

Knowledge of Nurses Regarding Respiratory Physical Assessment in Tertiary Hospital Lahore, Pakistan

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ABSTRACT

In health care setting nursing practices depends on knowledge. Knowledgeable nurses express their expertise in critical care units. Specialty in critical care units required respiratory knowledge regarding physical assessment. Furthermore nursing profession has been viewed central point for client care. The rapid changes in healthcare setting that increased demand of trained, experienced nurses in health care setting. The knowledge about anatomy and physiology regarding respiratory assessment necessary in the field of auscultating expertise like respiratory system that gives the chance of early diagnosis, assess the clients need and client health problem to implement the nursing process.

Study Design: Descriptive Cross Sectional Study design was applied.

Settings: Data was collected through convenient sampling method from ICU department of tertiary Hospital Lahore.

Study Participants: 36 female nurses within the age range 24 to 39 years were included in this research.

Results: The knowledge of ICU Nurses regarding anatomy of respiratory above 50% but knowledge regarding physical assessment less than 50%. Furthermore less knowledge among nurses about respiratory physical assessment in clinical practices.

Keywords: Physical Assessment, Nurses application, Respiratory Knowledge, Practices

INTRODUCTION

In health care setting nursing practices depends on knowledge. Knowledgeable nurses express their expertise in critical care units. Specialty in critical care units required respiratory knowledge regarding physical assessment. Furthermore nursing profession has been viewed central point for client care (Borji et al., 2018). Nursing profession target on the care of client as well as their family members and society. Nurses should use a comprehensive and scientific based approach to provide high quality clinical nursing care, which involves determining a patient's physiological, psychological, and sociological status, as well as preparing, administering, and reviewing nursing care (Tuzer, Dinc, & Elcin, 2016). Because of rapid changes in healthcare setting that increased demand of trained, experienced nurses in health care setting. The healthcare system requires to establish new and revised competencies for patient evaluation and betterment of quality care (Anderson, Nix, Norman, & McPike, 2014). The knowledge of nurses regarding assessment is an initial step in clinical practices and is renowned as an integral component of nursing application. Furthermore perfect assessment can lead to the best nursing practice and the patients can receive a healthier recovery. The nurse can provide excellent quality of care with continuings of education regarding physical assessment techniques (Tuzer et al., 2016). The knowledge about anatomy and physiology regarding respiratory assessment necessary in the field of auscultating expertise like respiratory system that gives the chance of early diagnosis, assess the clients need and client health problem to implement the nursing process (Elder, Japp, & Verghese, 2016). ICUs are the central treatment unit of critically ill patient in Hospital setting. Due to critical condition of the patient urgent need

for expert nurses having knowledge regarding respiratory assessment (Esfandani, Aliyari, Pishgooei, & Ebadi, 2017). The detection of normal and abnormal finding of respiratory assessment is based on knowledge and expertise in nursing practices. The educational program on knowledge and practices on respiratory assessment provide convenient in routine assessment of clients (Airth-Kindree & Vandebark, 2014). The anatomy and physiology of respiratory system provide the further knowledge about the physiology of breathing and circulation that is important to understand the physical assessment techniques including inspection of chest wall, palpation of chest wall, percussion and auscultation of chest wall (Proctor & Rickards, 2020). The essential part of physical assessment is the auscultation skills of respiratory assessment that is helpful in patient history and diagnosis (Proctor & Rickards, 2020).

METHODOLOGY

Study Design: The Study design was applied descriptive Cross Sectional.

Settings: Research data was collected through convenient sampling method from ICU department of tertiary Hospital Lahore.

Study Participants: 36 female nurses within the age range 24 to 39 years were included.

Study Instrument: The researcher was used adopted questionnaire to assess ICU Nurses knowledge regarding respiratory physical assessment (Mitoma & Yamauchi, 2018).

Data Analysis: Data analysis was evaluated by using Statistical Package for Social Sciences version 29.0. Descriptive statistics was analyzed through frequencies and percentage.

Ethical Considerations: The consent was taken from all study participants in written form. Data collection and participant information remained confidential throughout the study.

RESULTS

Analysis of this study consists demography analysis and respiratory knowledge analysis. Demography analysis that explain 7 demography questions. Respiratory knowledge questionnaire that explains 17 questions.

