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Compliance of Student Nurses in Performing Physical Health Assessment

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Abstract This study was conducted to determine the compliance of student nurses in Benguet State University in performing physical health assessment. It also aimed to compare the differences in the compliance of student nurses in performing physical health assessment nurses when grouped according to year level. In addition, it was conducted to determine the area of assessment with the highest compliance of student nurses when their previous area of duty was considered. Survey Research Design was used to collect, record, analyze and interpret data. Total enumeration was used with a total of 141 respondents. A questionnaire was used in order to gather data. Data analysis methods that were used include frequency counts, weighted mean, and T-test. Findings reveal that student nurses have a high compliance in performing physical health assessment. The study also reveals that there are significant differences in the compliance of student nurses in performing physical health assessment when they are grouped according to year level. Furthermore, the area of assessment with the highest compliance of student nurses when their previous area in considered is positioning the patient which was done in the obstetrics-gynecology ward.

Keywords Physical health assessment, Quality nursing care, Student nurses, Ward, Year level

1. Introduction

Assessment is an interactive process of information gathering and analysis that nurses carry out to identify client strengths and actual and potential health problems and to evaluate effectiveness of care. A comprehensive assessment includes data about client's psychosocial, spiritual, cultural, environmental, and developmental status as well as physiological health. Nurses also regularly perform focused assessments as indicated by client needs (Kozier et.al., 2011) [1].

Assessment is considered to be the first step in the process of individualized nursing care. It provides information that is critical to the development of a plan of action that enhances personal health status. It also decreases the potential for, or the severity of, chronic conditions and helps the individual to gain control over their health through self-care (Ford, P. et. al., 2004) [2].

Physical health assessment may be conducted starting at the head and proceeding in a systematic manner downward or head-to-toe assessment. However, the procedure can vary considering the age of the individual, the severity of the illness, and the preferences of the nurse (Kozier et.al., 2011) [1].

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There are four techniques used in physical health assessment – inspection, palpation, percussion and auscultation. Inspection is the use of senses of vision, smell and hearing to observe and detect normal and abnormal findings. It is also done by comparing appearance of symmetric body parts. Palpation is the use of hands to touch and feel for texture, temperature, moisture, and strength of pulse, size, and also the shape. Percussion involves tapping body parts to produce sound waves and these sound waves were used to assess underlying structures. The last technique is auscultation. Auscultation requires the use of stethoscope to listen to heart sounds, movement of blood, bowel movement, and/or movement of air through the respiratory tract. (Kozier et.al., 2011) [1].

Physical health assessment is important to obtain baseline data from the patient. It is also to confirm data obtained in the nursing history and these data will help establish nursing diagnoses and plan of care. It is also used to identify areas for health promotion and disease prevention (Kozier et.al., 2011) [1].

Physical health assessment is part of the job of the physician but is also a part of the nurse's job. Nurses are already expected that they should perform physical health assessment to their patient. Throughout the entire history of the profession, from Florence Nightingale to the present, nurses have been the ones to carry out the physical health assessment of patients, gathering basic data on blood pressure, weight and temperature. Nurses are the ones who examine patients' bodies to make sure there are no bedsores

or bruises (West, 2006) [3]. The literature shows that in practice, most nurses carry out only partial physical health assessment according to the needs of the specific patient, the nurse's own knowledge and sense of self-confidence in carrying out the assessment (Secrest et.al., 2005) [4].

The increasing acuteness of care and developing technologies present new opportunities and challenges for the nursing profession. Nurses are already doing skills that were once done by doctors. One such skill is physical health assessment. Traditionally viewed as part of the doctor's role, physical health assessment has not routinely been taught in nurse training. With the advancement of nursing roles, it has been argued that physical health assessment has become a key nursing skill (West, 2006) [3].

