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Full Length Research Paper

Teaching of Public Health Research and Its Assessment: A Real-World Research Practice

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Abstract

It has been found that issues regarding population health get relatively less consideration by the students with other domains under health sciences. Among nursing students the need for research skill and improvement cannot be discounted. Timely teaching research skills to nursing students will provide opportunities to implement those skills throughout their course period. The aim of this research study was to assess nursing students' research skills through a teaching session of research methodology. Undergraduate students from different batches from institute of nursing, Dow University of Health Sciences, participated in this study. Students were asked to fill out questionnaire prepared for this study regarding public health research skills, after that a teaching session was conducted for the study participants and then same questionnaire was filled again after the session. Out of 90 students majority of the students (77.2%) were those who have never attended a research seminar and most of the students have never participated in a research paper none have they written scientific paper, percentages of such students were 83.7 and 89.1 respectively. There were only 16.3% students who did not feel that undergraduate students cannot plan and conduct research and write scientific paper. Significant difference (p-value < 0.001) was found between pre and post teaching session correct scores. In this research study, we found significant impact on nursing students' research skill through a teaching session as improvement in their research skills was apparent.

Keywords: Public health research**,** Nurses, Evaluation.

INTRODUCTION

Many organizations including World Health Organization recognized the worth of 'nurses' role in a health care paradigm which is shifted from diseases treatment to health prevention and wellness promotion (Thompson and Kohli, 1997; Umlauf, 1998). It has been found in a research study that medical students reflect that issues like health prevention and population health are a matter of common sense, and not as substantial as other domains in the field of health sciences(Régo and Dick, 2005). Though, the first year students usually have a positive attitude towards health promotion and prevention, however, as they progress through schools this approach appears to decline (Bellas et al., 2000; Eggert and Parkinson, 1994; Rosenthal and Ogden, 1998; Wolf et al., 1989). Moreover, many students consider that they are not provided sufficient knowledge when it approaches to primary research skills, because of not giving much credit in their studies (Rosenthal and Ogden, 1998).

Research has profound impact in practical work for nurses but there seems that research is not popular among nurses and nursing students because of giving more preference to their practice. The result of discounting research keeps nurses away from most recent health care approaches. Another factor that lead to lack of confidence in their capability to assess the worth of research they read is poorly taught basic statistical analysis skill (Retsas and Nolan, 1999; El Ansari, 2004).

When teaching research skills, timing is the substantial factor because if research teaching is carried

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out at the beginning of the degree program then this could be helpful to utilize research skill they learnt through their course (El Ansari, 2004). Whereas some researchers have different beliefs regarding the timing of teaching research skills, because students may adopt negative attitude towards research if they are taught research at beginning of the course having no awareness of its importance (Ax and Kincade, 2001). One cannot discount the importance of research therefore, teaching research from the beginning of the degree and guiding students about the research skills throughout the study period is a good approach.

Different researchers have mentioned that nurse students expected to be involved in health promotion far more frequently than their actual experiences demonstrated (Thompson and Kohli, 1997).

The aim of this research study was to assess nursing students' research skills through a teaching session of research methodology. Moreover, nursing students' knowledge and attitude towards research were also analyzed.

METHOD

It's a cross sectional study conducted at Institute of Nursing Dow University of Health Sciences, Karachi, that have both undergraduate and postgraduate programs**.** For this research study a questionnaire, was formatted related to mode of curriculum, research definition, epidemiology, literature review, search engine, sections of scientific research article, research seminars and workshops.

During the year 2012, 90 undergraduate nursing students from different batches were approached and asked to fill out the questionnaire regarding research skill; with their consents of participation. The teaching session took place as a part of research study that continued for two hours. Teaching session was based on public health and research skills. Students were taught about research background, research type, how to start a research and what basic knowledge needs to start a research. Moreover, students were also guided about writing research articles and reports and were explained about different parts of research report. How to search scientific literature through different search engine was also in the objectives of that teaching session.

At the end of teaching session students were asked to fill out the same questionnaire again as they previously filled before having the teaching session. The purpose of filling questionnaire after the session was to assess whether the session influenced the students' research skills.

RESULTS

Out of 90 students 46.7% were female and 53.3% were male with mean age of 22.86±3.19 yrs. Majority of the students (77.2%) were those who did not attend a research seminar ever and 46.7% student did not feel confidence in interpreting and writing research paper. Most of the students have never participated in a research paper and have never written a scientific paper, percentages of such students were 83.7 and 89.1 respectively. When asked "do you think undergraduate student should participate in research" majority of the students (82.6%) agreed that student should participate in research. There were only 16.3% students who did not feel that undergraduate students cannot plan and conduct research and write scientific paper (Table 1).

Non-parametric test, McNemar's was employed to identify the effect of change in students' research skills through the teaching session. For this purpose we converted students' responses either correct or wrong and then employed McNemar's test for each question. At 5% level of significance, significant effect of changes were observed between pre and post teaching session for questions regarding, research definition, APA reference style, data type, literature review, scales of measurement, representativeness, MEDLINE, writing scientific paper and epidemiology definition. Only question that had insignificant effect of teaching session about the part of a scientific paper (P-value=0.522) were showed in Table 2.

For questions given in the table 2, the mean and standard deviations of correct scores for pre and post teaching sessions are 3.05 ± 1.44 and 5.83 ± 1.74 respectively. Furthermore, by employing Wilcoxon Signed Ranks test, significant difference (P-value < 0.001) was found between pre and post teaching session correct scores (Table 3).

