



"IMPACT OF LIGHT MUSIC AS AN ADJUNCT TO PHARMACOTHERAPY IN DEPRESSION: A COMPARATIVE CLINICAL STUDY"

Psychiatry

Sankalp S. Nirmal* Assistant Professor, Psychiatry, SKNMC & GH, Narhe, Pune *Corresponding Author

Shriyash B. Pinglikar

Assistant Professor, Radiology SKNMC & GH, Narhe, Pune

Nikhil S. Mankar Assistant Professor, Psychiatry, BAVMC, Pune *Corresponding Author

ABSTRACT

Background: Depression is a prevalent mental health disorder with various treatment options. Pharmacotherapy remains the primary line of treatment; however, complementary therapies such as music therapy have shown promise in improving outcomes. This study investigates the impact of light music as an adjunct to pharmacotherapy in patients with depression, comparing outcomes between a group receiving pharmacotherapy with light music and a group receiving pharmacotherapy alone. **Methods:** A randomized controlled study was conducted with 60 patients diagnosed with depressive disorder. Participants were divided into two groups: Group A (n=30) received pharmacotherapy combined with light music, while Group B (n=30) received pharmacotherapy alone. The Hamilton Depression Rating Scale (HAM-D) was used to assess the severity of depression at baseline and at the end of three weeks. Additional variables including demographic characteristics, past psychiatric history, stressors, and interpersonal relationships were also examined. **Results:** Group A showed a significant reduction in HAM-D scores compared to Group B at the end of three weeks (5.77 ± 2.28 vs. 7.27 ± 2.65 , $p=0.0222$). In Group A, SSRIs were associated with a greater reduction in HAM-D scores compared to SNRIs (4.77 ± 1.34 vs. 8.50 ± 2.13 , $p<0.001$). Demographic factors, including gender and family type, influenced outcomes, with males and those in nuclear families showing a stronger response to the intervention ($p=0.007$). Participants in Group A listening to recent film music showed a lower HAM-D score compared to those preferring old film music or devotional songs by the end of the study ($p=0.057$). **Conclusion:** Light music as an adjunct to pharmacotherapy significantly enhances treatment outcomes in patients with depression. The findings suggest that incorporating music therapy into standard care protocols could offer a novel, non-invasive, and cost-effective approach to managing depression. Future studies should further explore the mechanisms underlying the therapeutic effects of music.

KEYWORDS

INTRODUCTION:

Depression stands as one of the leading causes of disability worldwide, impacting millions of individuals across all age groups^[1]. Alarmingly, 34% of adolescents globally, particularly those aged 10-19 years, are at high risk of developing clinical depression^[2]. India accounted for about 13.98 % of the total population with depression in the world^[3]. This prevalence surpasses the rates reported among young adults aged 18-25 years^[2].

Female adolescents and those living in regions such as the Middle East, Africa, and Asia are especially vulnerable^[2]. These statistics highlight an urgent need for practitioners and researchers to develop more tailored, gender-specific, and culturally relevant intervention programs to address this growing mental health crisis effectively.

Despite the widespread use of pharmacotherapy, treatment outcomes vary, and many patients do not achieve full remission^[4-7]. Recent research has focused on alternative therapies such as light music, which has been shown to influence emotional states and reduce stress^[8-12]. Hence, the present study aims to investigate the impact of light music when combined with pharmacotherapy in treating depression.

METHODS:

This was a randomized controlled trial involving 60 patients diagnosed with depressive disorder, conducted between January and June 2024. Participants were recruited from an inpatient psychiatric tertiary care hospital and divided into two groups: Group A received pharmacotherapy with light music, and Group B received pharmacotherapy alone. Inclusion criteria included adults aged 18–65 years with a confirmed diagnosis of depressive disorder based on the ICD 10 criteria.

Intervention: Group A was exposed to light music for 30 minutes daily, in addition to their prescribed antidepressants (SSRIs or SNRIs). Music selections were customized based on patient preferences, including recent film music, old film music, and devotional songs. Group B received only pharmacotherapy. Both groups were monitored for three weeks, with assessments of depression severity using the Hamilton Depression Rating Scale (HAM-D) at baseline and the third week.

Outcome Measures: HAM-D scores were the primary outcome measure, evaluated at baseline, after one week, and at the end of three

weeks. Secondary outcomes included patient demographic characteristics, past psychiatric history, presence of significant stressors, family type, interpersonal relationships, premorbid personality traits and insight.