In table 1 data was collected from female ICU Nurses only. In this research total study participants were contributed n=36 (100%) from tertiary Hospital Lahore. The range of participant's age was between 24 to 39 years and mostly participants contributed in this research with in the age group range was 24-27 year n=13 (36.1%), after this age group participants sample was based on 28-31 years n=11 (30.6%), after that age group participants 32-35 years n=9 (25%), less participants were contributed with in the age group 36-39 year n=3 (8.3%). Professional education of participants included in this study Diploma nursing n=31 (86.1%), post RN n=4 (11.1%) and Generic BSN n=1 (2.8%). Mother language of participants were Urdu n=23 (63.9%) and Punjabi n=13 (36.1%). Mostly participants were married n=21 (58.3%) and unmarried n=15 (41.7%). Residential Area of participants were urban n=26 (72.2%) and rural n=10 (27.8%). Previous results division of participants were 1st division n=30 (83.3%) and 2nd division n=6 (16.7%). Previous physical assessment exposure of participants were yes n=28 (77.8%) and no n=8 (22.2%).

Table 1: Demographic Profile of Participants

		Frequency	Percentage
Age	24-27	13	36.1%
	28-31	11	30.6%
	32-35	9	25.0%
	36-39	3	8.3%
Professional Education	Generic BSN	1	2.8%
	Diploma Nursing	31	86.1%
	Post Register Nurses	4	11.1%
What is your mother language	English	0	0%
	Urdu	23	63.9%
	Punjabi	13	36.1%
	Other	0	0%
Marital Status	Unmarried	15	41.7%
	Married	21	58.3%
	Widow	0	0%
	Divorced	0	0%
Residential Area	Rural	10	27.8%
	Urban	26	72.2%
Previous Result Division	1 st	30	83.3%
	2 nd	6	16.7%
	3 rd	0	0%
Previous physical assessment exposure	Yes	28	77.8%
	No	8	22.2%

Table 2: Respiratory Knowledge of Participants

S/N	Questions	Options	f (%)
1	Gas exchange takes place in the	Pharynx	0 (0%)
		Larynx	2 (5.6%)
		Alveoli	33 (91.7%)
		Trachea	1 (2.8%)
2	Area between the lungs is known as	Thoracic cage	9 (25%)
		Mediastinum	14 (38.9%)
		Pleura	12 (33.3%)
		Hilum	1 (2.8%)
3	Involuntary breathing is	Pulmonary arterioles	7 (19.4%)

	controlled by	Bronchioles	15 (41.7)
		Alveolar capillary network	2 (5.6%)
		Neurons located in the medulla and pons	12 (33.3)
4	Sternal angle is also known as	Suprasternal notch	13 (36.1%)
		Xiphoid process	10 (27.8%)
		Scapula	2 (5.6%)
		Angle of Louis	11 (30.6%)
5	Which Soft and low-pitched breath sounds normally heard over most of both lungs are	Broncho vesicular	14 (38.9%)
		Bronchial	12 (33.3%)
		Tracheal	1 (2.8%)
		Vesicular	9 (25%)
6	High-pitched breath sounds are best heard by	Diaphragm of the stethoscope	12 (33.3%)
		Bell of the stethoscope	13 (36.1%)
		Both the bell and the diaphragm of the stethoscope	9 (25%)
		A stethoscope with tubing at least 20" (50 cm) in length	2 (5.6%)
7	Louder, clearer voice sounds during auscultation of the lungs are	Adventitious sounds	16 (44.4%)
		Egophony	3 (8.3%)
		Bronchophony	13 (36.1%)
		Fremitus	4 (11.1%)
8	Continuous breath sounds are relatively high pitched with a hissing or shrill quality?	Coarse crackles	3 (8.3%)
		Rhonchi	9 (25%)
		Wheezes	18 (50%)
		Fine crackles	6 (16.7%)
9	Normal breath sounds heard over most of both lungs are described as	Loud	3 (8.3%)
		Intermediate	17 (47.2%)
		Very loud	2 (5.6%)
		Soft	14 (38.9%)
10	Bronchial breath sounds are normally heard	Over most of both lungs	26 (72.2%)
		Between the scapulae	6 (16.7%)
		Over the manubrium	3 (8.3%)
		Over the trachea in the neck	1 (2.8%)
11	Which is correct about vesicular breath sounds?	Inspiratory sounds last longer than expiratory ones	9 (25%)
		Inspiratory and expiratory sounds are about equal	17 (47.2%)
		Expiratory sounds last longer than inspiratory ones	7 (19.4%)
		Inspiratory and expiratory sounds are indistinguishable	3 (8.3%)
12	Which percussion note would hear over the airless area in atelectasis?	Dull	16 (44.4%)
		Resonant	5 (13.9%)
		Flat	11 (30.6%)
		Hyper resonant	4 (11.1%)
13	Although the exact cause is unknown, pulmonary fibrosis has most commonly been associated with	Asthma	10 (27.8%)
		Cigarette smoking	20 (55.6%)
		Prolonged shallow breathing	4 (11.1%)
		Immobility	2 (5.6%)
14	Wheezes most commonly suggest	Secretions in large airways	20 (55.6%)
		Abnormal lung tissue	2 (5.6%)
		Airless lung areas	0 (0%)
		Narrowed airways	14 (38.9%)
15	Which indicates a partial obstruction of the larynx or trachea and demands immediate attention?	Rhonchi	5 (13.9%)
		Pleural rub	10 (27.8%)
		Stridor	15 (41.7%)
		Mediastinal crunch	6 (16.7%)
16	Which area involved in a patient with lobar pneumonia?	Vesicular breath sounds	13 (36.1%)
		Egophony	3 (8.3%)
		Decreased tactile fremitus	9 (25%)
		Muffled and indistinct transmitted voice sounds	11 (30.6%)
17	Which Patient Findings with pneumothorax include	Dull percussion note	14 (38.9%)
		Decreased to absent breath sounds	12 (33.3%)
		Increased tactile fremitus	4 (11.1%)
		Late inspiratory crackles	6 (16.7%)

