



“A comparative study to assess the effectiveness of Objective structured long examination record (OSLER) and traditional method for assessment of clinical competency of nursing students in selected Nursing Colleges of Haryana”.

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Abstract

The present study was conducted to compare the effectiveness of objective structured long examination record (OSLER) and traditional method for assessment of clinical competency of nursing students. Non – experimental comparative research design was used. A purposive sampling technique was used to allocate 60 nursing students. One case was allotted to each student out of four cases (cervical cancer, breast cancer, alcohol abuse and depression). The result shows that in cervical cancer, breast cancer and alcohol abuse, mean rank of nursing students in traditional method was higher (20.77, 20.77, 19.53) than the OSLER method (10.23, 10.83, 11.47). The study concluded that traditional method was effective than OSLER method, in area wise the OSLER method was effective than traditional method except the area of appropriate investigation.

Keywords: Effectiveness, Assessment, OSLER, Traditional method, Clinical competency, Nursing students.

Introduction

Assessment is one of the crucial components of the instruction and the selection of suitable assessment method is highly relevant. Clinical assessment involves the assessment of the performance of the nursing student in a clinical area.¹ For many years, medical teachers have struggled to determine which method is best to assess the clinical competence of their students. Before making a choice of assessment method, it is important to assess the outline, reliability, validity and importance of particular assessment tool. Better selection of assessment method will ensure that the results obtained are a true reflection of the students' performance. The application of examination methods represents a continuing challenge for medical education.

Objectives of the Study

1. To compare the effectiveness of objective structured long case examination record and traditional method for assessment of clinical competency of nursing students in selected Nursing colleges of Haryana.
2. To find out the correlation between the clinical competency score of nursing students with Objective structured long examination record and traditional method.

Methodology

Quantitative research with non – experimental comparative research design was conducted with the objective to compare the effectiveness of objective structured long case examination record (OSLER) and traditional method for assessment of clinical competency of nursing students, to find out the correlation between the clinical competency score of nursing students with objective structured long examination record and traditional method. A purposive sampling technique was used to allocate 60 nursing students. One case was allotted to each student out of four cases (cervical cancer, breast cancer, alcohol abuse and depression). The study was conducted at Maharishi Markandeshwar (Deemed to Be University), Mullana, Ambala, Haryana. selection of sample and clinical supervisors/ observers shown in figure 1.1 and 1.2. Data was analysed by descriptive and inferential statistics using SPSS version 20

Findings of the study

Findings related to sample characteristics of Nursing students

The baseline data depicts that the overall frequency and Percentage in terms of Nursing student's profile. Majority 51.6% of nursing students were in age group of 20-22 and 48.3% were in 18-20 age group. Maximum 68.3% nursing students were female and 31.6% were male. Most of them 86.6% nursing students belonged to Hindu religion, 6.6% were belonged to Sikh and Muslim religion. Nearly half of nursing students 48.3% scored between 50-60% and 61-70% of marks in previous year and only 3.3% nursing students scored 71-80%. Nearly half of the nursing students (43.3%) had residence in home, 33.3% in hostel and 23.3% were living as Paying guest.

TABLE 1.1: Mean, Standard Deviation, Mean Rank, U value, Z value and p value of Clinical Competency Scores of Nursing Students by OSLER and Traditional Method.

Case	Groups	Mean ± SD	Mean Rank	U value	Z value	p value
Cervical cancer	OSLER (Observer I) (n=15)	60.07±4.41	10.23	33.50	-3.28	0.00*
	Traditional (Observer II) (n=15)	68.39±6.00	20.77			
	OSLER (Observer III) (n=15)	59.93±3.17	12.33	65.00	-1.97	0.04 ^{NS}
	Traditional (Observer IV) (n=15)	63.23±6.73	18.67			
		*Significant (p<0.01)	^{NS} Not significant (p>0.01)	Z= -2.57 to 2.57		

Table 1.1 depicts that the mean rank of traditional method was higher as compared to OSLER method. Thus, null hypothesis H_{01a} was partially accepted and research hypothesis H_{1a} was partially rejected. Thus, it inferred that traditional method was effective than OSLER method.

Table 1.2: Mean, standard Deviation, Mean Rank, U value, Z value and p value of Clinical Competency Scores of Nursing Students by OSLER and Traditional Method. (Breast cancer)

n=15						
Case	Groups	Mean ± SD	Mean Rank	U Value	Z value	p value
Breast cancer	OSLER (Observer I) (n=15)	60.07±3.70	10.83	42.50	-2.91	0.00*
	Traditional (Observer II) (n=15)	67.01±6.23	20.17			
	OSLER (Observer III) (n=15)	61.00±3.66	11.27	49.00	-2.64	0.00*
	Traditional (Observer IV) (n=15)	67.69±8.77	19.73			
*Significant (p<0.01)		^{NS} Not significant (p>0.01)		Z = -2.57 to 2.57		

Table 1.2 depicts that the mean rank of traditional method was higher as compared to OSLER method. Thus, null hypothesis H_{02a} was partially accepted and research hypothesis H_{2a} was partially rejected. Thus, it inferred that traditional method was effective than OSLER method.