DISCUSSION

If teaching research skills is to be realized as a substantial part of the medical curriculum, it requires being included into the course. Our study shows improvement in nursing students' research skills through a teaching session. In line with this finding, a study of Jamali et al. (2012) showed through linear regression model the students' participation in research methodology workshop independently predicts 59% of variance of students' knowledge about principles of research methodology. This shows the most important factor in students' knowledge of research methodology is participating in research methodology workshops (Jamali et al., 2012). It has been found that in 2004, none of the medical institute in Australia taught research skills in an integrated way (Bland, 2004). A study, conducted on what registered nurses and midwives feel and know about research, shows that nurses and midwives are highly in agreement with research based practices (McSherry, 1997). In 2001, a study was conducted in UK about research perception of nursing students which

Table 1. Characteristics of Nursing students and behavior about research

Characteristics	n	%
Age (Mean ± SD) Years	22.86±3.19	
Gender		
Female	43	46.7
Male	49	53.3
Previously attended a research seminar		
No	71	77.2
Yes	21	22.8
feel confident in interpreting and writing a research paper		
No	43	46.7
Yes, with assistance	40	43.5
Yes, without assistance	9	9.8
ever participated in a research project		
No	77	83.7
Yes	15	16.3
Ever written a scientific paper		
No	82	89.1
Yes	10	10.9
Do you think undergraduate students should participate in research		
No	16	17.4
Yes	76	82.6
Do you think undergraduate students can plan and conduct a research project and write a scientific paper		
No	15	16.3
Yes	77	83.7
If Yes, then under supervision		
Yes	19	24.7
No	58	75.3

Table 2. Identification of effect of change in students' research skills through the teaching session using McNemar's test.

	Pre Lecture Evaluation		Post Lecture Evaluation		McNemar Test	
	Answer		Answer		Chi value	P-value
			Wrong n (%)	Right n (%)		
Research is?	Wrong	n (%)	8(66.7%)	29 (36.3%)	17.4	< 0.001
	Right	n (%)	4(33.3%)	51(63.8%)		
The APA reference style use "et al" after author name when total number of authors are more than?	Wrong	n (%)	11 (100%)	71(87.7%)	69	< 0.001
	Right	n (%)	0 (0%)	10(12.3%)		
Height of students in a class is an example of?	Wrong	n (%)	59(90.8%)	25(92.6%)	10.4	0.001
	Right	n (%)	6(9.2%)	2 (7.4%)		
Literature review is	Wrong	n (%)	26(74.3%)	35 (61.4%)	14.2	< 0.001
	Right	n (%)	9 (25.7%)	22 (38.6%)		
A scale from 1 to 5 (like grades on an examination) is called	Wrong	n (%)	43 (97.7%)	44 (91.7%)	39.2	< 0.001
	Right	n (%)	1(2.3%)	4 (8.3%)		
Representativeness is a key characteristic of a	Wrong	n (%)	28 (90.3%)	53.(86.9%)	42.8	< 0.001
	Right	n (%)	3 (9.7%)	8 (13.1%)		
MEDLINE is	Wrong	n (%)	37 (97.4%)	32(59.3%)	27.2	< 0.001
	Right	n (%)	1 (2.6%)	22 (40.7%)		
Which of the following is not a part of reference style in APA	Wrong	n (%)	34 (94.4%)	29 (51.8%)	21.8	< 0.001
	Right	n (%)	2 (5.6%)	27 (48.2%)		

Table 2. Continued

The part of a scientific paper is	Wrong	n (%)	20 (47.6%)	17 (34.0%)	0.41	0.522
	Right	n (%)	22 (52.4%)	33 (66.0%)		
All listed rules apply to the process of writing an Introduction section of a scientific paper EXCEPT	Wrong	n (%)	66 (78.6%)	7 (87.5%)		0.043
	Right	n (%)	18 (21.4%)	1 (12.5%)		
Epidemiology is	Wrong	n (%)	49 (63.6%)	8 (53.3%)	10.02	0.002
	Right	n (%)	28 (36.4%)	7 (46.7%)		

Table 3. Correct scores for pre and post teaching sessions

Lecture Evaluation Mean ± SD Score		**Wilcoxon Signed Ranks Test**	
Pre	Post	Z value	P-value
3.05±1.44	5.83±1.74	-7.794a	<0.001

demonstrated that educational and institutional improvements require to be introduced to convert nursing into a research based profession (Ax and Kincade, 2001). A research study conducted on teaching research methodology and assessment of medical students' attitude towards the science and knowledge, reveals the positive attitude of medical students about the science and scientific research. Moreover, for those students who attendant a mandatory course on principles of scientific research, knowledge and average grades were found to be significant predictors of attitudes towards the sciences (Hren et al., 2004).

In this form of teaching exercise student effectively became a research subjects that enhanced their confidence to participate in other research projects, in future. Result findings of our research have extensive consequence for teaching research skills to nursing students. To improve research skills, such teaching sessions would be beneficial to integrate in nursing students' curriculum. Analysis of this type of teaching also needs to consider the other benefit in term of scientific research output (quality research work published have substantial impact on institute's ranking).

CONCLUSION

In this research study, it was practicable to integrate nursing students in a teaching session. We found significant impact on nursing students' research skill through a teaching session as improvement in their research skills was apparent.

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