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IMPACT OF MULTICOMPONENT PROGRAM TO PREVENT DELIRIUM AMONG CRITICALLY ILL PATIENTS ADMITTED IN ICUS.

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ABSTRACT

Objectives: Evaluating the effectiveness of Multicomponent Programme on prevention of delirium among critically ill patients.

Methods: A quantitative approach with non-equivalent control group pre test- post test design. Setting of the study was Hospitals of Mullana, Ambala, and Haryana. A total of 90 critically ill patients admitted in intensive care unit were recruited by purposive sampling and allocated into experimental group (n=45), comparison group (n=45). The tool used for the study consisted of selected variables, clinical variable, Memorial Delirium Assessment Scale. In comparison group pre test was conducted. 2nd day to 4th day routine care was provided. Daily assessment of delirium scores were done till 6th day. Post test was conducted at 5th day. In experimental group on day one pre test was conducted, 2nd day to 4th day Multicomponent program was administered. Daily assessment of delirium scores were done till 6th day. Post test was conducted at 5th day.

Results: Significant difference was noticed in delirium scores between experimental, and comparison group (p=0.00). **Conclusion:** Findings concluded that the Multicomponent Program was effective in

prevention of delirium, although the patients received intervention were having decreased scores than comparison group.

Keywords: Multicomponent program, delirium prevention, critically ill patients.

Introduction

Delirium is defined as a disturbance in attention, consciousness and cognition with reduced capacity to direct, focus, sustains and change attention, and reduced orientation to the environment. Critically ill patients in the intensive care unit (ICU) often develop ICU delirium. It is associated with increased mortality, extended duration of mechanical ventilation, extended hospital and ICU stay and long-term cognitive impairment. Typically, delirium causes fluctuating disturbance in attention, cognition, and consciousness which significantly complicates the delivery of care and reduce the prognosis.[1]

Estimated that 35.6 million people worldwide affected due to delirium. Incidence and prevalence rate of delirium were 24.4% and 53.6% in INDIA. Delirium in the intensive care unit is a thoughtful problem that has recently attracted more attention.[2]

Delirium patients are at risk of developing various complications, including infections like pneumonia and urinary tract infections, pressure ulcers, venous thromboembolism, poor recovery from surgery. These patients are at a greater risk of extended periods of mechanical ventilation and associated complications, such as aspiration, nosocomial pneumonia, and decline in health, increased risk of death.[3]

Delirium prevention approaches to improve overall excellence of hospital care. This program comprises the following: maintaining orientation to surroundings and sleep; encouraging mobility within the limits of physical condition; and providing visual and hearing adaptations for patients with sensory losses, cognitive stimulation .[4]

A study was conducted to assess Multicomponent intervention may decrease delirium incidence, and/or its duration and severity, in inpatients with progressive cancer. Results shows the primary outcome is adherence to the intervention through the first seven days of admission, measured for 40 consecutively admitted eligible patients. Secondary outcomes relay to fidelity and feasibility, suitability and sustainability of the study intervention, processes and measures in this patient population, using quantitative and qualitative measures. Delirium incidence and severity will be measured to inform power calculations for a upcoming phase III trial. This sample size depended on that anticipated for the future stage III bunch RCT of the intercession with: two equal arms, 50% delirium rate in the control, 30% delirium in intervention group, cluster size of 30 and intraclass correlations of 0.05, type I error rate of 5%, 80% power to reject the null hypothesis and 30% attrition .[5]

Limited studies have been conducted on efficacy of Multicomponent program on prevention of delirium. Screening and assessments as a routine measure should be done. for patients. To improve the care outcomes of the patients and prolonged hospital stay of patients. Therefore it is necessary to assess the occurrence of delirium in ICU patient, administer delirium prevention and management program. Thus, this study is aimed at to evaluate the effectiveness of delirium prevention & management programme on occurrence of delirium among patients admitted in ICU of selected hospital Mullana, Ambala, Haryana.

The objective of the study is to evaluate the effectiveness of Multicomponent Programme on prevention of delirium among critically ill patients.

METHODS

OBJECTIVE: To assess and compare the scores of delirium among critically ill patients admitted in intensive care units before and after administration of Multicomponent program in experimental and comparison group. The study used quantitative approach and non-equivalent control group pre test- post test design. The study was conducted at Hospitals of Ambala, Haryana.