Table 1.3: Mean, Standard Deviation, Mean Rank, U value, Z value and p value of Clinical Competency Scores of Nursing Students by OSLER and Traditional Method. (Alcohol abuse)

n=15						
Case	Groups	Mean ± SD	Mean Rank	U value	Z value	p value
Alcohol Abuse	OSLER (Observer I) (n=15)	58.03±10.02	11.47	52.00	-2.51	0.01*
	Traditional (Observer II) (n=15)	67.76±8.23	19.53			
	OSLER (Observer III) (n=15)	59.33±9.02	11.90	58.50	-2.24	0.02 ^{NS}
	Traditional (Observer IV) (n=15)	67.91±9.18	19.10			
*Significant (p<0.01)		^{NS} Not significant (p>0.01)		Z = -2.57 to 2.57		

Table 1.3 depicts that the mean rank of traditional method was higher as compared to OSLER method. Thus, null hypothesis H_{03a} was partially accepted and research hypothesis H_{3a} was partially rejected. Thus, it inferred that traditional method was effective than OSLER method.

Table 1.4: Mean, Standard Deviation, Mean Rank, U value, Z value and p value of Clinical Competency Scores of Nursing Students by OSLER and Traditional Method. (Depression)

Case	Groups	Mean ± SD	Mean Rank	U value	Z value	n=15
						p value
Depression	OSLER (Observer I) (n=15)	58.67±9.42	14.27	94.00	-.76	0.44 ^{NS}
	Traditional (Observer II) (n=15)	61.08±10.08	16.73			
	OSLER (Observer III) (n=15)	60.33±8.12	13.73	86.00	-1.10	0.27 ^{NS}
	Traditional (Observer IV) (n=15)	63.02±8.51	17.27			
*Significant (p<0.01)		^{NS} Not significant (p>0.01)		Z= -2.57 to 2.57		

Table 1.4 depicts that the mean rank of traditional method was higher as compared to OSLER method. Thus, null hypothesis H_{04a} was partially accepted and research hypothesis H_{4a} was partially rejected. Thus, it inferred that traditional method was effective than OSLER method.

Table 1.5: Area wise Mean Rank, Sum of Rank, "Z" value and "p" value of Clinical Competency Scores of Nursing Students by OSLER and Traditional Method.

Areas	OSLER (Observer I) (n=15)		Traditional (Observer II) (n=15)		OSLER (Observer III) (n=15)		Traditional (Observer IV) (n=15)	
	Mean rank	Mean rank	U (H ₀ value)	Z value (p value)	Mean rank	Mean rank	U (H ₀ value)	Z value (p value)
	Cervical cancer							
Presentation of History	18.53	12.47	67.00	-1.91 (0.05 ^{NS})	21.30	9.70	25.50	-3.64 (0.00*)
Physical Examination	23.00	8.00	0.00	-4.72 (0.00*)	23.00	8.00	0.00	-4.73 (0.00*)
Appropriate investigation	8.20	22.80	3.00	-4.57 (0.00*)	8.00	23.00	0.00	-4.69 (0.00*)
*Significant (p<0.01)		^{NS} Not significant(p>0.01)		Z = -2.57 to 2.57				

Table 1.5 depicts P value was statistically significant at 0.01 level of significance. Thus, in OSLER and traditional method (Observer I & II) all the areas were homogenous except presentation of history and in OSLER and traditional method (Observer III & IV) all the areas were homogenous.

Table 1.6: Area wise Mean Rank, Sum of Rank, "Z" value and "p" value of Clinical Competency Scores of Nursing Students by OSLER and Traditional Method. (Breast cancer)

Breast cancer								
Areas	OSLER (Observer I) (n=15)	Traditional (Observer II) (n=15)	U (H value)	Z value (p value)	OSLER (Observer III) (n=15)	Traditional (Observer IV) (n=15)	U (H value)	Z value (p value)
	Mean rank	Mean rank			Mean rank	Mean rank		
Presentation of History	16.53	14.47	97.00	-0.650 (0.51 ^{NS})	16.97	14.03	90.50	-0.922 (0.35 ^{NS})
Physical Examination	23.00	8.00	0.00	-4.77 (0.00*)	23.00	8.00	0.00	-4.71 (0.00*)
Appropriate investigation	8.07	22.93	1.00	-4.66 (0.00*)	8.27	22.73	4.00	-4.52 (0.00*)
*Significant (p<0.01)			^{NS} Not significant(p>0.01)			Z = -2.57 to 2.57		

Table 1.6 depicts P value was statistically significant at 0.01 level of significance. Thus, it has been concluded that all the areas were homogenous in OSLER and traditional method (Observer I, II, III & IV) except presentation of history.

