

Music Therapy and EFT: Integrative Medicine on Exam Anxiety in Turkish Nursing Students

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STUDY PROTOCOL

The literature highlights the importance of stress reduction for allowing students to maximize their learning of practical skills in the vocational education process. Techniques such as music therapy, cognitive therapy, emotional freedom techniques (EFT), breathing techniques, mind cleansing, aromatherapy, and relaxation of muscles have been used to reduce the anxiety levels of nursing students. However, to the best of our knowledge, no study has applied these interventions to reduce situational anxiety in nursing students before an OSCE or no study has compared these interventions.

Taking these as a starting point, this paper aims to determine the effects of music therapy and EFT on situational anxiety and vital signs in nursing students before an OSCE and to compare these two methods. It is thought that through the results of the study, these techniques, which are easy, safe, and inexpensive to implement, can be used to reduce nursing students' test anxiety and thus contribute to the improvement of their performance.

This study was conducted with 90 volunteering students studying at the Faculty of Health Sciences, Department of Nursing, at a foundation university in Medipol University. The data was collected prior to the OSCE on May 31, 2017. Students included in the study were required to meet the eligibility criteria of (a) being 18 years old or above, (b) taking the theoretical course of Nursing Principles I and II, and (c) entering the OSCE on May 31 as part of the Nursing Principles Course. All students taking the exam were included in the study (n = 90). Using the website random.org, a randomly ordered class list was prepared with the student numbers in the classroom list. According to the newly created list, students were notified in writing one day before the exam about what time they were expected to arrive before the exam. Students who arrived on the day of the exam were assigned to the music therapy and EFT groups and the control group (Figure 1). Six students who did not volunteer to participate in the study, who arrived late, or who did not turn up, were not included in the study. Each group consisted of 15 students for more efficiency due to the insufficient number of

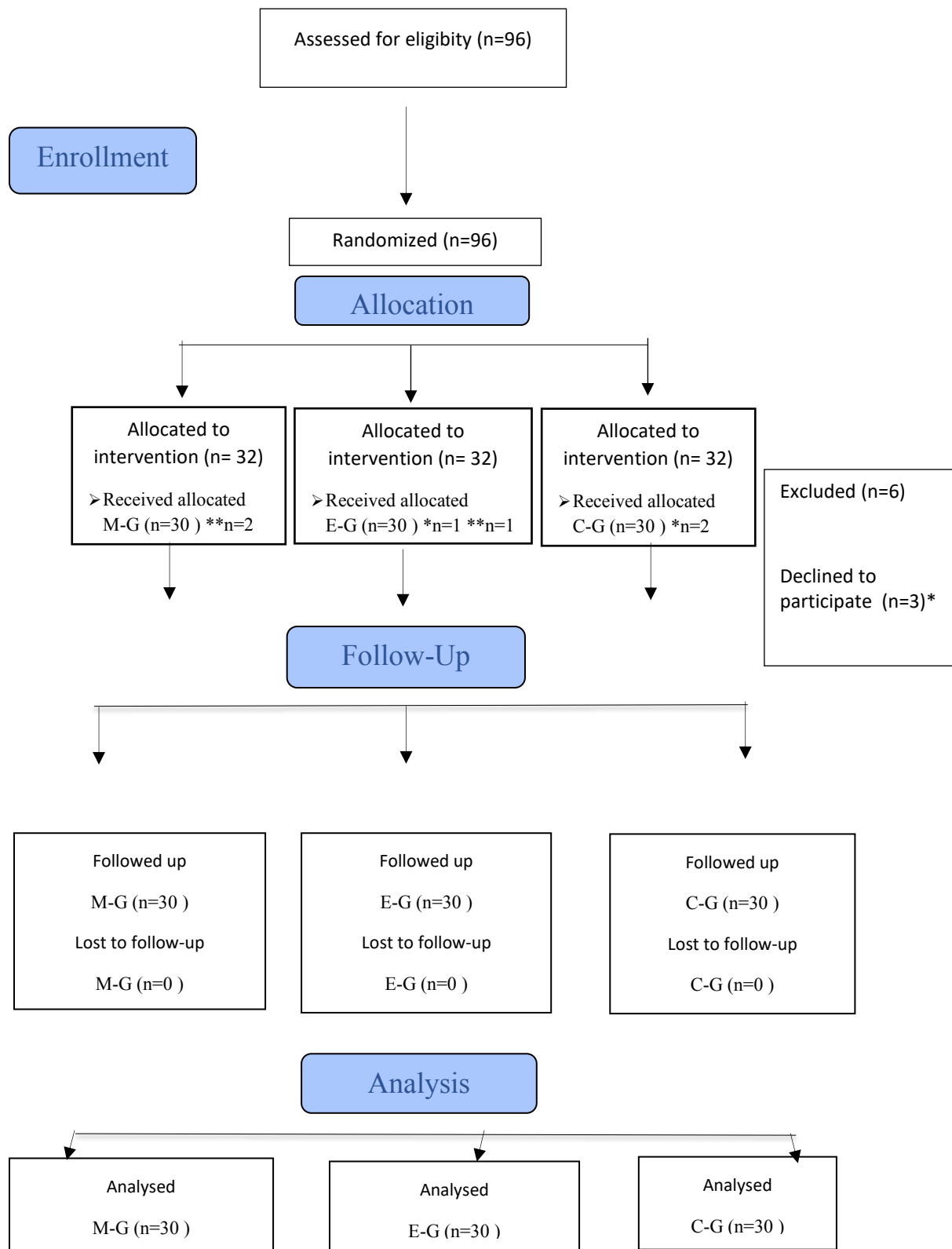
supervisors to monitor them. The flow diagram created by the researchers was based on the Consolidated Standards of Reporting Trials (CONSORT) Checklist (Figure 1).