In table 2 finding about respiratory knowledge of nurses regarding physical assessment of respiratory system, most of participants were given accurate answer to 1st question related to the anatomy of respiratory system that was above 50%: Alveoli n=33 (91.7%). Less than 50% knowledge of participants to 2nd question: Mediastinum n=14 (38.9%). Less than 50% knowledge of participants to 3rd question: Neurons located in the medulla and pons n=12 (33.3%). Less than 50% knowledge of participants to

4th question: Angle of Louis n=11 (30.6%). Less than 50% knowledge of participants to 5th question: Vesicular n=9 (25%). Less than 50% knowledge of participants to 6th question: the diaphragm of the stethoscope n=12 (33.3%). Less than 50% knowledge of participants to 7th question: Bronchophony n=13 (36.1%). Participants respond 50% knowledge to 8th question that was related to the anatomy of respiratory system: Wheezes n=18 (50%). Less than 50% knowledge of participants to 9th question: Soft n=14 (38.9%). Less than 50% knowledge of participants to 10th question: Over the manubrium n=3 (8.3%). Less than 50% knowledge of participants to 11th question: Inspiratory sounds last longer than expiratory ones n=9 (25%). Less than 50% knowledge of participants to 12th question: Dull n=16 (44.4%). Above 50% knowledge of participants to 13th question: Cigarette smoking n=20 (55.6%). Less than 50% knowledge of participants to 14th question: Narrowed airways n=14 (38.9%). Less than 50% knowledge of participants to 15th question: Pleural rub n=10 (27.8%). Less than 50% knowledge of participants to 16th question: Egophony n=3 (8.3%). Less than 50% knowledge of participants to 17th question: Decreased to absent breath sounds n=12 (33.3%).

DISCUSSION

A study was conducted by Italian nurses. Cicolini G. et al. reveals that 60% of respiratory assessment including auscultation were not performed in their clinical setting even they had prepared it in their educational training (Birks, Cant, James, Chung, & Davis, 2013). Same as in this research ICU nurses mostly response to anatomy of respiratory questions rather than physical assessment of respiratory questions. The knowledge of ICU Nurses regarding anatomy of respiratory above 50% but knowledge regarding physical assessment less than 50%. Furthermore less knowledge among nurses about respiratory physical assessment in clinical practices.

CONCLUSION

Final analysis of this research the ICU nurses have knowledge about anatomy of respiratory system but never know how to do physical assessment of respiratory system in clinical setting.

Limitation: Study was conducted only one tertiary Hospital.

Recommendations: Physical examination is an important aspect of a physician's duty, but it is also an important component of a nurse's duty (Liyew, Dejen Tilahun, & Kassew, 2020). This is the extensive demand of continuous educational program in clinical setting for improvement of Nurses knowledge with practices regarding physical examination of respiratory assessment.

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