

Evaluating and Comparing the Experimental and Control Medical Students' Knowledge and Functional Health Issues Groups Before and after Testing

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Abstract

Researchers used family-centered nursing treatments in the third stage. These that were teaching families about solving functional health issues with the use of flashcards, suggesting changes that could be made to the home environment to help prevent falls, and teaching families about good night's sleep and deep breathing to help them wind down better. Information was reinforced and exercise was adhered to through direct visits using notes and a video show. After one, three, and six months, participants were given a post-test. This is what After six months (Post test 3), information on the data analysis's outcomes was made public instability, disturbed sleep, and understanding among the elderly and those who care for them after Family Focused Nursing Interventions (FFNI) were given.

Keywords: nursing, treatments, Interventions. Functional Health, teaching

Introduction

It looks like the number and level of university students experiencing mental health issues in the US have been getting worse over the past 15 years, according to experts. Xiao and colleagues (2017) recently discovered that over five years, students' histories of mental illness, harm to others, stress, and drug use all got a lot worse. Over time, there were also upward trends in problems with thoughts of ending one's life, hurting oneself, despair, worry, social anxiety, and discomfort. At the same time, the average number of meetings and students needing therapy services went up by 30% each year. So, college students' mental health seems to be getting worse over time, which means they need more mental health services on campus. Many things that affect college success can be affected by mental health issues, such as brain functioning (such as arranging, preparing, and choices), dealing with groups, stigmatization,

attendance, and keeping yourself along with others motivated (Collins & Mowbray, 2005). Recognizing the things that affect college mental well-being of pupils is important for helping individuals as they navigate the rigours of university life. People have used Using the biopsychosocial model (BPS; Engel, 1977) to look at how biology (like physical, biochemical, and genetic factors), psychological (like individuality, conduct, and emotional state), and general societal elements (like financial, family, and cultural factors) can lead to mental disease and health problems. As they develop their capacity for higher-order thought and emotion, children's brains undergo significant changes (Kay, 2010).

Literature review

Lori E Boright et.al (2022) For each type of study, there were statistically significant

outcomes, programme interventions and methods, as well as evaluation tools. Results showed that 410 articles met all the criteria for inclusion (20 randomized controlled trials and 13 non-randomized controlled trials). Seventy-two percent of the studies had physical therapists as part of the provider team, and thirty-one percent had them as the only provider. Significant differences existed between the methods used and the ways that the results were measured. Most common procedures were cognitive tests twenty-one cases, sixteen home and vision exams, fifteen specialized educational modules, eight referrals to other providers or community programmes, and seven cases of motivational interviewing, and baseline balance assessments (n=30). Falls decreased in eight of thirteen six-and-a-half percent) randomized trials and in four out of five (8) quasi-experimental investigations. In six out of eleven (54.5%) controlled trials and all six quasi-experimental studies, balance and function got better. As a result, strength got better in four out of five controlled trials (75%), and three out of seven (43%) were positive. semi-experimental research. Although many programs helped older people avoid falling and keep their balance, when it came to tailored programmes to avoid falls, there was a lack of data on which evaluations and treatments were most effective.

Maaike van Gameren et.al (2021) according to prior studies conducted on older persons who had not yet developed frailty associated with implementation. How it works Multicenter randomized controlled trial with one blinded person. The target sample will include 256 residents of the community who are 65 years or older and not or almost frail and have a higher risk of falling. Due to its widespread usage in Dutch healthcare providers, the intervention group gets educational resources and physical fitness programmes that make up the In Balance intervention activities. Tai Chi-inspired exercises are used to improve balance and strength. Participants in the control group are given written general suggestions for physical activity. Key results include falling incidents and injuries sustained as a result incidences of falls over a 12-month follow-up. Examples of secondary outcomes include confidence,

activity levels, sociocultural factors, process evaluation, health status, and quality of life expenses, as well as physical performance and activity levels. For both the main and secondary outcomes, mixed model analyses will be done, and adults who are not frail or near frailty will be considered separately. Questions and Answers People over 65, society, and health insurance companies will all benefit greatly from this trial, which will show a Dutch programme that aims to reduce the number of falls by people's health and relationships.