Nurses deliver holistic care, based on assessment. This assessment is incomplete, if a detailed physical health assessment is omitted and, as a consequence, care is delivered in the absence of an appreciation of the impact of pathophysiological adaptations. This article argues that the ability to physically assess the patient in a principled and systematic fashion, in conjunction with routine health assessment, is a necessary skill for the modern nursing professional working in critical care. It is further argued that, within the current climate of advancing nursing practice, the acquisition of this skill is important for all nurses, to improve patient care, and not to replace the skills of the doctor (West, 2006) [3].

In developed countries such as the United States and Great Britain, the use of technology to assess and diagnose a patient's health status is often done. In developing countries which include Philippines, however, the lack of available technology, replacement parts, and ability to maintain the machinery is severely limited. More often than not, diagnosis and consequent treatment are decided through physical health assessment findings alone. It is therefore imperative that critical care nurses in developing countries acquire and utilize good physical health assessment skills to enhance quality nursing care (Goodfellow, 1997) [5].

A research entitled "The use of physical assessment skills by registered nurses in Australia: Issues for nursing education" conducted in Queensland, Australia shows that registered nurses used only 34% of their skill in physical assessment routinely. (Birks et.al., 2012) [6] Also, results reinforce evidence found in the literature that many of the skills taught to nurses are either not used at all (35.5%) or are used rarely (31%).

One of the goals of Benguet State University is to provide quality nursing care. In order to achieve this goal, one is required to have a good skill in physical health assessment. According to White (2003) [7], determining the problem is the key to nursing process and this problem recognition is called the assessment phase. The nurse should perform a complete and holistic physical health assessment of every patient's needs, regardless of the reason for the encounter. Insufficient or incorrect assessment could lead to incorrect nursing diagnoses, which could lead to incorrect nursing diagnoses, inappropriate planning, implementation and evaluation. Therefore, physical health assessment is vital to nursing process and used as a basis for all other phases.

Attribution theory was used by the researcher as a guide in the study. Attribution theory tries to explain the world and to determine the cause of an event or behavior. In order to determine the cause, a three-stage process underlies an attribution. First, a behavior must be observed. Second, behavior must be determined to be intentional. Lastly, a behavior attributed to internal or external cause (Weiner, 1935) [8].

In the ward, some student nurses are not doing their assessment. Hence, this study was conducted in order to determine the:

a. compliance of Benguet State University student nurses in performing physical health assessment,
b. difference in the compliance of student nurses in performing physical health assessment when grouped according to year level, and
c. area of assessment with the highest compliance of student nurses when their previous area of duty was considered.

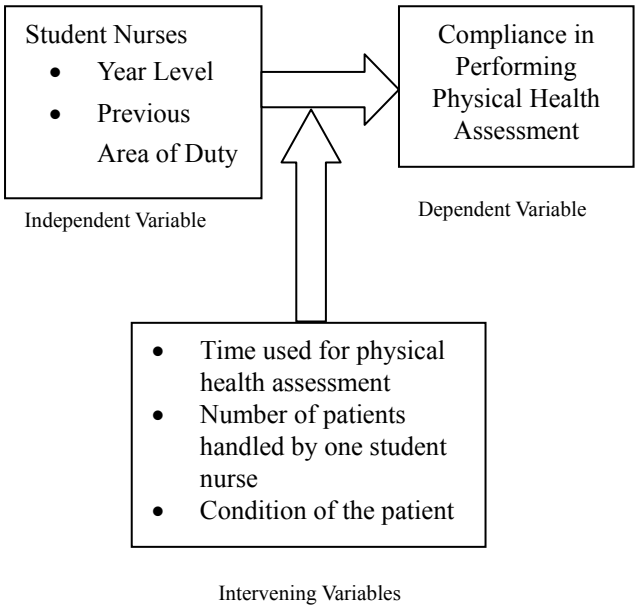

Figure 1. Paradigm of the Study

The paradigm of the study is composed of the independent, dependent and intervening variables. The independent variables consisted of student nurses that were directly being studied. The dependent variables consisted of the possible aspects that were affected by the independent variable. The dependent variable in this study is the compliance in performing physical health assessment. On the other hand, the intervening variables are variables that work between the dependent and independent variable thus maybe affecting both. The intervening variables consisted of the time used in performing health assessment, the number of patients handled by one student nurse and the patients theirselves. For instance, if the patient is not cooperative and the student

nurse is assigned to 3 or more patients, the student nurse will not have enough time to do physical health assessment.