Population and Sample

A total of 90 critically ill patients admitted in intensive care unit were recruited by purposive sampling and allocated into experimental group (n=45), comparison group (n=45). The tool used for the study consisted of selected variables regarding study participants characteristics, clinical variables, Memorial Delirium Assessment Scale to assess the delirium scores. Reliability of the tools was established by chronbach alpha for Memorial Delirium Assessment Scale (0.99)

Data and Sources of Data

The data collection was done during the period of November to December 2019. In comparison group pre assessment of selected variables, clinical variables and delirium scores were done. Daily assessment of delirium scores were done till 6^{th} day. 2^{nd} day to 4^{th} day routine care was provided. Post test was conducted at 5^{th} day. In experimental group on day one pre assessment of selected variables, clinical variables and delirium scores were done. Daily assessment of delirium scores were done till 6^{th} day. 2^{nd} day to 4^{th} day Multicomponent program was administered. Multicomponent program consist of (orientation, sensory stimulation by music therapy, mobilization, cognitive stimulus, sleep promotion). Post test was conducted at 5^{th} day. Attrission of 14 patients in experimental group and 12 patients in comparison group due early discharge. Data analysis was done using both descriptive and inferential statistics i.e. “t” test, Repeated Measures ANOVA

Theoretical Framework

The conceptual framework in this study is based on Betty Neuman Model, aimed at to assess the effectiveness of Multicomponent program on prevention of delirium, among

critically ill patients admitted inICUs (Deemed to be University) Mullana, Ambala.

Betty Neuman's System Model provides a comprehensive, holistic and system- based approach to nursing that contains an element of flexibility. The theory focuses on the response of the patient system to actual or potential environment stressors and the use of primary, secondary, and tertiary nursing prevention intervention for retention, attainment and maintenance of patient system wellness.

DATA ANALYSIS

According to the objectives and hypotheses of the study and opinion of experts was planned to organize, tabulate and interpret the data by using both descriptive and inferential statistics i.e. Mean, Median and standard deviation, and "t" test, Repeated Measures ANOVA.