According to a normal exam procedure, students show up in the place where the exam is held according to their student numbers at a time designated by the teacher. Before being summoned to the exam, they are required to wait in a room. In the study, however, during the waiting time, music therapy and EFT were applied to decrease students' situational anxiety. Since researchers had received training on music therapy and EFT, these two interventions were applied. Accordingly, the study had two experimental groups and one control group. According to the randomly ordered class list, all students were notified in writing about what time they were required to arrive before the exam. All students who arrived on the specified time were assigned to one of the all groups. The students were taken to a 90m² practice room. Each group was briefed for five minutes before obtaining their consent. The researchers and two assistants measured students' vital signs. Five digital blood pressure monitors were used to measure the blood pressure, and three pulse oximeters were utilized to measure pulse and SpO₂. The devices were calibrated before the measurements.

The students were asked to fill out the Student Identification Form and the Situational Anxiety Scale. Afterwards, the interventions (music therapy and EFT) were applied for about 15 minutes. The interventions were applied by the authors, who are experts in their fields. Following the interventions, the researchers remeasured students' vital signs and asked them to fill out the Situational Anxiety Scale again. For the control group, pre-measurements were taken, 15 minutes of free time was given, and then post-measurements were taken.

Once each intervention was applied, the students were taken immediately to the OSCE rooms to prevent them from contacting each other. There were no disruptions to the exam flow. The whole process lasted approximately six hours for this study. No interaction was allowed between students leaving the exam and entering the exam.

Figure 1. Study Protocol



Note. n: Number of participants, M-G: Music therapy group, E-G: EFT (Emotional Freedom Techniques) Group C-G: Control group

Data Analysis

Licensed SPSS 16.0 (Statistical Package for the Social Sciences for Windows, Version 16.0) was used for the data analysis. The results were evaluated within 95% confidence intervals, at a significance level of $p < .05$. Nominal variables were rated for frequency and percentage; ordinal variables were rated for the mean, and standard deviation. Baseline demographic information among the groups was analyzed using the Kruskal Wallis H test and Mann-Whitney U test. Due to the non-normal distribution, the Kruskal Wallis H test was used to compare pre-post intervention (or free time for control groups) anxiety, separately, between the three groups and the Wilcoxon Signed-Rank test was used to compare pre/post anxiety and vital signs within groups. Also, the Wilcoxon Signed Rank test was conducted to compare the pairwise groups within 95% confidence intervals.