The results that were gained from this study may provide essential and useful information for clinical instructors in identifying students' needs, facilitating them in their learning both in school and clinical setting, and planning effective interventions and strategies to teach physical health assessment or to enhance their knowledge more in physical health assessment. To the first year and second year student nurses, this study can help them in identifying what are the common physical health assessment methods that are not done.

2. Methodology

The study used the Survey Research Design to collect, record, analyze and interpret data. Total enumeration was used with 67 third year and 74 fourth year students enrolled in the second semester of academic year 2014-2015 in Benguet State University-College of Nursing. First year and second year students were excluded from the respondents because they still have limited exposure in the clinical area.

In order to gather data, a questionnaire was used. The questionnaire was based from books, unpublished thesis and previous research outputs. It was also divided into two parts. The first part includes the letter to the respondents requesting them to participate in answering the questions honestly. The second part of the questionnaire includes the demographic data and the questions. The questionnaire was distributed to the respondents. The respondents' answers were assured of confidentiality. All answered questionnaires were collected and the data were collated, tabulated and were subjected for statistical analysis.

Data analysis methods that were used include frequency counts, weighted mean, and T-test. The responses of the participants were tabulated accordingly in the four cell alternative responses. From these data, the weighted mean of the responses were computed. The mean was used to determine the average population of respondents belonging to the different levels and most recent ward they had their duty. T-test was used to measure the compliance in performing physical health assessment of the third and fourth year student nurses.

3. Results and Discussion

This chapter deals with the presentation, analysis, and interpretation of the results of the study.

The data presented were based on the answers of the 141 respondents who are third year and fourth year student nurses of Benguet State University. This study looked into the compliance of physical health assessment of student nurses. It also dealt with the differences in compliance of physical health assessment according to year level, including the area of assessment with the highest compliance of student nurses when their previous area of duty is considered.

3.1. Compliance of Student Nurses in Performing Physical Health Assessment

Table 1. Compliance of Student Nurses in Performing Physical Health Assessment

Actions	WM	DE
Assembling assessment tools and equipment and bringing to the patient's room/unit.	3.58	VH
Wash hands/put on gloves.	3.51	VH
Explaining procedure.	3.58	VH
Providing privacy.	3.70	VH
Positioning the patient.	3.73	VH
Assessing the Skin	3.26	VH
Assessing the Hair	2.94	H
Assessing the Nails	3.06	H
Assessing the Skull and Face	3.03	H
Assessing the Eye Structures and Visual Acuity	2.93	H
Assessing the Ears and Hearing	2.87	H
Assessing the Nose and Sinuses	2.79	H
Assessing the Mouth and Oropharynx	2.78	H
Assessing the Neck	2.85	H
Assessing the Thorax and Lungs	2.99	H
Assessing the Heart and Central Vessels	2.88	H
Assessing the Peripheral Vascular System	2.83	H
Assessing the Breast and Axilla	2.70	H
Assessing the Abdomen	3.15	H
Assessing the Musculoskeletal System	2.80	H
Assessing the Neurological System	2.76	H
Assessing the Male/Female Genitals and Inguinal Area	2.51	H
Assessing the Rectum and Anus	2.35	L
Documenting the data assessed	3.68	VH
Overall:	3.05	H

Legend:
WM: Weighted Mean
DE: Descriptive Equivalent

3.25-4.00: Very High (VH)
2.50-3.24: High (H)
1.75-2.49: Low (L)
1.00-1.74: Very Low (VL)

Table 1 shows the compliance of student nurses in performing physical health assessment. Student nurses have a very high compliance in 29.17% of the actions while student nurses have a high compliance in 66.66% of the actions. Student nurses have a low compliance on one action, which is assessing the rectum and anus.

