

INDIAN CLASSICAL MUSIC: A MEANS OF MANAGING PROBLEM BEHAVIOR AMONG PERSONS WITH INTELLECTUAL DISABILITY

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ABSTRACT

The goal of the study was to evaluate the effectiveness of Indian Classical Music (raga bhairavi) on reducing problem behaviours of aging adults with Intellectual disability. Single subject research design with ABAB design was used to for this study. One subject with Down syndrome having (age 47 years) mild intellectual disability was purposely selected for study. BASAL-MR Part B was administered to assess the baseline score of the problem behaviours. Target behaviours were selected with mutual consent with family members. The subject was exposed to music of raga bhairavi using sehnaai in structured setup at his home setting. This study reveals that intervention given through raga bhairavi was effective in reducing selected target behavior.

Keywords: Indian Classical Music, Raga Bhairavi, Elderly, Aging, Intellectual Disability, Problem Behaviours

Introduction

Music has been used as therapy for effective cures of disease and for restoring, maintaining and improving emotional physiological and psychological wellbeing. The pitch tone and specific arrangement of swars (notes) in particular raga stimulates, alleviate changes in body (Sarkar & Biswas 2015). The music therapy has been effective in reducing level of hyperactivity, increasing calmness to persons having attention deficit hyper active disorder (Tak, & Bunkar 2023), helps in enhancing good communication and social skills among children with intellectual disability (Mitra & Manogna 2024) improving writing skills to children with learning disability (Ramchandran, & Singh 2014).

There is growing body of empirical research regarding the role of music in managing problem behaviors of children with disabilities (R.W. Schwartz, Ayres & Douglas, 2017) identified twenty studies in a literature review that focus on the role of music in facilitating task engagement, improving performance and modifying problem behavior.

Behavioural problems are commonly found with aging adults with intellectual disability. O'Dwyers et al 2018 in their study found that considerable number of older adults with intellectual disability in Ireland displayed problem behaviours. Nearly 50% had reported displaying verbal aggression (47.8%), physical aggression (47.8%), destruction (38.1%) self-injurious behaviors (27.9%) and other problem behaviours (21.9%). Bowring, D et al 2019 in their study found prevalence of challenging behavior of about one in every 5-6 aging adults with intellectual disabilities. Stambough (1996) found music to be beneficial for adults with intellectual disabilities.

There are various ragas such as piloo, kafi, mand, dhama, bhairavi etc. For each type of raga used, different impacts were found on individual's behavioural responses for example raga todi was effective for restraining rise of blood pressure in asymptomatic subjects (Mukherjee, S & Mukherjee R.2020), raga bihaag and bahar have positive effect for people suffering from insomnia (Sarkar, J & Biswas, U. 2020). Although there are several studies about using raga therapy as behavioural intervention for reducing stress, anxiety and other emotional problems, there, are not any studies that study the effect of raga bhairavi, on aging adults with intellectual disability. Therefore, the goal of the study is to investigate the effectiveness of raga bhairavi in reducing problem behavior among aging adults with intellectual disability.

Objective

- To assess the frequency of problem behavior of subject (aging adults with intellectual disability).
- To find out the effect of Indian Classical Music (raga bhairavi) in modifying selected target behavior of the subject.

Research Question

- Does providing intervention through Indian Classical Music (raga bhairavi) modifies problem behavior of aging adults with intellectual disability?

Operational Definitions of the key terms used:

- **Indian Classical Music:** In present study Indian Classical Music refers to Raga Bhairvi.
- **Raga bhairavi:** It refers to pre-recorded Hindustani classical music (raga bhairavi using sehnai played by late Bismillah Khan) played during intervention.
- **Target problem behaviour:** within the current investigation, targeted problem behavior refers to specific problem /challenging behaviour selected for intervention.
- **Aged Intellectual Disability:** The term describes people with aged intellectual disability of 47 years.

Methodology

Experimental research design was used to study out the effect of Indian Classical Music (Raga Bhairvi) on problem behavior of aging adults with intellectual disability.

Variables

There are two types of variables.

Dependent Variable

Selected target problem behaviour was the dependent variable.

Independent Variable

Indian Classical Music (rag bhairavi) of the study was independent variable.

Subject

Subject of the study was 47-year-old mild intellectually disabled, who had Down syndrome. The subject was purposefully selected as his elder brother; care provider had approached Rehabilitation centre for behavioural intervention related to his aggressive problem behavior. The subject had high blood pressure and been on medicine for last twenty years.