Statistical Analysis: Data were analyzed using SPSS software. Independent t-tests were used to compare HAM-D scores between groups, while ANOVA was employed to assess the relationship between types of music and depression severity. A p-value <0.05 was considered statistically significant.

RESULTS:

The demographic characteristics of the study participants are summarized in Table 1. Both groups, Group A (Pharmacotherapy with Light Music) and Group B (Pharmacotherapy only), were similar in terms of age distribution, with the mean age in Group A being 37.7 ± 9.74 years and in Group B being 39 ± 10.54 years, showing no statistically significant difference between the groups ($P=0.967$).

There was a significant difference in gender distribution between the two groups ($P=0.007$). In Group A, 46.7% were male and 53.3% were female, whereas in Group B, the gender distribution was reversed, with 53.3% being male and 46.7% being female.

Educational attainment was comparable between the groups, with no statistically significant difference observed ($P=0.365$). In Group A, 43.3% of participants had completed higher secondary education, while 33.3% were graduates, and 3.3% had a postgraduate qualification. In Group B, 33.3% had completed higher secondary education, 36.7% were graduates, and none had a postgraduate qualification.

The duration of illness among participants was varied but not significantly different between the two groups ($P=0.161$). In Group A, 66.7% of participants reported a duration of illness between 2-12 months, while in Group B, 50.0% of participants fell within this category. A smaller proportion of participants in both groups had illness durations extending beyond 13 months.

A significant difference was observed regarding the history of psychiatric illness, with 46.7% of participants in Group A having a history of depression compared to 26.7% in Group B ($P<0.001$). Additionally, 50.0% of participants in Group A and 63.3% in Group B

had no history of psychiatric illness. Other psychiatric conditions were rare in both groups.

When examining significant stressors, 40.0% of participants in Group A reported the presence of stressors, compared to 23.3% in Group B, but this difference did not reach statistical significance ($P = 0.209$).

Regarding family structure, a statistically significant difference was found between the groups ($P = 0.007$), with 86.7% of Group A participants belonging to nuclear families compared to 63.3% in Group B. Conversely, joint family structure was more prevalent in Group B (36.7%) compared to Group A (13.3%).

Interpersonal relationships were largely cordial in both groups, with 76.7% of participants in Group A and 80.0% in Group B reporting cordial relationships. This was found to be statistically significant ($P < 0.001$).

Substance use was reported by 16.7% of participants in Group A and 13.3% in Group B, showing no significant difference between the groups ($P = 0.701$).

Premorbid personality traits were mostly nonspecific in both groups, with 86.7% in Group A and 80.0% in Group B having no specific personality traits. Cluster B and C traits were present in a small proportion of participants in both groups, with no significant difference ($P = 0.657$).

Suicidal thoughts were reported by 63.3% of participants in Group A and 66.7% in Group B, with no significant difference between the groups ($P = 0.694$). However, a significant difference in insight was observed ($P < 0.001$), with 13.3% of Group A and 23.3% of Group B participants having intact insight. The majority of participants in both groups had partially intact insight (86.7% in Group A and 76.7% in Group B).

Table 1- Demographic Characteristics Of Participants

Variables	Group A Pharmacotherapy with Light Music	Group B Pharmacothera py only	P-value
Age Group	37.7 ± 9.74	39 ± 10.54	0.967
Gender			
Male	14(46.7%)	16(53.3%)	0.007
Female	16(53.3%)	14(46.7%)	
Education			
Higher Secondary	13(43.3%)	10(33.3%)	0.365
Secondary	4(13.3%)	4(13.3%)	
Graduate	10(33.3%)	11(36.7%)	
Post Graduate	1(3.3%)	0(0.0%)	
Duration of Illness (in months)			
0-1	1(3.3%)	4(13.3%)	0.161
2-12	20(66.7%)	15(50.0%)	
13-24	4(13.3%)	7(23.3%)	
25 and above	5(16.7%)	4(13.3%)	
Past History Psychiatry			
Depression	14(46.7%)	8(26.7%)	<0.001
Psychotic illness	0(0.0%)	1(3.3%)	
Other psychotic illness	1(3.3%)	2(6.7%)	
Absent	15(50.0%)	19(63.3%)	
Significant stressors			
Present	12(40.0%)	7(23.3%)	0.209
Absent	18(60.0%)	23(76.7%)	
Family Type			
Nuclear	26(86.7%)	19(63.3%)	0.007
Joint	4(13.3%)	11(36.7%)	
Interpersonal relationship			
Cordial	23(76.7%)	24(80.0%)	<0.001
Strained	7(23.3%)	6(20.0%)	
Substance			