The action with the highest weighted mean is positioning the patient which has a weighted mean of 3.73. This means

that student nurses have a very high compliance in positioning the patient before doing their physical health assessment. The patient should be position in the desired position depending on the area to be assessed. Positioning the patient in the right position facilitates the nurse or the physician in assessing. An important goal is to minimize how often the nurse should ask the patient to change position (Bickley, 2013) [9].

The action with the lowest weighted mean is assessing the rectum and anus which has a weighted mean of 2.70. This means that student nurses have a low compliance in assessing the rectum and the anus. Assessing the rectum and the anus has a low compliance by the student nurses perhaps because the patient or even the student nurses are not comfortable. According to Dr. Komaroff (2013) [10], rectal examination is not fun – for the patient also for the physician or the one examining it.

The overall weighted mean which is 3.05 means that the student nurses have a high compliance in performing physical health assessment. Physical examination requires a lot of time for it to be finished. Also, physical health assessment is not the only activity of student nurses in the ward. They also need to give medications to their patients and also to provide care for them. Another reason is that they are experiencing difficulty in performing the different assessment techniques. It was, discovered that the reason the students were having difficulty practicing the palpation technique was because they were experiencing an emotional barrier to having skin-to-skin contact. (Oliveira, 1997) [11] This fear of tactile contact might be related, according to Montagu (1971) [12] to the period of infancy and early childhood. During this phase of human development, the quality and kinds of communication, which the baby experiences set the pattern for the type of emotional and psychomotor responses, the child will be comfortable using throughout childhood and adult life in its contact with others. During this phase, before the baby can talk, communication is primarily through skin contact. That is, Montagu's analysis indicates that students who were having difficulty touching may have also had difficulties in the patterns of touch they experienced as infants 'in their relationships with their parents or caregivers (Oliveira, 1997) [11].

3.2. Compliance of Student Nurses in Performing Physical Health Assessment of Student Nurses in Relationship with Year Level

Table 2 shows the compliance of student nurses in performing physical health assessment according to year level. Third year students have a very high compliance in performing 37.5% of the actions while the fourth years have very high compliance in performing 25% of the actions. Also, third year students have a high compliance in performing 62.5% of the actions where as the fourth years have a high compliance in performing 66.7% of the actions. Moreover, there are no actions that the third year students have a low compliance but the fourth year students have a low compliance in performing 8.3% of the actions.

Table 2. Compliance of Student Nurses in Performing Physical Health Assessment in Relationship with Year Level

Actions	Third Year		Fourth Year	
	WM	DE	WM	DE
Assembling assessment tools and equipment and bringing to the patient's room/unit.	3.79	VH	3.45	VH
Wash hands/put on gloves.	3.52	VH	3.55	VH
Explaining procedure.	3.73	VH	3.49	VH
Providing privacy.	3.73	VH	3.73	VH
Positioning the patient.	3.84	VH	3.68	VH
Assessing the Skin	3.49	VH	3.09	H
Assessing the Hair	3.07	H	2.85	H
Assessing the Nails	3.25	VH	2.93	H
Assessing the Skull and Face	3.21	H	2.91	H
Assessing the Eye Structures and Visual Acuity	3.10	H	2.81	H
Assessing the Ears and Hearing	3.12	H	2.69	H
Assessing the Nose and Sinuses	2.91	H	2.72	H
Assessing the Mouth and Oropharynx	2.87	H	2.74	H
Assessing the Neck	3.03	H	2.73	H
Assessing the Thorax and Lungs	3.16	H	2.86	H
Assessing the Heart and Central Vessels	3.01	H	2.80	H
Assessing the Peripheral Vascular System	3.00	H	2.72	H
Assessing the Breast and Axilla	2.85	H	2.61	H
Assessing the Abdomen	3.37	VH	2.99	H
Assessing the Musculoskeletal System	3.00	H	2.66	H
Assessing the Neurological System	2.93	H	2.65	H
Assessing the Male/Female Genitals and Inguinal Area	2.85	H	2.24	L
Assessing the Rectum and Anus	2.54	H	2.20	L
Documenting the data assessed	3.70	VH	3.72	VH
Overall:	3.21	H	2.95	H
Tc	0.025^{s}			

