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Original Article

Effectiveness of Planned Teaching Programme in Knowledge Gain Regarding Anthropometric Measurement among B.Sc. Nursing 3rd Year Students

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Abstract

The study was conductedto assess the effectiveness of planned teaching programme in terms of knowledge gain regarding anthropometric measurement among B.Sc. Nursing 3rd Year Students at Columbia College of Nursing, Raipur (C.G.). An evaluative approach and a pre-experimental one group pre-test and post- test research design were adopted for the study. Data was collected using purposive sampling technique among 40 B.Sc. Nursing 3rd Year Students. Self-structured questionnaire were used to assess the effectiveness of structured teaching programme regarding anthropometric measurement in terms of knowledge gain. Analysis and interpretation were done according to the objectives of the study. The data was analyzed by calculating percentage, mean and mean percentage, standard deviation, T-test and bar diagram was used to depict the finding. Findings depict that mean post-test knowledge score is 82.8% and pre-test knowledge score is 23.1%. The dispersion in the pre-test score (SD=3.3) is more than post-test score (0.5). Hence the difference of pre-test and post-test in overall percent knowledge gain is 59.7%. Therefore, it is not benefitted of structured teaching programme. Hence the difference between pre-test and post-test knowledge score was statically tested by applying student's paired T-test and it is found to be statistically significant p≥0.9. The study shows that majority of the subjects were having good and excellent knowledge after structured teaching programme.

Keywords: Knowledge; Planned Teaching Programme; Anthropometric Measurement.

Introduction

Back ground of study:

Anthropometry is derived from Greek word *anthros* means "*Human*" and *metron* means "*Measure*" refers to the measurement of the human individual [1]. An early tool of physical anthropology. It has been used for identification, physical variation, in paleoanthropology and in various attempts [2]. To correlate physical racial and psychological traits. Anthropometry involves the systematic measurement of the physical properties of the human body, primarily dimensional descriptor of body size and shape.Some common anthropometry measurements include [3];

1. Height or length.
2. Weight.
3. Mid-upper arm circumference (MUAC)
4. Demi-span or arm span.
5. Knee height.
6. Sitting height.
7. Skin fold thickness.
8. Head circumference.

Anthropometric measurement are useful in many fields for e.g.- Athletes understand that body size and composition are important factor in sports performance sports coaches can also use these measurement to monitor an athlete's body to ensure they stay in peak physical shape. Health care professionals on body measurement to evaluate a patient's overall health. For e.g. - body mass index or (BMI), is a measurement of a person's weight-to-weight ratio. Health care providers insure companies and government agencies use BMI to determine if a person is underweight, overweight or obese. A BMI of 30 or greater indicates obesity.

Because obesity is linked to chronic disease like heart disease. Diabetes and certain cancers, knowing this anthropometric measurement can be a lifesaver [4].

Need of study:

Studied the inorganic crystal strxucture database with the focus on growth rate, distribution of publication. Productivity of authors, and multiple authorship patterns. Tested the validity of a questionnaire to measure frequency of headaches related to the neck. A secondary goal was to test the reliability of field measurement of associated cervical spine anthropometric and muscle performance factor. The anthropometric and muscle performance measurement were reliable but slight improvement on relist suggest the needs for multiple measurement. Anthropometric evolution performed by trained health worker in inexpensive, non-invasive on the different components of body structure-especially muscular and fat component, and can assist in assessing the nutritional status of a population. Anthropometric measure are highly reliable for determining the nutritional status when compared with more sophisticated methodologies, dilution techniques measuring k-40 by whole body counting and electronic bio impedance [5].

ProblemStatement:

"A Study to Assess the Effectiveness of Planned Teaching Programme in Terms of Knowledge Gain Regarding Anthropometric Measurement among B.Sc. Nursing 3rd Year Students at Columbia College of Nursing, Raipur (C.G.)"

Objectives of the Study:

1. To assess pre-test knowledge regarding anthropometry measurement among B.Sc. nursing 3rd year student of Columbia college of nursing, Raipur (C.G.).
2. To assess post-test knowledge regarding anthropometry measurement among B.Sc. nursing 3rd year student of Columbia college of nursing, Raipur (C.G.).
3. To compare pre-test and post-test knowledge regarding anthropometry measurement among B.Sc. nursing 3rd year students of Columbia college of nursing, Raipur (C.G.).

Materials and Methods

Research approach: Evaluative approach was adopted for this study.