Table 1.7: Area wise Mean Rank, Sum of Rank, "Z" value and "p" value of Clinical Competency Scores of Nursing Students by OSLER and Traditional Method.(Alcohol abuse)

Alcohol Abuse								
Areas	OSLER (Observer I) (n=15)	Traditional (Observer II) (n=15)	U (H value)	Z value (p value)	OSLER (Observer III) (n=15)	Traditional (Observer IV) (n=15)	U (H value)	Z value (p value)
	Mean rank	Mean rank			Mean rank	Mean rank		
Presentation of History	20.00	11.00	45.00	-2.81 (0.05 ^{NS})	20.43	10.57	38.50	-3.07 (0.02 ^{NS})
Physical Examination	21.37	9.63	24.50	-3.67 (0.00*)	20.60	10.40	36.00	-3.19 (0.00*)
Appropriate investigation	8.07	22.93	1.00	-4.63 (0.00*)	8.40	22.60	6.00	-4.43 (0.00*)
*Significant (p<0.01)			^{NS} Not significant(p>0.01)			Z = -2.57 to 2.57		

Table 1.7 depicts P value was statistically significant at 0.01 level of significance. Thus, it has been concluded that all the areas were homogenous in OSLER and traditional method (Observer I, II, III & IV) except presentation of history.

Table 1.8: Area wise Mean Rank, Sum of Rank, "Z" value and "p" value of Clinical Competency Scores of Nursing Students by OSLER and Traditional Method. (Depression)

Depression								
Areas	OSLER (Observer I) (n=15)	Traditional (Observer II) (n=15)	U (H value)	Z value (p value)	OSLER (Observer III) (n=15)	Traditional (Observer IV) (n=15)	U (H value)	Z value (p value)
	Mean rank	Mean rank			Mean rank	Mean rank		
Presentation of History	20.67	10.33	35.00	-3.22 (0.05 ^{NS})	20.87	10.13	32.00	-3.34 (0.01*)
Physical Examination	21.33	9.67	25.00	-3.63 (0.00*)	21.87	9.13	17.00	-3.97 (0.00*)
Appropriate investigation	8.17	22.83	2.50	-4.57 (0.00*)	8.33	22.67	5.00	-4.46 (0.00*)
*Significant (p<0.01)			^{NS} Not significant(p>0.01)			Z = -2.57 to 2.57		

Table 1.8 depicts P value was statistically significant at 0.01 level of significance Hence, it has been concluded that all the areas were homogenous in OSLER and traditional method (Observer I & II) except presentation of history and in OSLER and traditional method (Observer III & IV) all the areas were homogenous.

Table 1.9: Spearman Correlation Shows Correlation between the Clinical Competency Scores of Nursing Students by OSLER and

Traditional Method. (Cervical cancer)

				n=15
Cases	GROUPS	Traditional (Observer II)	Traditional (Observer IV)	
Cervical cancer	OSLER (Observer I)	.27 (0.32 ^{NS})	.27 (0.32 ^{NS})	
	OSLER (Observer III)	.22 (0.42 ^{NS})	.17 (0.54 ^{NS})	
	^{NS} Not significant (p>0.05)			r = 58

Table 1.9 shows correlation between the clinical competency scores of nursing students by OSLER and Traditional method in case of Cervical cancer. The findings showed that there was no statistically significant correlation between the OSLER (Observer I) and Traditional method (Observer II), OSLER (Observer III) and Traditional method (Observer IV) ($r = .27, p = 0.32^{NS}$), ($r = .27, p = 0.32^{NS}$), ($r = .22, p = 0.42^{NS}$), ($r = .17, p = 0.54^{NS}$). Therefore, the null hypothesis H_{02a} was accepted research hypothesis H_{2a} was rejected.

Table 1.10: Spearman Correlation Shows Correlation between the Clinical Competency Scores of Nursing Students by OSLER and Traditional Method. (Breast cancer)

				n=15
Cases	GROUPS	Traditional (Observer II)	Traditional (Observer IV)	
Breast Cancer	OSLER (Observer I)	-.10 (0.70 ^{NS})	-.06 (0.83 ^{NS})	
	OSLER (Observer III)	-.11 (0.69 ^{NS})	.06 (0.81 ^{NS})	
	^{NS} Not significant (p>0.05)			r = 58

Table 1.10 shows correlation between the clinical competency scores of nursing students by OSLER and Traditional method in case of Breast cancer. The findings showed that there was no statistically significant correlation between the OSLER (Observer I) and Traditional method (Observer II), OSLER (Observer III) and Traditional method (Observer IV) ($r = -.10, p = 0.70^{NS}$), ($r = -.06, p = 0.83^{NS}$), ($r = -.11, p = 0.69^{NS}$), ($r = .06, p = 0.81^{NS}$). Therefore, the null hypothesis H_{02b} was accepted and research hypothesis H_{2b} was rejected.