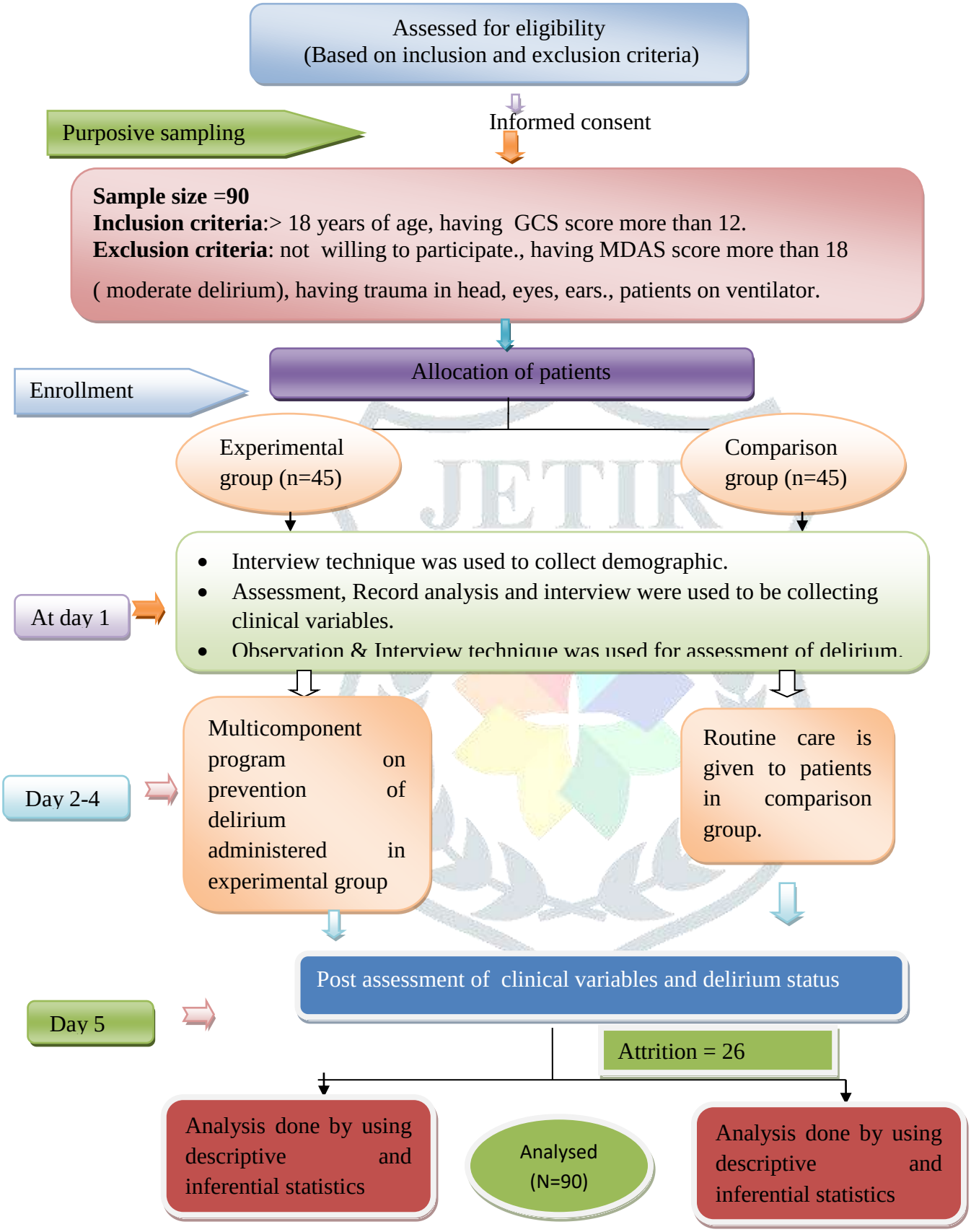

Fig.1: Consort diagram for sample selection

RESULTS AND DISCUSSION

The Kolmogorov- Smirnov test was applied to check the normality of data distribution between the samples regarding prevention of delirium among critically ill patients and scores of delirium in pre test (p=) was normally distributed as calculated K-S value was not significant at 0.05 level of significance. Hence parametric test was applied for both comparison and experimental group.

Comparison of experimental and comparison group in terms of socio demographic and clinical variables

TABLE 1. Comparison of delirium patients in terms of Socio Demographic

N=90

Socio demographic variables	Experimental group n=45 f (%)	Comparison group n= 45 f(%)	χ2	Df	p value
1.Age					
1.1 18-32	9(20.0)	9(19.6)			
1.2 33-47	8(17.8)	13(28.3)			
1.3 48-62	9(20.0)	7(15.2)	1.71	4	0.78 NS
1.4 62- 77	18(40.0)	15(32.6)			
1.5 >77	1(2.2)	1(2.2)			
2.Gender					
2.1 Male	16(35.6)	21(46.7)	1.14	1	0.28 NS
2.2 Female	29(64.4)	24(53.3)			
3.Marital status					
3.1Married	28(62.2)	35(77.8)			
3.2Unmarried	6(13.3)	3(6.7)	2.77	3	0.42 NS
3.3Divoeced/separated	1(2.2)	1(2.2)			
3.4Widow	10(22.2)	6(13.3)			
4.Educational status					
4.1No formal education	16(35.6)	12(26.7)			
4.2 Primary	10(22.2)	17(37.8)			
4.3 Up to 10th standard	16(35.6)	11(24.4)	3.84	4	0.42 NS
4.4 Up to higher secondary	2(4.4)	3(6.7)			
4.5 Graduate and above	1(2.2)	2(4.4)			
5.Occupation					
5.1 Unemployed	8(17.8)	11(24.4)			
5.2 Home maker	26(57.8)	23(51.1)	5.53	4	0.23 NS
5.3 Self employed	7(15.6)	3(6.7)			
5.4 Private job	3(6.7)	8(17.8)			
5.5 Government job	1(2.2)	0			

6.Alcohol abuse					
6.1 Yes	8(17.8)	15(33.3)	2.8	1	0.91
6.2 No	37(82.2)	30(66.7)	6		NS

$\chi 2$ at (1)=3.84 ,(2)=5.991, (3)=7.815,(4)= 9.488, (6)=12.592

NS – Non significant (p>0.05) *-Significant (p≤0.05)