Research design: Pre-experimental one group pre-test and post-test research design was found to be most appropriate for this study.

Research setting: The present study was undertaken in Columbia College of Nursing, Raipur, (C.G.) due to the geographical proximity, feasibility of the study and availability of sample.

Population:

Target population: The target for the present study comprised of B.Sc. Nursing students of Columbia College of Nursing, Raipur, (C.G.)

Sample: In this study the sample consisted of B.Sc. Nursing 3rd year students of Columbia College of Nursing, Raipur, (C.G.)

Sample size: The sample size of the study is 40 B.Sc. Nursing 3rd year students who fulfill the exclusion and inclusion criteria.

Sampling technique: Purposive sampling technique

Inclusion criteria:

- Will belong to B.Sc. Nursing 3rd year students.
- Willing to participate in the study.
- Will be available at the time of data collection.
- Will understand Hindi and English.

Exclusion criteria:

- Who will not belong to medical profession.
- Who are not willing to participate.
- Who are not present at the time of study.

Method of data collection

Development of tool:

The tool was developed by using the following steps

- Reviewing the related literature
- Past knowledge experience of the investigator
- The opinion of the subject expert in nursing

Description of tools:

"The structured teaching programme technique of data collection comprised of two parts."

- *Part 1:* Consist of socio demographic variable.
- *Part 2:* Self-structured questionnaire prepared as 30 multiple choice questionfor assessment of knowledge.

Criteria Measurement:

Each correct response caries one (1) mark incorrect response carries zero (0) mark knowledge score is categorized.

Maximum Score-30

Minimum Score-1

Reliability:

"Reliability refers to the accuracy rate in measurement device."

In qualitative research the stability of a measuring instrument over time through Karl's parsons co-efficient formulas.Reliability computed by Karl's Pearson co-efficient correction is formula and it was collected by spearman's brown prophecy formula to the reliability of the tool (0.9) for the present study.

Data collection procedure:

A formal written permission is taken from principal of Columbia College of Nursing, Raipur (C.G.) to conduct main study, data collection from B.Sc. Nursing 3rd year student of Columbia college of Nursing, Raipur (C.G.) The actual data is collected on date-27/09/2017. The purpose of the study was explained in orderly through purposive sampling technique to 40 samples. Contributing to anthropometric measurement through the structural teaching programme on B.Sc. Nursing 3rd year student in Columbia college of Nursing, Raipur (C.G.)

Results

The data collected were organized and presented under the following sections

Table 1: To Assess Pre Test And Post Test Score RegargdingAnthropometry measurement among B.Sc nursing 3rd year students

S.N.	Item/Knowledge	Pre Test		Post Test	
		N	%	N	%
1	The period of life had the greatest variation in humanh growth and maturation.	23	57.5%	27	82.5%
2.	A common anthropometry measure for infant is-	19	47.5%	31	77.3%
3.	The anthropometry measurement measure of head circumference estimate-	08	36%	36	90%
4.	Which of the following is the most frequently used anthropometric measure to estimate body mass	14	57.5%	27	67.5%
5.	The gold standard for measuring body composition is.	12	30%	36	90%
6.	The following are the principles in the application of anthropometric data except.	11	27.5%	32	80%
7.	Which of the following would not be included in anthropometric measurement?	12	30%	33	82.5%
8.	Biological anthropology may test be defined as.	13	32.5%	33	82.5%
9.	Anthropometry is the name for	08	20%	33	82.5%
10.	Anthropometry is derived from which word ?	09	22.5%	35	87.5%
11.	Anthropometry measurement used for	11	32.5%	32	80%
12.	Anthropometry measurement include measurement ?	08	20%	37	92.5%
13.	What is the age of infant?	05	12.5%	37	92.5%
14.	What is normal weight of the infant.	05	12.5%	32	80%
15.	What is the normal height of infant?	05	12.5%	35	87.5%
16.	What is the normal mid upper arm circumference of the infant?	03	7.5%	33	82.5%
17.	What is the normal head circumference of the infant?	10	25%	29	72.5%
18.	Anthropometry is the most common technique used to assess the presence & degree of-	13	40%	31	77.3%
19.	Scientific study of the measurement & proportions of the human body.	07	17.5%	36	90%
20.	What is the article not used in anthropometric measurement.	12	30%	34	80%
21.	Infantometer are used for measure?	14	35%	34	85%
22.	Weight is one of the best criteria for assessment	07	17.5%	27	67.5%
23.	Which among the following could benefit from anthropometric measurement?	11	27.5%	34	85%
24.	This is the measurement of a person weight to height ratio	11	27.5%	34	85%
25	Nutrition assessment can be done using the method these refer to the following	10	25%	34	85%
26.	What are the indicators in height.	09	22.5%	32	80%
27.	Weighting machine used for ?	06	15%	33	82.5%
28.	Which instrument used for the checking the skin fold thickness?	04	10%	34	85%
29.	Which are the region to check the skin fold thickness.	03	07.5%	33	82.5%
30.	Why we check skin fold thickness?	01	2.5%	36	90%