Legend:
WM: Weighted Mean
DE: Descriptive Equivalent

3.25-4.00: Very High (VH)
2.50-3.24: High (H)
1.75-2.49: Low (L)
1.00-1.74: Very Low (VL)

s: significant
ns: not significant

Based from the responses of the third year student nurses,

the action with the highest mean which is 3.84 is positioning the client while the lowest is assessing the rectum and the anus which has a mean of 2.54. According to the fourth year student nurses, the action with the highest mean is providing privacy which has a mean of 3.73 whereas the lowest mean which is 2.20 is also assessing the rectum and the anus.

The overall weighted mean of the third year student nurses is 3.21 means that they have a high compliance in performing physical health assessment. This is also true for the fourth year student nurses which also have a high compliance in performing their physical health assessment because it has a mean of 2.95. However, the weighted mean of third year students is higher than the weighted mean of fourth year students. This means that third year student nurses have a higher compliance in assessing their patient than the fourth year student nurses. Since fourth year students are more experienced and more knowledgeable, they should have a higher compliance in performing physical health assessment on their patients.

There are significant differences in the compliance of student nurses in performing physical health assessment in relationship with the year level. This means that the compliance in performing physical health assessment by student nurses when grouped according to year level differ from each other.

3.3. Area of Assessment with Highest Compliance of Student Nurses According to Previous Area of Duty

Table 3 shows the area of assessment with highest compliance of student nurses according to previous area of duty. In the surgery ward, student nurses have a very high compliance 37.5% of the actions, high compliance in 58.33% and low compliance in 4.17 of the actions. In the emergency room, student nurses have a very high compliance in 33.34% of the actions and high compliance in 66.66% of the actions. In the medicine ward, student nurses have a very high compliance in 29.17% of the actions and high compliance in 70.83% of the actions. In the pediatric ward, student nurses have a very high compliance in 29.17% of the actions, high compliance in 45.83% of the actions and low compliance in 25% of the actions. Lastly, in the obstetrics and gynecology ward, student nurses have a very high compliance in 29.17% of the actions, high compliance in 66.66% of the actions and low compliance in 4.17% of the actions.

During the student nurses' duty in the surgery ward, the action with the highest mean is documenting the data assessed with a weighted mean of 3.72 while the lowest is assessing the rectum and anus with a weighted mean of 2.38. It means that after assessing the patient, they usually document the data because it is necessary in providing care to the patient especially if it is an abnormal finding. However, they are not usually assessing the rectum and the anus because of being afraid that they will cause uncomfortable feeling to the patient.

In the emergency room, positioning the client has the highest mean which is 3.83 while assessing the male and female genitals and inguinal area has the lowest mean which is 2.53. Positioning a patient is a critical skill for nurses in the emergency room especially if the patient was suspected of a spinal cord injury (Augustine, 2011) [13]. Since it is the emergency ward, assessing the male or female genitals and the inguinal area is not necessary especially if the patient's problem does not focus on that area.