TABLE 2. Comparison of delirium patients in terms of clinical variables

N=90

Clinical Variable	Experimental group n=45 f(%)	Comparison group n= 45 f(%)	$\chi 2$	Df	p value
1. Length of stay in ICU					
1.1 1 to 3 days	44(97.8)	43(95.6)			
1.2 4 to 6 days	1(2.2)	2(4.4)	0.34	1	0.57NS
1.3 7 to 10 days					
1.4 11 to 14 days					
2. Diagnosis on admission					
2.1 GU Disease	1(2.2)	0			
2.2GI Diseases	4(8.9)	4(8.9)			
2.3 CV disease	4(8.9)	0	7.86	7	0.34NS
2.4 Respiratory	0	2(4.4)			
2.5 CNS	2(4.4)	2(4.4)			
2.6 Endocrine	2(4.4)	1(2.2)			
2.7 Dengue	7(15.6)	6(13.3)			
Fever	25(55.6)	30(66.7)			
2.8Multiple disease					
Q3. Co morbid illness					
3.1 Yes	12(26.7)	13(28.9)	0.05	1	1.00NS
3.2 No	33(73.3)	32(71.1)			
4. History of renal disease					
4.1 Yes	6((13.3)	18(40.0)	8.18	1	0.00*
4.2 No	39(86.7)	27(60.0)			
5.History of liver disease					
5.1 Yes	7(15.6)	8(17.8)	0.08	1	0.77NS

5.2 No	38(84.4)	37(82.7)			
6. Hearing status	45(100)	45(100)	-	-	-
6.1 Intact	0	0			
6.2 Impaired					
7.Visual status					
7.1 intact	17(37.8)	22(48.9)	1.31	1	0.28^{NS}
7.2 impaired	28(62.2)	23(51.1)			
8.Ambulatory status	7(15.6)	10(22.2)			
8.1 Dependent	37(82.2)	34(75.6)			
8.2 Partially dependent	1(2.2)	1(2.2)	0.65	2	0.72^{NS}
8.3. Ambulatory					
9. Physical restrain	4(8.9)	3(6.7)	0.15	1	0.69^{NS}
9.1 Yes	41(91.1)	42(93.3)			
9.2 No					
10. Sleeping pattern	17(37.8)	15(33.3)			
10.1 No sleep	22(48.9)	24(53.3)	0.04	2	0.97^{NS}
10.2 1 – 3 hours	6(13.3)	6(13.3)			
10.3 4 – 6 hours					
10.4 7 – 8 hours					
10.5 > 8 hours					
Q11. Pain					
11.1 0 – No pain	12(26.7)	11(24.4)			
11.2 1 – 3 Mild	27(60.0)	26(57.8)	0.34	2	0.84^{NS}
11.34 – 6 Moderate	6(13.3)	8(17.8)			
11.4 7 – 10 Severe					
12.Use delirium inducing of Medications					
12.1 No	23(51.1)	21(46.7)	6.80	4	0.14^{NS}
12.2 Analgesics	15(33.3)	20(44.7)			
12.3Sedative	1(2.2)	1(2.2)			
12.4Anticholinergic drugs	5(11.1)				
12.5 Anticonvulsant	1(2.2)	3(6.7)			
		0			
Q13. Blood pressure					
13.1<80/<60	24(53.3)	25(55.5)			
13.2 80-120/60-79	15(33.3)	15(33.3)	0.22	3	0.68^{NS}
13.3 120-	3(6.7)	2(4.4)			
	3(6.7)	3(6.7)			

139/80-89					
13.4 140-159/90-99					
13.5 >160/>100					
Q14.Blood Values Hb					
14.1<10	23(51.1)	21(46.7)	1.11	3	0.77^{NS}
14.2 10-13	18(40)	17(37.8)			
14.3 13-15	3(6.7)	6(13.3)			
14.4>15	1(2.2)	1(2.2)			
15.SGOT					
15.1 decreased	0	0			
15.2 normal	12(26.7)	15(33.3)	4.76	1	0.49^{*}
15.3 increased	33(73.3)	30(66.7)			
16. SGPT					
16.1 decreased	0	0			
16.2 normal	9(20.0)	12(26.7)	0.55	1	0.45^{NS}
16.3 increased	36(80.0)	33(73.3)			
17. Bilirubin					
17.1 decreased	0	1(2.2)			
17.2 normal	25(55.6)	30(66.7)	2.51	2	0.28^{NS}
17.3 increased	20(44.4)	14(31.1)			
18. Urea					
18.1 decreased	1(2.2)	3(6.6)			
18.2 normal	16(35.6)	8(17.8)	4.24	2	0.12^{NS}
18.3 increased	28(62.2)	34(75.6)			
19. Creatinine					
19.1 decreased	4(8.9)	0			
19.2 normal	21(46.7)	21(46.7)	4.36	2	0.11^{NS}
19.3 increased	20(44.4)	24(53.3)			
20. ABG analysis	18(40.0)	20(44.4)	0.18	1	0.67^{NS}
20.1 yes	27(60.0)	25(55.6)			
20.2 no					