Section A Findings related to socio-demographic characteristics of subject. It deals with demographic data including age, religion, education status, marital status, dietary pattern, occupation, family income, sources of knowledge and means of transportation.

Percentage analysis was carried for demographic variables and presented in the form of table and graph**.**

As per demographic variables depicts that in age the majority of subject i.e. 22 (55%) belong to 22-24 year, 10 (25%) belong to 20-22 year, 7 (17.5%) belong to 18-20 year and 1 (2.5%) belong to above 24 year.

In relation to education Qualification of subjectdepicts that the majority of subjects i.e. 36 (90%) 12th pass, 4 (10%) graduate and non of them in diploma and post graduate.

In relation to religion of the subject depicts that the majority of subjects i.e. 38 (95%) Hindu, 2 (5%) Christian and non of them were Muslim and sikh.

In relation to residual area depicts that majority of subjects i.e. 21 (52.5%) living in Rural area, 19 (47.5%) in Urban Area and non of them in slum area and hilly area.

In relation to occupation of father depicts that majority of subjects i.e. 14 (35%) were farmers, 10 (25%) government employee, 9 (22.5%) private employee, and 7 (17.5%) own business.

Distribution of subject according tofamily income depicts that 14 (35%) were having above 20,000 Rs. income per month, 11 (27.5%) were having 15,000-20,000 Rs., 8 (20%) were having 5000-10,000 Rs., and 7 (17.5%) were having 10,000-15,000 Rs.

Distribution of subject according to marital status depicts that 39 (97.5%) were Unmarried, 1 (2.5%) were Married and non of them Divorced and Widow.

In relation to dietary system of the subject depicts that 20 (50%) were Vegetarians, and 20 (50%) were Non-Vegetarians

Distribution of subjects according to source of information depicts that 20 (50%) were reading Books, 16 (40%) were having Internet, 2 (5%) were having Television and 2 (5%) were having news-paper.

Table 2: Analysis of overall knowledge score of pre-test and post-test

n= 40

S.no	Knowledge Score Over All Levels of Knowledge	Pre-test		Post-test	
	Over all Knowledge	Frequency	%	Frequency	%
1	Average	36	05%	00	0%
2	Good	04	95%	04	05%
3	Excellent	00	00%	36	95%
	Total	40	100%	40	100%

Depicts that in over all knowledge of subjects i.e. 36 (95%) were having excellent knowledge, 04 (5%) were having good knowledge and non of them in average.

Table 3:-Analysis of Pre-test and Post-test means knowledge score

Minimum/maximum score		mean	Mean%	Gain knowledge
Pre Test	0-30	9.5	23.1%	59.7% Gain score
Post Test	0-30	33.1	82.5%	

Depicts that in minimum socre & maximum score of subjects i.e. 59.7% is a maximum score and 2.8% is minimum score.

Table 4: To Compare Pre-Test and Post-Test Score Regarding Anthropometric Measurement among 3rd Year Student

Knowledge score	Mean	Standard deviation	Student independent T-test
Pre-test	9.5	3.3	0.9
Post-test	33.1	0.5	
Significant at P≤0.05=2.021	T=0.9		

Depicts that in pretest score (SD=3.3) is more than of post-test score (SD=0.5)

Distribution of subjects according to mother's occupation depicts that 2 (5%) were Professionals, 1 (2.5%) were Non-professionals, 2 (5%) were Workers, and 35 (87.5%) were House wife.

Section B Finding related to Pre-test and Post-test knowledge score by using frequency mean and mean percentage

Section C Finding related to compared pre-test and post-test knowledge score in group by using mean, standard deviation, test of significant i.e.t-test.

Hence the difference between pre-test and post-test knowledge score was statistically tested by applying student's paired t-test and it is found to be statistically significant at p≥0.9

Hence, table value is more than calculated value, so alternative hypothesis is accepted.

