Effect of Guided Imagery, Sports Activity & Composite Training in the Management of Nomophobia

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KEYWORDS	ABSTRACT
Nomophobia, Guided imagery, Sports activity, College Students, Intervention	Nomophobia, the fear of being without a mobile phone, has become a prevalent issue in modern society. This study aimed to investigate the effectiveness of three intervention approaches in managing nomophobia: guided imagery, sports activity, and composite training. For data Self-made nomophobia questionnaires were applied on 200 college student samples aged 18-24, out of which 80 nomophobic students were selected. Participants were randomly assigned to one of the three intervention groups or a control group. The guided imagery group engaged in relaxation techniques and visualization exercises, while the sports activity group participated in physical activities. The composite training group received a combination of guided imagery and sports activities. The control group did not receive any intervention. Nomophobia levels were assessed using the Nomophobia Questionnaire (NMP-Q) before and after the interventions. Results showed that all three intervention groups experienced a significant reduction in nomophobia levels compared to the control group. The sports activity group demonstrated the most substantial decrease in nomophobia scores. The findings suggest that a combined approach of guided imagery and sports activity may be the most effective in managing nomophobia among college students aged 18-24. These insights contribute to developing targeted strategies to address the growing concern of nomophobia and its potential negative impacts on the mental health and well-being of young adults.

1. Introduction

Nomophobia, the fear of being disconnected from one's mobile phone, has emerged as a significant psychological concern in the 21st century (King et al., 2013; Yildirim & Correia, 2015). Characterized by anxiety when individuals cannot access or utilize their phones (Bivin et al., 2013), nomophobia disrupts daily life by hindering concentration and causing general distress (Dixit et al., 2010). Nomophobia, or the persistent and excessive fear of new situations or experiences, can significantly impact an individual's quality of life and overall well-being (Karatas & Gökçakan, 2018). This anxiety disorder often manifests as avoidance behavior, leading to missed opportunities for personal growth and development (Butzer et al., 2015). Effective management strategies are crucial to help individuals with nomophobia overcome their fears and embrace new experiences with greater confidence and resilience. Recent research has explored the potential benefits of various therapeutic approaches, including guided imagery, sports activity, and composite training, in addressing nomophobia. Guided imagery, a mind-body technique that involves creating mental images to promote relaxation and positive visualization, has shown promise in reducing anxiety and fostering a more optimistic mindset towards novel situations (Nauman & Anderson, 2021).

Engaging in sports activities, which often involve learning new skills and adapting to changing environments, may also contribute to desensitization and increased self-assurance (Schinke et al., 2020). Composite training, which combines cognitive-behavioral therapy, exposure therapy, and relaxation techniques, offers a comprehensive approach to managing nomophobia (Cuijpers et al., 2016). By addressing the cognitive, behavioral, and physiological aspects of the disorder, this multifaceted approach aims to challenge negative thought patterns, gradually expose individuals to feared situations, and equip them with effective coping strategies (Helbig-Lang & Petermann, 2010). This paper aims to provide a comprehensive overview of the potential effects of guided imagery, sports activity, and composite training in the management of nomophobia. Through a systematic review of relevant literature and empirical studies, we will explore the mechanisms underlying these therapeutic approaches, their efficacy, and practical implications for individuals struggling with this debilitating anxiety disorder. Ultimately, by evaluating the available evidence and identifying

promising avenues for further research, this paper seeks to contribute to the ongoing efforts to develop effective interventions and enhance the quality of life for individuals affected by nomophobia. This research has the potential to contribute significantly to the growing body of knowledge on nomophobia treatment. By evaluating the effectiveness of these novel interventions, we can expand the treatment options available for individuals struggling with this increasingly common phobia. Dharmawardene et al. (2021) evaluated the effectiveness of guided imagery in reducing anxiety and stress related to nomophobia. The review found that guided imagery techniques, particularly those involving relaxation and visualization exercises, can help reduce anxiety levels and improve coping mechanisms in individuals with nomophobia. Lee and Kim (2020) examined the use of guided imagery techniques in reducing anxiety and stress related to technology addiction, including nomophobia.