$\chi 2$ at(1)=3.841,(2)=5.991, (3)=7.815,(4)= 9.488, (6)=12.592

^{NS} – Non significant (p>0.05) *-Significant (p≤0.05)

Evaluation of effectiveness of Multicomponent program on prevention of delirium

Before administration of Multicomponent program

Level of delirium before administration of Multicomponent program. More than half of critically ill patients in experimental (57.8%) and in comparison group (55.6%) were at risk of delirium

TABLE 3. Delirium scores of patients before administration of Multicomponent program.

N=90s

MDAS	Experimental group (n=45) Mean±SD	Comparison group (n=45) Mean±SD	M_D	SE_{MD}	t value	df	p value
Pre test	11.56±2.85	9.60±3.74	1.96	0.70	2.78	88	0.00*

t (88)= 1.9873

NS-Non significant(p>0.05) *Significant(p≤0.05)

After administration of Multicomponent program

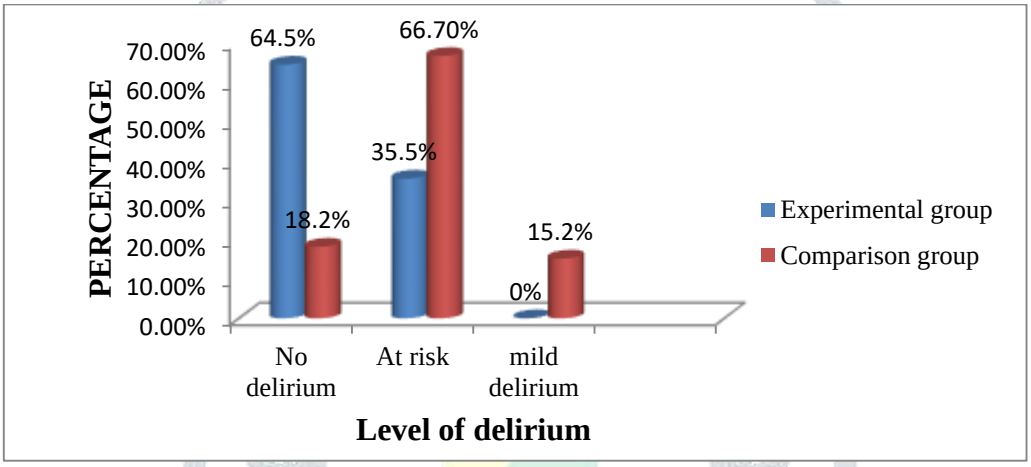

Fig.2 Bar diagram showing frequency and percentage of level of delirium after administration of Multicomponent program in experimental group patients admitted in ICU (At 5th day).

TABLE 4. Delirium scores before and after administration of Multicomponent program

N=90

Group	Test	Mean	F value	p value
Experimental group (n=45)	Pre test	11.56	169.88	0.00*
	2nd day	11.20		
	3rd day	9.20		
	4th day	7.02		
Comparison group (n=45)	Pre test	9.60	0.41	0.63NS
	2nd day	9.82		
	3rd day	9.67		
	4th day	9.51		

NS- Non significant (p>0.05) *Significant (p≤0.05)

TABLE 5. Post Hoc showing significant mean difference in RM –ANOVA value of delirium scores before and after administration of Multicomponent program.

N=90

Group	Category	MD	SE	p value
Experimental group (n=90)	Pre test Vs post test 2nd day	3.56	0.159	0.18NS
	Pre test Vs post test 3rd day	2.35	0.23	0.00*
	Pre test Vs Post test 4th day	4.53	0.30	0.00*
	Post test 2nd day VS Post test 3rd day	2.00	0.19	0.00*
	Post test3rd day VS Post test 4th day	2.17	0.18	0.00*

NS Non significant (p>0.05) *Significant (p<0.05)

TABLE 6. Delirium scores after administration of Multicmponent program

N=90

MDAS	Experimental group (45) Mean±SD	Comparison group (45) Mean±SD	M_D	SE MD	t valve	Df	p value
Day 5th (n 64)	5.97±2.35	9.91±2.73	3.94	0.63	6.16	62	0.00*

t (62)= 1.9990

NS-Non significant (p>0.05) *Significant (p≤0.05)

TABLE 7. Delirium before and after administration of Multicomponent program in experimental and comparison group at 5th day.