Present	5(16.7%)	4(13.3%)	0.701
Absent	25(83.3%)	26(86.7%)	
Premorbid Personality			
No specific traits	26(86.7%)	24(80.0%)	0.657
Cluster B & C traits	4(13.3%)	6(20.0%)	
Suicidal thoughts			
Present	19(63.3%)	17(66.7%)	0.694
Absent	11(36.7%)	13(43.3%)	
Insight			
Intact	4(13.3%)	7(23.3%)	<0.001
Partially Intact	26(86.7%)	23(76.7%)	

HAM-D Scores: At baseline, no significant differences were observed between the two groups (17.87 ± 2.57 vs. 18.10 ± 2.88 , $p=0.222$). However, by the end of three weeks, Group A demonstrated a significantly greater reduction in HAM-D scores compared to Group B (5.77 ± 2.28 vs. 7.27 ± 2.65 , $p=0.0222$). The SSRIs showed superior efficacy compared to SNRIs in both groups ($p<0.001$).

Table 2- Outcomes.

Outcomes	Group A Pharmacotherapy with Light Music	Group B Pharmacothera py only	P- value
HAM-D Scores			
Baseline	17.87 ± 2.57	18.10 ± 2.88	0.222
Week 3 rd	5.77 ± 2.28	7.27 ± 2.65	
Treatment Regime	Baseline	Week 3rd	
SSRIs	17.41 ± 2.72	4.77 ± 1.34	<0.001
SNRIs	19.13 ± 1.35	8.50 ± 2.13	

Type Of Music: In Group A, patients who listened to recent film music had the greatest reduction in HAM-D scores, while those listening to old film music and devotional songs showed less improvement. ANOVA revealed no statistically significant differences between music preferences and depression outcomes ($p=0.057$), though trends suggested a positive association with lighter, more contemporary music.

Table 3- Comparison of Type of Music with HAM-D Score.

Type of music	(n=30)	At Baseline				At end of 3rd Week			
		Mea n	SD	min	max	Mea n	SD	min	max
Recent film music	13	18.84	2.41	15	21	4.85	1.28	3	7
Old film music	15	16.87	2.47	14	21	6.2	2.61	3	10
Devotional songs	2	19	0	19	19	8.5	0.35	8	9

Other Factors: Patients with a history of depression in Group A demonstrated better treatment responses compared to those in Group B ($p<0.001$). Insight into illness also played a critical role in treatment outcomes, with participants showing intact insight and responding better insights to the intervention ($p<0.001$).

DISCUSSION:

The results of the present study suggest that light music, when used as an adjunct to pharmacotherapy, significantly enhances treatment outcomes in patients with depression. Music therapy may work by modulating emotional responses, reducing stress, and improving treatment adherence. In the literature, the positive effects of active musical engagement on mental health outcomes are promising for reducing burden^[11,13-17].

The therapeutic effects of music have been widely studied, with researchers like Bradt et al. and Leubner and Hinterberger consistently demonstrating that music therapy leads to significant reductions in depression, anxiety, and pain^[4,18]. Bradt et al. focused on the distinction between music therapy, which is administered by trained therapists, and music medicine, where music is used without direct therapist involvement^[4]. In present study, although not conducted by trained music therapists, the inclusion of light, familiar music enhanced the pharmacotherapy outcomes, supporting the notion that music, even in a non-therapeutic setting, can have profound psychological benefits. This is consistent with Bradt et al.'s finding that both music therapy and music medicine are effective in improving emotional well-being, though music therapy tends to yield more substantial outcomes^[4].

Present study primarily focused on passive listening, where patients

engaged with light, familiar music as a background element to their treatment regimen. This passive form of engagement has been shown to be effective in numerous studies, particularly for elderly patients or those with limited capacity for active participation^[19-20]. However, Leubner and Hinterberger made an important distinction between passive listening (79% of studies) and active participation (46%), with both methods contributing to improvements in mental health^[18]. In present study, the passive listening of light music yielded faster improvements in mood and overall treatment outcomes, corroborating the efficacy of passive music interventions as highlighted in Leubner's meta-review.