In the medicine area, the action with the highest mean is documenting the data assessed with a mean of 3.76 while the lowest is assessing the anus and rectum with a mean of 2.38. Documentation is always an important thing to do after assessment. Since almost all of the patients in the medicine ward are usually the elderly group, rectal examination should be done. This is because symptoms and disease arise more often in elderly patients. (Henderson, 2014) [14]

The action with the highest mean in the pediatric ward is assembling assessment tools and equipment and bringing to the patient's room or unit which has a mean of 3.86 and the action with lowest mean is assessing the peripheral and vascular system which has a mean of 2.14. Assembling the tools and equipment is necessary in the pediatric ward. Since the patients are children, they usually have a short attention span and if the nurse forgot something and return after getting the necessary equipment, maybe the patient does not like to be assessed anymore.

On the last ward which is obstetrics-gynecologic ward, the action with the highest mean is providing privacy with a mean of 3.81 and the lowest is assessing the rectum and anus with a mean of 2.38. In the obstetrics-gynecologic ward, assessing the genitals is always done by physicians. Therefore, as a student nurses, they should always provide privacy to their patient. Assessing the rectum and the anus is not necessarily done in the obstetrics-gynecologic ward.

The student nurses often do their physical health assessment in the five different previous wards they had their duty on as evidenced by the overall weighted means.

4. Conclusions

The study was conducted in order to determine the compliance of Benguet State University student nurses in performing physical health assessment, the difference in the compliance of student nurses in performing physical health assessment when grouped according to year level, and the area of assessment with the highest compliance of student nurses when their previous area of duty was considered. This study was conducted in Benguet State University- College of Nursing, La Trinidad, Benguet with 141 respondents. The study used a structured questionnaire as a data gathering tool which is divided into 2 parts: the personal profile and questions. The data gathered were studied and analyzed using the weighted mean and t-test.

Table 3. Area of Assessment with Highest Compliance of Student Nurses According to Previous Area of Duty

Actions	Surgery Ward		Emergency Room		Medicine Ward		Pediatrics Ward		Obstetrics-Gynecology Ward	
	WM	DE	WM	DE	WM	DE	WM	DE	WM	DE
Assembling assessment tools and equipment and bringing to the patient's room/unit.	3.63	VH	3.53	VH	3.52	VH	3.86	VH	3.69	VH
Wash hands/put on gloves.	3.56	VH	3.58	VH	3.34	VH	3.36	VH	3.77	VH
Explaining procedure.	3.56	VH	3.43	VH	3.66	VH	3.57	VH	3.65	VH
Providing privacy.	3.69	VH	3.78	VH	3.62	VH	3.79	VH	3.81	VH
Positioning the patient.	3.69	VH	3.83	VH	3.72	VH	3.79	VH	3.73	VH
Assessing the Skin	3.28	VH	3.33	VH	3.38	VH	3.29	VH	3.12	VH
Assessing the Hair	2.97	VH	2.98	H	3.00	H	2.79	H	2.96	H
Assessing the Nails	3.00	H	3.18	H	3.24	H	2.79	H	3.04	H
Assessing the Skull and Face	3.19	H	3.13	H	3.17	H	2.57	H	2.88	H
Assessing the Eye Structures and Visual Acuity	3.03	H	2.93	H	3.17	H	2.36	H	2.96	H
Assessing the Ears and Hearing	3.06	H	2.95	H	3.03	H	2.29	H	2.77	H
Assessing the Nose and Sinuses	2.94	H	2.85	H	2.86	H	2.43	H	2.73	H
Assessing the Mouth and Oropharynx	3.00	H	2.78	H	2.83	H	2.36	H	2.81	H
Assessing the Neck	3.03	H	2.90	H	3.00	H	2.29	H	2.81	H
Assessing the Thorax and Lungs	3.22	H	2.98	H	3.07	H	2.64	H	2.92	H
Assessing the Heart and Central Vessels	3.06	H	2.90	H	2.93	H	2.50	H	2.88	H
Assessing the Peripheral Vascular System	3.06	H	2.83	H	2.97	H	2.14	L	2.88	H
Assessing the Breast and Axilla	2.91	H	2.63	H	2.76	H	2.43	L	2.77	H
Assessing the Abdomen	3.25	VH	3.35	VH	3.21	H	2.79	H	2.96	H
Assessing the Musculoskeletal System	2.97	H	2.75	H	2.97	H	2.36	L	2.85	H
Assessing the Neurological System	2.88	H	2.83	H	2.86	H	2.36	L	2.73	H
Assessing the Male/Female Genitals and Inguinal Area	2.59	H	2.53	H	2.62	H	2.29	L	2.50	H
Assessing the Rectum and Anus	2.38	S	2.95	H	2.38	H	2.29	L	2.38	L
Documenting the data assessed	3.72	VH	3.70	VH	3.76	VH	3.57	VH	3.73	VH
Overall:	3.15	H	3.11	H	3.13	H	2.79	H	3.06	H