Maria Bjerk et.al (2017) The process An RCT with a single blind is what this is called. Whoever is 67 years old or older, receives assistance from a family member or friend, is has fallen at least once in the recent year, can walk with or without help, and scored 23 on the Mini Mental State Exam or higher are eligible to participate. According to the Otago Exercise Program, the intervention group gets a 12-week plan that includes motivating phone calls and home visits. The people in the control group get the usual treatment. Healthcare-related quality of life (SF-36) is the main outcome. Daily activity, stability, gait speed, and strength of the leg's life are all considered secondary outcomes, nutrition, and how well people can avoid falling. A baseline measurement is taken, as well as measurements 3 months and 6 months after the intervention. The sample size for the main outcome is 150 people who will be divided into two equal groups at random, with an expected 15–20% dropout. Participants are being sought from six Norwegian municipalities.

Hesna Gürler et.al (2021) We developed a programme to avoid falls for several occasions 52 patients who were elderly and receiving fracture treatment. The program included doing risk assessments for falls, educating the public, and implementing structural changes to the residence. Final Product The initial assessment conducted prior to the 17.63 risk variables were identified during the execution of the programme to avoid recurring falls, with a standard deviation of 17. The number of risk factors dropped to 15.73 ± 3.19 in the first follow-up after the fall prevention programme was put into effect, and to 14.92 ± 3.06 in the second follow-up. In the first assessment, the

test results for knowledge were 5.50 ± 1.54 , but in the first follow-up, they rose to 6.09 ± 1.65 , 6.71 ± 1.53 in the second follow-up. Statistical analysis revealed significant differences between the follow-ups. Fifteen percent of people in the study fell at some point during the three months

Toni Rikkonen et.al (2023) Preventing injuries and falls may be possible through community exercise programs. On the other hand, there is a lack of evidence from practical trials showing that these strategies work. Methods We measured the impact on fall rates and injury severity of a year-long, free pass to the open-air athletic venues inside the city, which would include an introductory Tai chi and gym classes once a week for six months under supervision. Between 2016 and 2019, the average (standard deviation) duration of follow-up was 22.6 months (4.8 months). Using a random assignment method, 914 women (mean age Ages 76.5 (standard deviation 3.3, range 71.1-84.8) were classified into two groups: those who participated in the exercise intervention (n=457) and those who did not. We used fall diaries and short message service (SMS) queries sent every other week to compile our data set. Totalling 1,380 falls, 1,281 (92.8%) were

confirmed over the call to do the intention-to-treat study. Completed Good The workout group outperformed the control group saw a 14.3% decrease in the rate of falls (The incidence rate ratio (IRR) was 0.86 with a 95% confidence interval of 0.77 to 0.95). Medium injuries (n = 678, 52.8% of the total) and severe injuries (n = 61, 4.8% of the total) were caused by about half of the falls.

Research methodology

Supposedly, 188 people will take part in the study, with 94 at random to participate in the study's control or experimental group. A 30% attrition rate was estimated by the investigator throughout the study time. As a result, 265 community members participating in the research will be accompanied by mental health nurses from their adoptive towns. With 135 participants and 135 mental health nurses making up the subjects in the study and those serving as controls 130 participants and 130 mental health nurses. After 45 samples were removed, the research comprised 250 people: 123 in compared to 127 in the comparison group. Additionally, 250 mental health nurses provided treatment for these people.