In a striking revelation, the present study found that recent film music holds a unique power to uplift mood and improve treatment outcomes for patients with depression, surpassing the effects of traditional or devotional genres. This discovery highlights the profound impact of emotional and cultural familiarity in music therapy. Music that resonates emotionally, like popular film scores, seems to engage patients more deeply, offering a richer therapeutic experience. This finding aligns with Esfandiari and Mansouri's research, which demonstrated that light, familiar genres, such as pop and film music, are far more effective at alleviating depressive symptoms than heavier or unfamiliar music^[21]. Both studies emphasize that music with personal and positive emotional associations can create a stronger connection with patients, enhancing the overall effectiveness of the therapy. This reinforces the idea that incorporating culturally relevant and emotionally resonant music can optimize music therapy, offering a more tailored and impactful approach compared to traditional music forms.

Additionally, several recent studies observed that group drumming and improvisation yielded significant reductions in depression, particularly when the music selected resonated culturally with participants^[22-23]. Though the present study did not include active engagement through instruments or group participation, the focus on familiar and emotionally resonant music genres mirrors these findings, emphasizing the importance of personalization in music therapy interventions.

Group music interventions have often been shown to yield more substantial mental health improvements than individual sessions due to the added social interaction^[23-24]. While present study focused on individual treatment settings, it is worth noting that several studies, including Leubner and Hinterberger, found that social aspects of group music therapy often lead to enhanced emotional and psychological outcomes^[18]. This is particularly relevant for elderly or socially isolated patients, who benefit not only from the music itself but also from the communal environment. Future research could explore the effects of combining social interaction with personalized music therapy in group settings to maximize therapeutic effects.

The present study demonstrated that even short-term exposure to familiar, light music can significantly improve mood in patients with depression. This reinforces the idea that consistent, albeit brief, interventions can yield meaningful psychological benefits. The study found that regular engagement with emotionally resonant music, such as light or familiar tunes, led to noticeable mood enhancements, aligning with the broader understanding that music therapy's effectiveness is not solely reliant on the length of exposure but rather on the emotional connection and consistency of the sessions. These results echo the findings of Leubner and Hinterberger^[18], who emphasized that interventions lasting between 4 to 8 weeks with 30-60 minute sessions showed the most significant reductions in depressive symptoms. Additionally, Guétin et al. similarly observed that structured, regular music therapy sessions over several weeks produced lasting improvements in both depression and anxiety symptoms, underscoring the importance of consistency in music therapy interventions^[25].

The present study's focus on the general population aligns with findings by researchers such as Guétin et al. and Chan et al., who observed the significant impact of music interventions across diverse demographics, including elderly and younger adults^[25-26]. Present findings, which showed the most pronounced benefits in patients who engaged with recent film music, suggest that music's therapeutic potential is not limited to any specific demographic, though it may be especially beneficial for those who are culturally attuned to the genre being used. This supports the observations of Särkämö et al. and Chen

et al., who highlighted the importance of cultural relevance in music therapy^[19,21].

The present study underscores the value of incorporating music therapy into clinical settings, particularly as an adjunct to traditional pharmacotherapy for depression. Given the strong evidence supporting both passive and active forms of music intervention, clinicians should consider integrating music therapy into their treatment plans, especially in cases where patients may benefit from non-invasive, emotionally supportive interventions^[4,18]. Future research could explore the long-term benefits of combining personalized music therapy with other therapeutic modalities, such as cognitive-behavioral therapy or group support, to maximize patient outcomes.

CONCLUSION:

The present study highlights the powerful role that light music, particularly recent film music, can play in enhancing the effects of pharmacotherapy for depression. By offering a non-invasive, emotionally resonant, and culturally familiar intervention, music therapy significantly boosted treatment outcomes, leading to quicker and more profound improvements in mood compared to pharmacotherapy alone. This underscores the potential for music therapy to serve as an effective, low-cost adjunct to traditional treatments, providing a personalized and engaging approach to mental health care. Given the significant improvements seen with even short-term exposure to light music, the integration of music therapy into clinical practice could transform the way depression is treated, offering patients an additional pathway to recovery that is both accessible and deeply meaningful. Future research should continue to explore the long-term benefits and neurobiological mechanisms of music therapy while expanding its use across diverse patient populations to fully unlock its therapeutic potential.

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