N=65

Group	Test	Mean±SD	M_D	SE_{MD}	t value	Df	p value
Experimental group (n=31)	Pre test	11.64±3.09	5.67	0.35	16.16	30	0.00*
	5th day	5.97±2.35					
Comparison group (n=33)	Pre test	9.75±3.58	0.16	0.53	0.28	32	0.78NS
	5th day	9.91±2.73					

t at 30=1.697,t(32)=1.6939

NS- Non significant (p>0.05)

*significant (p≤0.05)

TABLE 8. Association between pre test scores of delirium and clinical variables of critically ill patients

N=90

Clinical Variable	Experimental group n=45 f(%)	Mean	df	F/t	p value	Comparison group n=45 f(%)	Mean	df	F/t	p value
1. Length of stay in ICU										
1.1 1 to 3 days	44(97.8)	2.29	43	0.49	0.62NS	43(95.6)	2.02	43	0.48	0.96NS
1.2 4 to 6 days	1(2.2)	2.00				2(4.4)	2.00			
2. Diagnosis on admission										
2.1 GU Disease	1(2.2)	2.00								
2.2GI Diseases	4(8.9)	2.50	6/38	0.88	0.51NS	4(8.9)	1.75	5/39	0.32	0.89NS
2.3 CV disease	4(8.9)	1.75								
2.4 Respiratory						2(4.4)	2.00			
2.5 CNS	2(4.4)	2.50				2(4.4)	2.50			
2.6 Endocrine	2(4.4)	2.50				1(2.2)	2.00			
2.7 Dengue Fever	7(15.6)	2.14				6(13.3)	2.00			
2.8Multiple disease	25(55.6)	2.36				30(66.7)	2.02			

Q3. Co morbid illness	12(26.7)	2.16	43	0.83	0.40^{NS}	13(28.9)	2.07	43	0.35	0.72^{NS}
3.1 Yes	33(73.3)	2.33				32(71.1)				
3.2 No										
4. History of renal disease										
4.1 Yes	6((13.3)	2.33	43	0.19	0.84^{NS}	18(40.0)	2.00	43	0.18	0.85^{NS}
4.2 No	39(86.7)	2.28				27(60.0)	2.03			
5.History of liver disease										
5.1 Yes	7(15.6)	2.28	43	0.01	0.98^{NS}	8(17.8)	1.87	43	0.69	0.49^{NS}
5.2 No	38(84.4)	2.28				37(82.7)	2.05			
6. Hearing status										
6.1 Intact	45(100)	-	-	-	-	45(100)	-	-	-	-
6.2 Impaired										
7.Visual status										
7.1 intact	17(37.8)	2.35	43	0.56	0.57^{NS}	22(48.9)	1.90	43	1.13	0.26^{NS}
7.2 impaired	28(62.2)	2.25				23(51.1)	2.13			
8.Ambulatory status	7(15.6)	2.57				10(22.2)	2.30			
8.1 Dependent	37(82.2)	2.24	2/42	1.04	0.36^{NS}	34(75.6)	1.97	2/42	2.34	0.10^{NS}
8.2 Partially dependent	1(2.2)	2.00				1(2.2)	1.00			
8.3. Ambulatory										
9. Physical restrain	4(8.9)	2.75	43	1.67	0.10^{NS}	3(6.7)	3.00	43	2.88	0.00*
9.1 Yes	41(91.1)	2.24				42(93.3)	1.95			
9.2 No										
10. Sleeping pattern	17(37.8)	2.41	2/42	0.60	0.48^{NS}	15(33.3)	2.46	2/42	7.00	0.00*
10.1 No sleep	22(48.9)	2.22				24(53.3)	1.75			
10.2 1 – 3 hours	6(13.3)	2.16				6(13.3)	2.00			
10.3 4 – 6 hours										
10.4 7 – 8 hours										
Q11. Pain										
11.1 0 – No pain	12(26.7)	2.16				11(24.4)	2.09			
11.2 1 – 3 Mild	27(60.0)	2.37	2/42	0.63	0.53^{NS}	26(57.8)	1.88	2/42	1.85	0.16^{NS}
11.3 4 – 6 Moderate	6(13.3)	2.16				8(17.8)	2.37			
11.4 7 – 10 Severe										
12.Use delirium inducing of Medications	23(51.1)	2.43	4/40	1.38	0.25^{NS}	21(46.7)	2.09	3/41	1.21	.316^{NS}
12.1 No	15(33.3)	2.13				20(44.7)	1.95			
12.2 Analgesics	1(2.2)	3.00				1(2.2)	3.00			
12.3Sedatives	5(11.1)	2.00				3(6.7)	1.66			
12.4Anticholinergic drugs	1(2.2)	2.00								