Data analysis

Table 1: Evaluation of the experimental and control groups' levels of knowledge, sleep problems, and fall risk prior to the test N=250

Pre test		Group				Chi square test
		Experiment		Control		
		n=123		n=127		
		n	%	n	%	
Level of risk for fall	No risk	0	0.0	0	0.0	$\chi^2=1.11$
	Mild risk	21	19.4	16	14.3	d.f=1
	Moderate risk	84	77.8	92	82.1	P=0.57
	High risk	3	2.8	4	3.6	NS
Level of sleep Disturbances	Good sleep	0	0.0	0	0.0	$\chi^2=3.62$
	Mild	45	41.7	49	43.7	d.f=2
	Moderate	48	44.4	56	50.0	P=0.16
	Severe	15	13.9	7	6.3	NS
Level of Knowledge (Older adult)	Inadequate	88	81.5	90	80.4	$\chi^2=3.59$
	Moderate	17	15.7	22	19.6	d.f=2
	Adequate	3	2.8	0	0.0	p=0.16 NS

We may see the comparison of a group of individuals aged 65 and above in relation to pre-test sleep difficulties and knowledge level in table 1. risk for falls in both the controls and the experimental groups.

The pre-test for fall risk indicated that 84 out of 120 older adults (or 77.8%) in the research group were at a moderate risk. In a similar vein, 92 persons (8.21%) in the control group were considered to be somewhat vulnerable to falls. Neither group differed from the other statistically, according to the chi-square test. Based on these results, it is clear that the nurse investigator used randomization to keep the control and experimental groups homogeneous before administering FFNI.

Among the elderly individuals in the study group, 48 (or 44.4% of the total) reported moderate sleep problems on the pretest. In the control group, 50%, or 56 people, reported

moderate to severe sleep problems. Neither group differed from the other statistically, according to the chi-square test. This result demonstrated that the nurse researcher had used randomization to keep the experimental and control groups homogeneous before administering FFNI.

In the pretest, 88 individuals (or 81.5% of the total) in the experimental group shown an insufficient degree of understanding about the topic at hand. Likewise, in the control group, 90 people (or 80.4%) exhibited an insufficient degree of knowledge. Neither the experimental group nor a statistically significant difference was found in the control group according to the chi-square test. Based on these results, it is clear that the nurse investigator used randomization to keep the control and experimental groups homogeneous before administering FFNI.

Table 2: Evaluation of the experimental and control groups' levels of fall risk before and after the intervention N=250

Group	Level of risk for fall	Pretest		Posttest1		Posttest2		Posttest3		Chi square test
		N	%	N	%	N	%	N	%	
Experiment n=123	No risk	0	0.0	0	0.0	0	0.0	0	0.0	$\chi^2=138.26$ d.f=6 P=0.001*** Significant
	Low risk	21	19.4	23	21.3	66	61.1	90	83.3	
	Moderate risk	84	77.8	85	78.7	42	38.9	16	16.7	
	High risk	3	2.8	0	0.0	0	0.0	0	0.0	
Control n=127	No risk	0	0.0	0	0.0	0	0.0	0	0.0	$\chi^2=0.06$ d.f=6, P=0.99 Not significant
	Low risk	16	14.3	16	14.3	16	14.3	16	14.3	
	Moderate risk	92	82.1	92	82.1	92	82.1	92	82.1	
	High risk	4	3.6	4	3.6	4	3.6	4	3.6	

The risk of falls among the elderly, both before and after the intervention, is compared in Table 2. The experimental group did not have a significant risk of falling at the first post-test; nevertheless, 85 people (78.7% of the total) had a moderate risk. While 66 (61.1%) of the elderly had a low risk of falling in post-test 2 and 90 (83.3%) in post-test 3, Nobody in the third post-test was at high risk.

There was a moderate risk of falling (92.1%), a low risk (14.3%), and a high risk (3.6%) in the control group before and after tests 1, 2, and 3,

respectively. The decrease in fall risk among the control group's elderly did not vary.

Furthermore, there was no statistically significant difference in the control group as shown by the chi-square test. However, after tests 1, 2, and 3, the older persons in the experimental group showed a statistically significant reduction in the chance of falling, indicating that the risk of falls was considerably decreased with the family-focused nursing intervention.