Discussion

The findings of the study were discussed under the following headings:

Section A: Distribution of the subjects according to socio-demographic variables.

Section B: Finding related to Pre-test and Post-test knowledge score by using frequency mean and mean percentage.

Section C: Finding related to pre-test and post-test knowledge score in group by using mean, standard deviation, test of significant i.e.t-test.

Section A Distribution of subjects according to socio-demographic variables.

- *Distribution of subject according to age*

As per demographic variables depicts that in age the majority of subject i.e. 22 (55%) belong to 22-24 year, 10 (25%) belong to 20-22 year, 7 (17.5%) belong to 18-20 year and 1 (2.5%) belong to above 24 year.

- *Distribution of subjects according to eductaional qualification*

In relation to educational Qualification of subject depicts that the majority of subjects i.e. 36(90%) 12th pass, 4(10%) graduate and non of them in diploma and post graduate.

- *Distribution of the subjects according to religion*

In relation to religion of the subject depicts that the majority of subjects i.e. 38(95%) Hindu, 2(5%) Christian and non of them were Muslim and sikh.

- *Distribution of the subject according to Residualarea*

In relation to residual area depicts that majority of subjects i.e. 21 (52.5%) living in Rural area, 19 (47.5%) in Urban Area and non of them in slum area and hilly area.

- *Distribution of the subject according to father's occupation*

In relation to occupation of father depicts that majority of subjects i.e. 14 (35%) were farmers, 10 (25%) government employee, 9 (22.5%) private employee, and 7 (17.5%) own business.

- *Distribution of the subject according to family monthly income*

Distribution of subject according to family income depicts that 14 (35%) were having above 20,000 Rs. income per month, 11 (27.5%) were having 15,000-20,000 Rs., 8 (20%) were having 5000-10,000 Rs., and 7 (17.5%) were having 10,000-15,000 Rs.

- *Distribution of the subject according to the marital status*

Distribution of subject according to marital status depicts that 39 (97.5%) were Unmarried, 1 (2.5%) were Married and non of them Divorced and Widow.

- *Distribution of the subject according to Dietary system*

In relation to dietary system of the subject depicts that 20 (50%) were Vegetarians, and 20 (50%) were Non-Vegetarians

- *Distribution of the subject according to source of information*

Distribution of subjects according to source of information depicts that 20 (50%) were reading Books, 16 (40%) were having Internet, 2 (5%) were having Television and 2 (5%)were having news-paper.

- *Distribution of the subject according to Mothers occupation*

Distribution of subjects according to mother's occupation depicts that 2 (5%) were Professionals, 1 (2.5%) were Non-professionals, 2 (5%) were

Workers, and 35 (87.5%) were House wife.

Section B: Finding related to pre-test and post-test knowledge score by using frequency mean and mean percentage of knowledge gain.

Depicts that in pre-test mean is (9.5) and mean percentge is (23.1%) and post-test mean is (33.1) and mean percentage (82.5%)**.** And increased level of knowledge by 59%

Section C: Finding related compared pre-test and post-test knowledge score in group by using mean, standard deviation, test of significant i.e. T-test.

Depicts that mean post-test knowledge score 82.8% is apparently higher than the mean test knowledge score 23.1%. The dispersion in pre-test score (SD=3.3) is more than that of post test score (SD=0.5).

Hence the difference between the pre-test and post-test knowledge score was statistically tested by applying student's paired T-test it is found to be statically significant p≥0.9.

Hence, if calculated value is less than table values, so alternated hypothesis is accepted.

Limitations

- The study was limited to sample size 40.
- The study was limited to B.Sc. Nursing 3rd year students of Columbia College of Nursing, Raipur.
- The study was limited to age group (22-24 year).
- The study was limited to one group.
- The self-structured knowledge questionnaire was developed as norm of standard tool and variable.

Recommendation

On the basis of finding of the study, the following recommendations are offered for further research:-

- The study can be replicated on a large sample theory by the finding that can be generalized for large section of the health care facilities to over a large population of health care team.
- A similar study can be carried out by using other teaching strategies i.e. Planned teaching programme.
- A similar study can be conducted in different setting and different target population such as doctor, nursing staff, nursing teachers and paramedical staff.

Conclusion

The study shows that majority of the subjects were having good and excellent knowledge after structured teaching programme. The structured teaching programme facilitates them to update their knowledge regarding anthropometric measurement hence the structured teaching programme was an effective teaching strategy to improve the knowledge of B.Sc. Nursing 3rd year students regarding anthropometric measurement.

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