Results

Table. Distribution of descriptive characteristics of students by groups

Groups	Music		EFT		Control		χ^2 / Z <i>p</i>
Characteristics	Therapy (n = 30)		(n = 30)		(n = 30)		
	N	%	n	%	n	%	
Age							
Mean±SD	18.9 ± 0.88		19.1 ± 0.88		19.5 ± 1.07		1.095 .778*
Gender							
Female	27	90.0	23	76.7	24	80.0	3.163
Male	3	10.0	7	23.3	6	20.0	.367**
Place of Residence							
With parents	23	76.7	24	80.0	24	80.0	.301 .960*
Student dormitory	4	13.3	5	16.7	5	16.7	
With relatives	3	10.0	1	3.3	1	3.3	
Alone	-	-	-	-	-	-	
Economic status							
Poor	-	-	1	3.3	-	-	3.084 .379**
Average	19	63.3	12	40.0	15	50	
Good	11	36.7	17	56.7	15	50	
Very good	-	-	-	-	-	-	
Total	30	100	30	100	30	100	

Note. *: Kruskal-Wallis H test, **: Mann-Whitney U test, n: Number of participants, %: Percentage, SD: Standard Deviation, EFT: Emotional Freedom Techniques, $p < .05$.

Table. Comparison of score averages from the Situational Anxiety Scale Pre- and Post applications according to groups

Groups	Music Therapy (n = 30)	EFT (n = 30)	Control (n = 30)	Test	
	Median, 25 th /75 th percentile	Median, 25 th /75 th percentile	Median, 25 th /75 th percentile	χ^2^*	<i>P</i>
Before	55,00 49,75/60,75	56,5, 49,5/61,25	55,00 41,75/59,00	.284	.868
After	44,50 41,75/49,00	43,00 34,75/51,25	56,00 44,75/59,25	8.328	.016
<i>z</i>**	-3.850	-3.212	-.733		
<i>p</i>	.000	.001	.464		

Note. *: Kruskal-Wallis H test, **: Wilcoxon Signed Rank test, n: Number of participants, SD: Standard Deviation, $p < .05$.

Table. Comparison of vital signs pre- and post applications of groups

Groups	Music Therapy	EFT	Control
	(n = 30)	(n = 30)	(n = 30)
	Pre / Post	Pre / Post	Pre / Post
	Median	Median	Median
Systolic BP	110 / 110	116.5 / 110	110 / 114
z*	-1.782	-.257	-.415
p	.075	.797	.678
Diastolic BP	70 / 65	69.5 / 70	70 / 72
z*	-.811	-.876	-.787
p	.417	.381	.431
Pulse	89.5 / 88.5	86 / 83	89.5 / 89
z*	-1.540	-2.493	-.530
p	.124	.013	.596
SpO₂	98 / 98	98 / 98	98 / 98
z*	-2.360	-.717	-.180
p	.018	.473	.857

Note. *: Wilcoxon Signed Rank test, n: Number of participants, EFT: Emotional Freedom Techniques, BP: Blood Pressure, $p < .05$.

Conclusion

In conclusion, it was observed that music therapy and EFT were effective in reducing nursing students' test anxiety before the OSCE. Also, it was found that the methods had no superiority over one another. After the music therapy and EFT session, systolic and diastolic blood pressure and pulse averages of the students decreased, and the SpO2 rate increased. Therefore, we can say that these interventions, which are easy and safe to apply, can reduce test anxiety, which, in turn, can lead to an increase in students' test performance. However, it must also be noted that there is a need for larger randomized controlled trials comparing music therapy with EFT as an intervention to reduce physiological parameters. We believe that the results of this study will contribute to the determination of effective methods for reducing test anxiety. Finally, we recommend that nursing educators acquire competency in integrative methods and apply these methods to help their students suffering from test anxiety.