The review highlighted that guided imagery, when combined with other relaxation techniques like deep breathing exercises, can effectively reduce physiological arousal and cognitive symptoms associated with technology-related anxiety disorders. Kaur and Singh (2020) examined the potential role of guided imagery in alleviating symptoms of nomophobia. The authors discussed several studies that reported positive outcomes, such as reduced anxiety and stress levels, improved emotional regulation, and better coping strategies, when guided imagery techniques were incorporated into treatment programs for individuals with nomophobia. Lee et al. (2019) focused on mindfulness-based interventions for problematic smartphone use, which often includes nomophobia as a component. The review found that mindfulness-based approaches, such as guided imagery and meditation, showed potential in reducing smartphone dependence, anxiety, and stress related to nomophobia. However, the authors cautioned that most studies had small sample sizes and lacked long-term follow-up, highlighting the need for larger and more robust studies.

Choi et al. (2021) evaluated the impact of physical activity interventions on various forms of behavioral addictions, including nomophobia. The analysis found that engaging in regular exercise or sports activities can significantly reduce the severity of addiction symptoms and improve overall mental well-being. The authors suggested incorporating physical activity programs as part of a comprehensive treatment approach for nomophobia and other behavioral addictions. Przybylski et al. (2019) explored the relationship between physical activity and nomophobia. The authors analyzed several studies that suggested a negative correlation between physical activity levels and nomophobia severity. Individuals who engaged in regular exercise or sports activities reported lower levels of nomophobia compared to those with a sedentary lifestyle. The review proposed that promoting physical activity could be a viable approach for managing nomophobia, as it may provide a healthy distraction and enhance overall well-being. Gezgin et al. (2018) examined the relationship between nomophobia and physical activity levels among university students. The results suggested that individuals who engage in regular physical activity or sports have lower levels of nomophobia compared to those with a sedentary lifestyle. The authors proposed that engaging in physical activities could serve as a potential coping strategy for nomophobia.

Yildirim and Correia (2022) examined the effectiveness of multimodal interventions for nomophobia, including composite training programs that combine cognitive-behavioral therapy (CBT), mindfulness-based approaches, and psychoeducation. The review found that these integrated programs can effectively reduce nomophobia symptoms and improve coping strategies. Gezgin et al. (2019) investigated the effectiveness of a composite training program that combined cognitive-behavioral therapy (CBT), mindfulness-based stress reduction (MBSR), and psychoeducation for managing nomophobia. The program included techniques such as cognitive restructuring, exposure therapy, and mindfulness exercises. The results showed significant reductions in nomophobia levels and improvements in overall well-being among participants after completing the training program. Chóliz and Lamas (2017) explored various psychological interventions for problematic smartphone use, which often involves nomophobia. The review found that mindfulness-based interventions,

including guided imagery and meditation techniques, showed promising results in reducing anxiety and improving emotional regulation related to smartphone overuse and nomophobia.

Statement

The purpose of the study is to analyze the efficacy of three interventions – guided imagery, sports activities, and composite training (a combination of guided imagery and sports activities) – in the management of nomophobia among college students. The study will explore the impact of these interventions on reducing the levels of nomophobic symptoms, anxiety, and dependence on mobile phones.

Objectives

➢ To assess the effects of selected treatment programs i.e., guided imagery, sports activities, and composite training in the management of nomophobia.

Hypothesis

➢ There exists a significant difference of selected training programs i.e., guided imagery, sports activities, and composite training in the management of nomophobia.

2. Materials And Methods

Research Design:

The study will employ quantitative research design with a pretest-posttest control group experimental approach. This design will allow for the assessment of the effectiveness of the interventions by comparing the pretest and posttest scores of the participants across different groups.

Sample:

The study will involve a sample of college students of the 18-24 years age group from various disciplines and academic levels. The participants will be recruited through a combination of convenience and purposive sampling techniques. Self-made nomophobia questionnaires were applied on 200 samples out of which 80 nomophobic students were selected. The participants were equally and randomly assigned into three treatment groups and one control group consisting of 20 subjects in each group. There are four experimental groups namely

1. Guided imagery group

2. Sports activities group

3. Composite training group (guided imagery + sports activities)

4. Control group (no intervention)

Tools:

The investigators created their own questionnaire in Indian context called the Nomophobia Questionnaire (NMP-Q) to study nomophobia. The NMP-Q has 25 questions that participants answer on a scale from 1 to 7. It measures four different factors related to nomophobia and gives an overall score. The total score can range from 25 to 175. Higher scores mean a person has a stronger level of nomophobia, while lower scores indicate a weaker level.

Statistical Techniques: In order to test the objectives and hypothesis the researcher used Descriptive statistics (mean and standard deviation), ANCOVA and post-hoc test using least square difference (LSD).