Table 3: Evaluation of the experimental and control groups' levels of fall risk before and after the intervention N=250

Level of risk for fall		Group				Chi square test
		Experiment n=123		Control n=127		
		No	%	No	%	
Pretest	No risk	0	0.0	0	0.0	$\chi^2=1.11$ d.f=2 P=0.57 NS
	Mild risk	21	19.4	16	14.3	
	Moderate risk	84	77.8	92	82.1	
	High risk	3	2.8	4	3.6	
Posttest 1	No risk	0	0.0	0	0.0	$\chi^2=5.46$ d.f=2 P=0.07 NS
	Mild risk	25	21.3	16	14.3	
	Moderate risk	82	78.7	92	82.1	
	High risk	0	0.0	4	3.6	
Posttest 2	No risk	0	0.0	0	0.0	$\chi^2=53.08$ d.f=3 P=0.001*** S
	Mild risk	66	61.1	16	14.3	
	Moderate risk	42	38.9	92	82.1	
	High risk	0	0.0	4	3.6	
Posttest 3	No risk	0	0.0	0	0.0	$\chi^2=102.65$ d.f=2 P=0.001*** S
	Mild risk	90	83.3	16	14.3	
	Moderate risk	16	16.7	92	82.1	
	High risk	0	0.0	4	3.6	

The results are deemed significant when the p-value is less than 0.01 or 0.001, and when the p-value is less than 0.05.

Table 3 displays the results of the comparison between the control group and the experimental group in terms of fall risk for older individuals

before and after the test. Nearly eighty-four percent of the experimental group showed a moderate risk of falling during the pre-test. Fall risk was moderate for 92 people (82.1% of the control group).

Among those who took part in the study's experimental group, 25 (21.3%) were found to have a moderate risk of falling at the post-test 1 level, compared to 16 (14.3%) in the control group. It was initially challenging for the researcher to instill the habit of exercising and making changes to the home environment in the older folks.

At the second posttest level, it was clear that 92(82.1%) people in the control group had a moderate risk of falling, while 42(38.9%) people in the experimental group did the same. A substantial but statistically significant decrease in the chance of falling has been seen at the posttest 2 level.

The third posttest found that no older participants were at high risk of falling, whereas 82.1% of the control group (92 people) were at intermediate risk.

Furthermore, there was no statistically significant change from the baseline to the follow-up assessment, the control group's chance of falling decreased periods, as shown by the chi-square test. The experimental group, however, failed to demonstrate a change at the post-test 1 level that was statistically significant. A p-value of less than 0.001 at the 2 and 3 post-test levels demonstrated, however, providing nursing care that is centered on the family substantially altered the risk of falls in the elderly.

Table 4: Comparison between pretest and posttest amount of sleep disruption in the control and experimental groups of older persons N=250

Group	Level of sleep Disturbance	Pretest		Posttest 1		Posttest 2		Posttest 3		Chi square test
		n	%	N	%	n	%	n	%	
Experimental n=123	Good	0	0.0	0	0.0	12	11.1	21	19.4	$\chi^2=76.64$ d.f=6 P=0.001*** Significant
	Mild	45	41.7	62	57.4	65	60.2	69	63.9	
	Moderate	48	44.4	39	36.1	25	23.1	18	16.7	
	Severe	15	13.9	7	6.5	6	5.6	0	0.0	
Control n=127	Good	0	0.0	0	0.0	0	0.0	0	0.0	$\chi^2=0.17$ d.f=6 P=0.96 Not significant
	Mild	49	43.8	49	43.8	50	44.6	50	44.6	
	Moderate	56	50.0	56	50.0	56	50.0	56	50.0	
	Severe	7	6.2	7	6.2	6	5.4	6	5.4	