Table 1.11: Spearman Correlation Shows Correlation between the Clinical Competency Scores of Nursing Students by OSLER and Traditional Method. (Alcohol abuse)

Cases	GROUPS	n=15	
		Traditional (Observer II)	Traditional (Observer IV)
Alcohol abuse	OSLER (Observer I)	.68 (0.05*)	.47 (0.07 ^{NS})
	OSLER (Observer III)	.68 (0.00*)	.49 (0.06 ^{NS})
		*Significant (p<0.05)	^{NS} Not significant (p>0.05)
		r = 58	

Table 1.11 shows correlation between the clinical competency scores of nursing students by OSLER and Traditional method in case of Alcohol abuse. The findings showed that there was statistically significant moderate correlation between the OSLER (Observer I) and Traditional method (Observer II), ($r = .68$, $p = 0.05^*$), but there was no statistically significant correlation between the OSLER (Observer I) and Traditional method (Observer IV) ($r = .47$, $p = 0.07^{NS}$). There was statistically significant moderate correlation between the OSLER (Observer III) and Traditional method (Observer II) ($r = .68$, $p = 0.00^*$) but there was no statistically significant correlation between the OSLER (Observer III) and Traditional method (Observer IV) ($r = .49$, $p = 0.06^{NS}$). Therefore, the null hypothesis H_{02c} was partially accepted and research hypothesis H_{2c} was partially rejected.

Table 1.12: Spearman Correlation Shows Correlation between the Clinical Competency Scores of Nursing Students by OSLER and Traditional Method. (Alcohol abuse)

Cases	GROUPS	n=15	
		Traditional (Observer II)	Traditional (Observer IV)
Alcohol abuse	OSLER (Observer I)	.68 (0.05*)	.47 (0.07 ^{NS})
	OSLER (Observer III)	.68 (0.00*)	.49 (0.06 ^{NS})
		*Significant (p<0.05)	^{NS} Not significant (p>0.05)
		r = 58	

Table 1.12 depicts there was statistically significant moderate correlation between the OSLER (Observer I) and Traditional method (Observer II), ($r = .68$, $p = 0.05^*$), but there was no statistically significant correlation between the OSLER (Observer I) and Traditional method (Observer IV) ($r = .47$, $p = 0.07^{NS}$), there was statistically significant moderate correlation between the OSLER (Observer III) and Traditional method (Observer II) ($r = .68$, $p = 0.00^*$) but there was no statistically significant correlation between the OSLER (Observer III) and Traditional method (Observer IV) ($r = .49$, $p = 0.06^{NS}$). Therefore, and null hypothesis H_{02c} was partially accepted and the research hypothesis H_{2c} was partially rejected.

DISCUSSION

In the present study, more than half (53.3%) of nursing students in OSLER method (Observer I) and majority (93.3%) of nursing students in traditional method (Observer II) were graded as very good. In OSLER method (Observer III), more than half (53.3%) of nursing students and (73.3%) of nursing students in traditional method (Observer IV) were graded as very good. These findings were consistent with the study conducted by A F Gleeson, (1992)³, the study observed that the average number of doctors obtaining a P+ grade was 32(22%), the average for a P – grades was 44(28%) and P grade was 12(7%).

In the present study, clinical competency scores shows that the mean clinical competency scores of nursing students by traditional method (Observer II) 68.39 ± 6.00 was higher than 60.07 ± 4.41 OSLER (Observer I) method and the mean rank (20.77) of traditional method (Observer II) was more than OSLER method (Observer I) (10.23). In contrast with the study conducted by **G Prabhu S, Abraham G, Malavika Nair L. (2017)⁴**, which states that the mean was higher in OSLER (59.4) as compared to the mean score of conventional method (58.5).

In the present study, the findings showed that there was no statistically significant correlation between the OSLER and Traditional method (Observer I & II), (Observer III & IV) ($r = .27, p = 0.32^{NS}$), ($r = .27, p = 0.32^{NS}$), ($r = .22, p = 0.42^{NS}$), ($r = .17, p = 0.54^{NS}$). These findings were consistent with the finding of the study conducted by **Syed Inamullah Shah and Mehreen Baig et. al. (2018)⁵**

Limitations of study

Both the tools could be used as a method to evaluate the clinical competency of nursing students but in this study, researcher used only for the effectiveness.

Conclusion

The traditional method was found to be effective as compared to OSLER method for assessment of clinical competency of nursing students as the mean scores of the traditional method was higher as compared to the OSLER method but in area wise evaluation, OSLER method was effective as compared to traditional method in all the areas except the area of appropriate investigation.

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