12.5Anticonvulsant										
Q13. Blood pressure										
13.1<80/<60	24(53.3)	2.16	3/41	0.93	0.43^{NS}	25(55.5)	2.08	3/41	0.68	0.56^{NS}
13.2 80-120/60-80	15(33.3)	2.40				15(33.3)	1.86			
13.3 120-139/80-89	3(6.7)	2.33				2(4.4)	2.50			
13.4 140-159/90-99	3(6.7)	2.66				3(6.7)	2.00			
Q14.Blood Values Hb										
14.1<10	23(51.1)	2.39				21(46.7)	1.95			
14.2 10-13	18(40)	2.16	3/41	0.55	0.64^{NS}	17(37.8)	2.05	3/41	1.38	0.26^{NS}
14.3 13-15	3(6.7)	2.33				6(13.3)	2.33			
14.4>15	1(2.2)	2.00				1(2.2)	1.00			
15.SGOT										
15.1decreased										
15.2 normal	12(26.7)	2.25	43	0.26	0.79^{NS}	15(33.3)	1.93	43	0.63	0.52^{NS}
15.3increased	33(73.3)	2.30				30(66.7)	2.06			
16. SGPT										
16.1decreased										
16.2 normal	9(20.0)	2.33	43	0.25	0.80^{NS}	12(26.7)	2.08	43	0.37	0.71^{NS}
16.3increased	36(80.0)	2.27				33(73.3)	2.00			
17. Bilirubin										
17.1 decreased						1(2.2)	2.00			
17.2 normal	25(55.6)	2.24	43	0.61	0.53^{NS}	30(66.7)	1.96	2/42	0.33	0.71^{NS}
17.3 increased	20(44.4)	2.35				14(31.1)	2.14			
18. Urea										
18.1 decreased	1(2.2)	2.00	2/42	0.53	0.59^{NS}	3(6.6)	2.00	2/42	0.00	0.99^{NS}
18.2 normal	16(35.6)	2.18				8(17.8)	2.00			
18.3 increased	28(62.2)	2.35				34(75.6)	2.02			
19. Creatinine										
19.1 decreased	4(8.9)	1.75	2/42	1.92	0.15^{NS}					
19.2 normal	21(46.7)	2.33				21(46.7)	2.04	43	0.24	0.81^{NS}
19.3 increased	20(44.4)	2.35				24(53.3)	2.00			
20. ABG analysis										
20.1 yes	18(40.0)	2.38	43	0.92	0.35^{NS}	20(44.4)	2.00	43	0.20	0.82^{NS}
20.2 no	27(60.0)	2.22				25(55.6)	2.04			

t(43) =2.0167, F (4/40)= 3.126, (3/41)= 3.126, (6/38)=2.3359,(5/39)=2.4495,(2/42)=3.2317

^{NS}-Non significant (p>0.05) *Significant (p≤0.05)