The levels of sleep disruptions experienced by the control and experimental groups of older individuals before and after the test are compared in Table 4. Within the comparison group, 48 people (44.4%) experienced moderate sleep interruptions, 45 people (41.7%) mild disturbances, and 15 people (13.9%) severe disturbances before the test. In comparison, 39 participants (36.1% of the total) reported moderate sleep disruptions and 7 participants

(6.5%) reported disturbing sleep patterns in the preliminary research. After the second test, 12 older adults (11.1%) said they slept well, 25 (23.1%) said they showed signs of mild sleep disruptions, whereas 6 individuals (5.6%) reported experiencing severe sleep abnormalities. Among those who took the third post-test, 18.7% reported significant sleep disruptions, 63.9% reported mild disturbances,

and 19.4% reported satisfactory sleep quality. Restful sleep was maintained by everybody. Before and after tests 1, 2, and 3, 50% of the control group had moderate sleep disruptions, 43.8 % experienced mild disturbances, and 6.2% experienced severe disturbances. The control group of older persons did not show any

improvement in the lowering of sleep disruption levels.

Additionally, the chi-square test verified that the control group did not differ statistically. At each of the three post-tests, the experimental group demonstrated a decreasing degree of sleep disruptions.

Table 5: Examining the change from the control to the experimental group in terms of the frequency of sleep disruptions before and after the study N=250

Level of sleep disturbances (Quality of sleep)		Group				Chi square test
		Experiment n=123		Control n=127		
		n	%	n	%	
Pretest	Good sleep	0	0.0	0	0.0	2 $\chi^2 = 3.62$ d.f=2 P=0.16
	Mild	45	41.7	49	43.8	
	Moderate	48	44.4	56	50.0	
	Severe	15	13.9	7	6.2	
Posttest1	Good sleep	0	0.0	0	0.0	2 $\chi^2 = 4.49$ d.f=2 P=0.11
	Mild	62	57.4	49	43.8	
	Moderate	39	36.1	56	50.0	
Posttest2	Good sleep	12	11.1	0	0.0	2 $\chi^2 = 25.75$ d.f=2 P=0.001***
	Mild	65	60.2	50	44.6	
	Moderate	25	23.1	56	50.0	
	Severe	6	5.6	6	5.4	
Posttest3	Good sleep	21	19.4	0	0.0	2 $\chi^2 = 49.49$ d.f=2 P=0.001***
	Mild	69	63.9	50	44.6	
	Moderate	18	16.7	56	50.0	
	Severe	0	0.0	6	5.4	

The results are deemed significant when the p-value is less than 0.01 or 0.001, and when the p-value is less than 0.05.

Table 5 compares the levels of sleep disruptions how well the test subjects slept with relation to the control group both before to and after the intervention. The participants in both groups were older people. The experimental group exhibited moderate levels of sleep disruptions in 44.4% of the cases in the pretest. In the control group, 56 people (or 50.0% of the total) reported moderate to severe sleep disruptions.

On the first posttest, 62 people (57.4% of the total) in the experimental group reported modest sleep problems, compared to 49 people (43.8% of the total) in the control group.

After the second posttest, 65 people (or 60.2% of the total) in the experimental group reported minor sleep problems, compared to 49 people (or 43.8% of the total) in the control group.

While 56 (50.0%) of the control group's older persons were still experiencing significant sleep disruptions at the 3-posttest level, 21 (19.4%), 69 (63.9%), and 18 (16.7%) Members of the age group who participated in the study

reported several degrees of sleep disruptions: good, mild, and moderate.

The sleep-in control group's pre- and post-test scores were not significantly different, according to the chi-square test. In contrast, the experimental group showed a very significant difference on post-test 2, indicating that the family-focused nursing intervention significantly reduced sleep interruptions and enhanced the quality of sleep for older individuals. After the first test, no statistically significant difference was found.

Conclusion

Assessing older individuals' and caregivers' understanding of functional health concerns and the major focus of this study's research was on nursing interventions with a focus on families. Use of FFNI in any context will aid in promoting active aging, according to the study's results and the researcher's recommendations.

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