3. Result And Discussion

1. Result and Interpretation pertaining to Nomophobia.

Table 1.1 Mean and Standard Deviation measuring Nomophobia among different
Treatment groups during Pre and Post-testing

Measure: Nomophobia					
Treatment Groups	N	Pre-test Mean	SD	Post-test Mean	SD
Guided Imagery	20	134.50	14.05	86.35	14.63
Sports Activity	20	133.65	13.69	85.90	17.43
Composite	20	133.40	13.64	86.45	8.46
Control	20	132.65	13.17	101.05	18.30

Table 1.1 Present the mean and standard deviation values from pre and post-tests among the four treatment groups (Guided Imagery, Sports Activity, Composite, and Control) used to assess the management of nomophobia. The given observed Mean and SD values are:

Pre-test Mean: Guided Imagery 134.50, Sports Activity 133.65, Composite 133.40, and Control 132.65. **Pre-test SD:** Guided Imagery 14.05, Sports Activity 13.69, Composite 13.64, and Control 13.17. **Post-test Mean:** Guided Imager 86.35, Sports Activity 85.90, Composite 86.45, and Control 101.05 **Post-test SD**: Guided Imagery 14.63, Sports Activity 17.43, Composite 8.46 and Control 18.30 respectively.

Figure 1.1

Graphical Presentation of Pre and Post-test Means of Guided Imagery, Sports Activity, Composite and Control group measuring in the management of Nomophobia
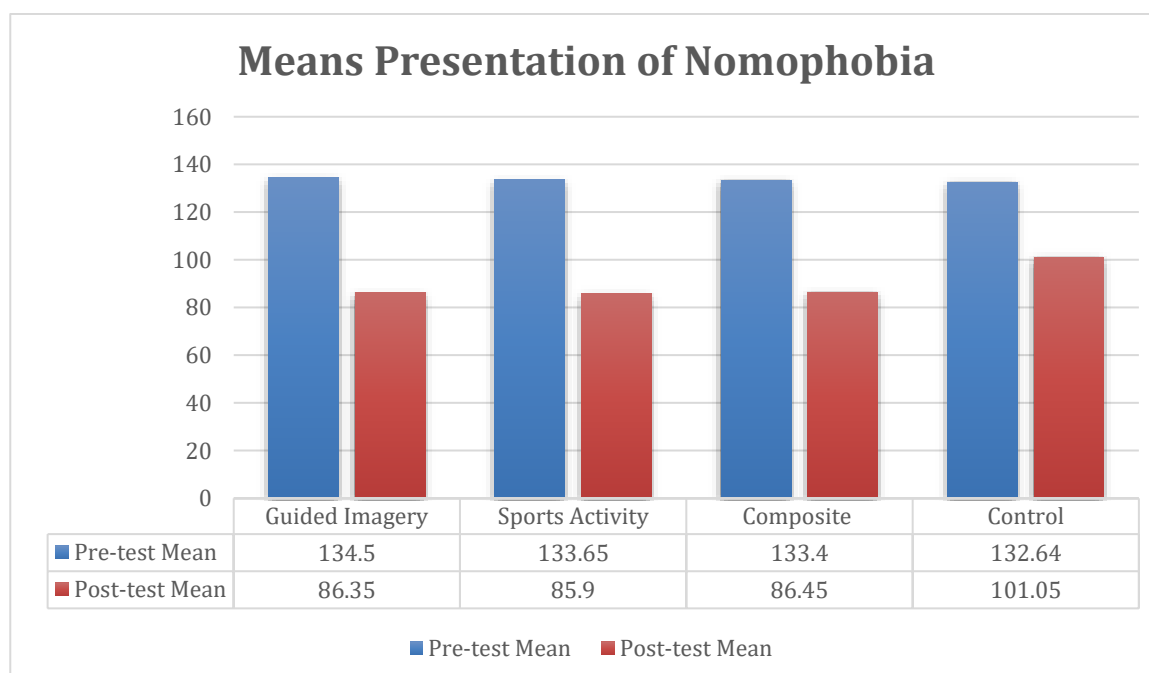

	Guided Imagery	Sports Activity	Composite	Control
Pre-test Mean	134.5	133.65	133.4	132.64
Post-test Mean	86.35	85.9	86.45	101.05

Table- 1.2 . Levene's Test for the assess the equality among variables

Levene's Test of Equality of Error Variances			
Dependent Variable: Post test			
F	Df1	Df2	Sig.
2.955	3	76	.038

Table 1.2 Levene's statistics (0.038) were significant at 0.05 level. Adjusted post-test means of experimental groups (Guided Imagery, Sports Activity, Composite) and Control group for self-knowledge were compared using ANCOVA.

