datapine.com

[32] Young, C., (2021). Using the 'a SSKINg model in pressure ulcer prevention and care planning. https://doi.org./10.7748/ns,2021.e/1674 *Journal of Nursing Standard*.

[33] Wright, G., (2022). Best Practice. https://www.techtarget.com.

[34] Kumari, S. Sharma, D. Biswal, U. C. Rana, A. Kuma, A. Pathak, R. & Lal, R., (2012). Risk assessment tool for pressure ulcer development in Indian surgical wards. Doi:10.1007/s12262-012-0779-y.

[35] Pancorbo-Hidalgo, P. L. Garcia-Fernandez, F. P. Lopez-Medina, I. M. & Alvarez-Nieto, C., (2006). Risk Assessment Scales for Pressure Ulcer Prevention: A Systematic Review. *Journal of Advance Nursing*. 54 (1):94-110. Doi.10.1111/j1365-2648.2006.0379x.

[36] Jo Brown, S., (2004). The Braden scale: A review of the research evidence. *National Association of Orthopedic Nurses*. 23 (1): 30-8.