EXTRA FINDINGS

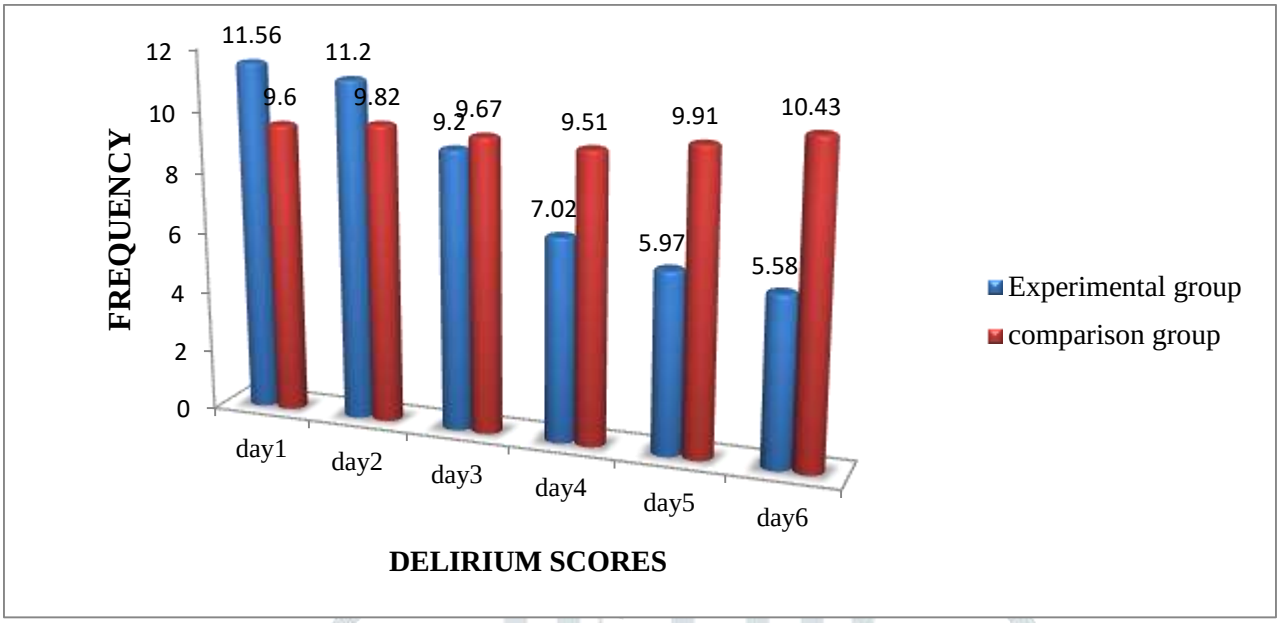

FIGURE 3. Bar diagram showing level of mean scores of daily assessment of delirium in experimental and comparison group patients admitted in ICU

DISCUSSION

In the present study less than half of the critically ill patients (40%) were in the age group of 62-77 years in experimental group and less than half of the critically ill patients (32.6%) were in age group of 62-77years in comparison group. These findings are contradictory with the study conducted by **Sharon K. Inouye, Sidney T, Natalia Stanulewicz , (2020)** et al .most of the patients were having age more than70 years in intervention and usual care group.[5]

In the present study Maximum critically ill patients in experimental group (82.2%) were having no alcohol abuse. The findings were contradictory to a study conducted by **Felipe Martínez, MD (2017)** et al the results shows no alcoholism in experimental group (13%).[6]

In the present study there was significant difference in terms of delirium scores after administration of Multicomponent program in experimental and comparison group the mean score of delirium in experimental group was lower than comparison group The findings were supported by a study conducted by **Timothy D Girard1, (2008)** et al the results of the study shows that The intervention significantly reduced delirium (15.0% in the usual care group versus 9.9% in the intervention group; matched OR = 0.60, 95% CI = 0.39 to 0.92).[7]

Another study shows similar findings the study was conducted by **Julie Kalabalik, (2014)** et al the results of study shows Patients in the intervention group experienced shorter duration of delirium (median 2 versus 4 days, P ¼ .02).[8]

IMPLICATIONS

Nursing Practice:

Nurses should routinely assess the delirium score, of critically ill patients. Nurses should routinely provide Multicomponent program to critically ill patient with MDAS <12..Nurses working in hospital can provide information and administer Multicomponent program and timely helps the critically ill patients to understand about the effect of Multicomponent program and manage the risk of delirium. Nurses should have knowledge about the factors, which enhance and increase the delirium in critically ill patients.

Nursing Research

Further research studies can be in the field of delirium in ICU patients. The findings of the study has generated the evidence about that triggering factors of delirium i.e. sleeping pattern, physical restrain and the effectiveness of Multicomponent program in reducing the level of delirium.

LIMITATIONS

Randomization was not done. Researcher was not blind about patient assignment in experimental and comparison groups; therefore it may introduce biasness in the observation delirium scores. In the present study both the groups were not homogenous because patients of experimental group were sicker. This may have effect on findings of study.

CONCLUSION

The finding of study shows that Multicomponent Program was effective decreasing the level of delirium between experimental and comparison group as there is significant difference between both the groups. Multicomponent Program was effective decreasing the level of delirium within the groups as there is significant difference within the experimental group.

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This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Ethical Consideration:

Formal administrative approval was obtained from the Hospital to conduct the final study (Ethical no. IEC-1508).The study was carried out in accordance with the guidelines laid by Indian Council of Medical Research. Research participants were enrolled in the study after written informed consent and they were assured about the confidentiality of their response.. Purpose of the study was explained to the sample subjects before data collection.

Conflict of Interest: The authors declared no potential conflicts of interest.

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