Table 1.3. Analysis of Co-Variance for Three Experimental groups and one Control group on Nomophobia

Source	Sum of Squares	Df	Mean Square	F	(p-value) Sig.
Pre	723.235	1	723.235	3 .222	.077
Treatment	3173.325	3	1057.775	4.713	.005

Note: p-value < .05 indicates significant difference

*Indicates significant difference

Table 1.3 The F-value compared adjusted post-test nomophobia means across groups. With p=0.005 (significant at 0.05 level), the null hypothesis of no difference between adjusted means was rejected. The alternative hypothesis that the training programs (Guided Imagery, Sports Activity, Composite, Control) differed in managing nomophobia was accepted. Post-hoc comparisons on the adjusted means were conducted. The results are shown in **Table 1.4**

Table 1.4 Post-hoc comparison of differences between the Adjusted Post-tests Paired Means of Experimental groups and Control group measuring Nomophobia

Pair wise Comparisons: Nomophobia			
(I) Treatment	(J) Treatment	Mean Difference (I-J)	Sig. (p)
Guided Imagery	COMPOSITE	-1000	1.000
	CONTROL	-14.7000*	.016
	SPORTS ACTIVITY	.4500	1.000
Sports Activity	COMPOSITE	-.5500	.999
	CONTROL	-15.1500*	.012
Composite	CONTROL	-14.6000*	.017

Note: p< .05 indicates significant difference

* Indicates significant difference

Comparison of groups with Significant Difference:

From Table 1.4, p-values for mean differences were significant (p<0.05) for Guided Imagery vs Control (p=0.016), Sports Activity vs Control (p=0.012), and Composite vs Control (p=0.017).

Conclusions

- Significant difference in adjusted means between Guided Imagery and Control.

- Significant difference in adjusted means between Sports Activity and Control.

- Significant difference in adjusted means between Composite and Control.

Comparison of Groups with Insignificant Difference:

From Table 1.4, p-values for mean differences were non-significant (p>0.05) for Guided Imagery vs Sports Activity (p=1.000), Guided Imagery vs Composite (p=1.000), and Sports Activity vs Composite (p=0.999).

Conclusions

- No significant difference in adjusted means between Guided Imagery and Sports Activity groups.

- No significant difference in adjusted means between Guided Imagery and Composite groups.

- No significant difference in adjusted means between Sports Activity and Composite groups.

Table 1.5. Adjusted Means among different Treatment groups measuring Nomophobia

| Groups | Dependent Variable: Post-test | | 95% Confidence Interval | |
	Mean	Std. Error	Lower Bound	Upper Bound
Guided Imagery	86.565a	3.352	79.887	93.242
Sports Activity	85.923a	3.350	79.249	92.596
Composite	86.416a	3.350	79.743	93.090
Control	100.846a	3.352	94.169	107.524

Table 1.5 The adjusted means in ascending order were: Guided Imagery (86.56), Sports Activity (85.92), Composite (86.41), and Control (100.84). All treatments significantly differed from Control (p<0.05), indicating equal effectiveness in reducing nomophobia compared to Control. However, each treatment group's mean significantly differed from Control's mean. The Sports Activity (85.92) and Composite (86.41) groups had lower adjusted means than Guided Imagery (86.56), suggesting they were more effective. Sports Activity had the lowest mean, making it the most effective treatment, while Control was the least effective in reducing nomophobia

5. Conclusion

Our study, "effect of guided imagery, sports activity & composite training in the management of nomophobia," reveals that all three interventions significantly reduced nomophobia in undergraduate students compared to the control group. Sports activities (M = 85.92) emerged as the most effective, closely followed by the composite program (M = 86.41) and guided imagery (M = 86.56), all markedly lower than the control group (M = 100.84). The efficacy of sports aligns with Dorak et al. (2012), who found that sports contribute to both physical and mental well-being. This effectiveness may stem from technology distraction, social interaction, stress reduction (Sharma et al., 2006), and better time management. Guided imagery's impact suggests its potential in managing smartphone-related anxiety, consistent with Utay and Miller's (2006) work on mental relaxation techniques. These findings implore universities to integrate sports and mindfulness practices into student life. However, sample limitations and the need for longitudinal studies, as emphasized in similar research (e.g., Dixit et al., 2010), indicate areas for future research. In conclusion, this study highlights promising strategies for balancing digital connectivity with real-world engagement, crucial in today's

smartphone-dominated student life.

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