Legend:
WM: Weighted Mean
DE: Descriptive Equivalent

3.25-4.00: Very High (VH)
2.50-3.24: High (H)
1.75-2.49: Low (L)
1.00-1.74: Very Low (VL)

s: significant
ns: not significant

Findings revealed that student nurses have a high compliance in performing physical health assessment in the hospitals. Also, there are significant differences in the compliance in performing physical health assessment by student nurses in the hospitals. This means that the compliance in performing physical health assessment by

student nurses is different per year level. In addition, the area of assessment with the highest compliance of student nurses when their previous area in considered is positioning the patient which was done in the obstetrics-gynecology ward.

Based from the findings, recommendations are formulated. It is recommended that student nurses should assess their patient well and they should follow the right procedures of assessment. This will be beneficial to the patient and also to the student as well. Also, it is recommended that clinical instructors should see to it that students will perform physical assessment. As for further studies, it is suggested that other wards will be included. Furthermore, it is suggested that a more detailed questionnaire will be used in order to assess the performance of physical health assessment among student nurses comprehensively.

REFERENCES

[1] Kozier, B., et.al. Kozier & Erb's Fundamentals of Nursing (9th ed.). Prentice Hall, 2011.

[2] Ford, P. et.al. Nursing assessment and older people. London: Royal College of Nursing, 2004.

[3] West, S. L. Physical assessment: Whose role is it anyway? Nursing in Critical Care, 11(4), 2006, p. 161—167.

[4] Secrest, JA., et.al. Physical assessment skills: A descriptive study of what is taught and what is practiced, 2005

[5] Goodfellow, L. Physical assessment: a vital nursing tool in both developing and developed countries. Nursing in Critical Care, 1997, 20(2):6-8

[6] Birks, M., et al. The use of physical assessment skills by registered nurses in Australia: Issues for nursing education. Collegian, 2012

[7] White, Lois. Basic Nursing: Foundation of Skills and Concepts. New York, 2003, Pp. 716-717

[8] Weiner, B. 1957. Attribution Theory

[9] Bickley, L. Bates' Guide to Physical Examination and History Taking (11th ed.). Lippincott Williams and Wilkins, 2013

[10] Komaroff. (2013). Rectal exam is uncomfortable but medically useful. [Online] Available: http://dailyjournalonline.com/news/opinion/advice/dr-komaroff/rectal-exam-is-uncomfortable-but-medically-useful/article_9f5f997e-1954-11e3-8b79-001a4bcf887a.html

[11] Oliveira, E.R. 1997. Teaching Nurses to Conduct the Physical Examination: Becoming Mediators of the Divine Touch.

[12] Montagu, Ashey. 1971. Touching. The human significance of the skin. New York. P.405.

[13] Augustine, J. 2011. Patient positioning is a critical skill for EMS providers. [Online] Available: http://www.ems1.com/ems-products/patient-handling/articles/1112498-Patient-positioning-is-a-critical-skill-for-EMS-providers/

[14] Henderson, R. 2014. Rectal Examination. [Online] Available: http://www.patient.co.uk/doctor/rectal-examination