Tools used

The investigator used following materials/tools for the investigation:

- Behavioural Assessment Scale for Adult Living with Mental Retardation: Part B (BASAL-MR: Part B) developed by Dr Reeta Peshawaria, Dr. D.K.Menon, Don Bailey, Debra Skinner and Dr Rahul Ganguly. BASAL-MR part B are used for assessing problem behaviour for persons above 18 years old. BASAL-MR: Part B has 109 items spread across twelve domains such as physical harm to others damage property, misbehaves with others, temper tantrums, self-injurious behaviour, repetitive behaviours, odd behaviours, hyperactive behaviours, rebellious behaviours, inappropriate social behaviours and fear. Each item is scored based on level of frequency of problem behaviour such as never 0, occasionally-1 and frequently occurring behaviour gets 2 points. Total maximum score is 240.

- General Data Sheet: It was prepared to collect general information related to subject name, age, severity level and associated condition
- Data sheets for collection of baseline & intervention data.

Materials

- Original CD of Hindustani Indian Classical Music (Raga Bhairvi) played by late Bismillah Khan on using sehnai.

Setting

On request of the care provider, considering his age related health problems, this study was conducted in the home setting where the subject was residing with their family members. Subject belong to extended family and was living with his elder brother family. In his family there were in total five members staying together. It includes his elder brother, sister-in-law, nephew and niece. There were four bedrooms and one guest room, all having attached bathrooms. The intervention was given in the guest room of his house in the morning hours from 8.30 to 9.30 AM.

Procedure

The researcher assessed the behaviours of subject using behavioural assessment checklist (BASAL-MR-Part B) subject exhibited problem behaviours like throwing objects at others, tears up own/other books, does not do what told to do, takes very long intentionally to complete a task and goes out of house without informing. BASAL-MR Part –B subject had obtained 41 score out of 240. It was ensured that selected sample have not had history of adverse reactions during activities where music had been played. Thereafter, it was mutually agreed to work on his modification of following problem behaviour through raga:

- Throwing objects at others
- Tears up own/others books/papers

Intervention Sessions

The intervention sessions consist of four phases:

- **Phase one:** This baseline phase continued for first two weeks (ten working days) Researcher observed the target behaviours in home setting and collected baseline data using event-recording sheet.
- **Phase two:** Researcher introduced raga bhairavi music in third week. In this phase, raga bhairavi using sehnai by ustad bismillah khan was played using mobile phone. This intervention phase lasted for another three weeks (fifteen working days).
- **Phase three:** This withdrawal phase lasted for two weeks.
- **Phase four (Intervention with music):** this re-intervention phase lasted for three weeks

Baseline procedure

The baseline data were collected initially for two weeks before intervention and two weeks after intervention for target behaviour selected. Similarly, intervention data were collected in 2nd and 4th phase. The occurrence of behaviour of throwing objects at others was on average 7 times per day and similarly, behaviour of tearing up books/papers occurred on average of two times per day. Stable baseline were obtained for occurrence of target behaviours of the subject. The data were collected from 8.30 AM to 9.30 AM daily on each working day for baseline and intervention sessions. During data, collection there was no interaction between family members and researcher regarding aim of the study.

Inter ratter reliability

Reliability is a measure of consistency that describes the extent to which a measurement procedure yields the same value when measuring the same variables over time (Cooper et al 2020) Inter- observer agreement refers to the degree to which two or more trained observers independently record and report the same values after observing the same behaviours. Inter-observer agreement for dependent variable was assessed 20% of the time during baseline and intervention. This helped ensure appropriate fidelity for this study. Inter-observer data were collected and compared for 20% of all trials to ensure that inter-observer agreement of a minimum of 80% was obtained, a percentage adequate for educational research (Graham et al 2012). Inter rated agreement for this study was at 91%.

Social Validity

Social validity was measured using a 5- point Likert type scale in which 1= strongly disagree and 5= strongly agree. The questionnaire assessed the likeability, willingness to implement and ability to decrease behavior.

Results and interpretation

Data collected for both the problems that is throwing objects at others and tears up own/others books/papers were analysed interpreted individually in the following paragraph.

Data analysis and interpretation of problem behaviour throwing objects at others

The subject's average of **throwing things on others** behaviour during the initial baseline (phase 1) was 7.4 times per day with a range of 7 to 8 times. In the first intervention phase (phase 2), subject had a mean hitting other behaviour of 5.4 times with a range of 7 to 4 times. Subject's trend in data from baseline phase one to intervention phase one decreasing. With **throwing things on others** behaviour improving from four times at its lowest, to seven times after the first intervention stage. Stability during each phase was determined by utilizing the event recording sheets, and then the subject was moved in to second baseline (third phase) where music was not provided. In this phase, data were again collected using event recording sheet, which continued for 10 days. Subject 1 average **throwing things on others** behaviour during the third phase was six times per day with a range of 7 to 5 times. In the fourth phase, intervention with music was again provided. In this phase subject, had a mean of **throwing things on others** behaviour of 5.3 times with a range of 4 to 6 times. Subjects down ward trend of **throwing things on others** behaviour can be seen in the following figure- 1.

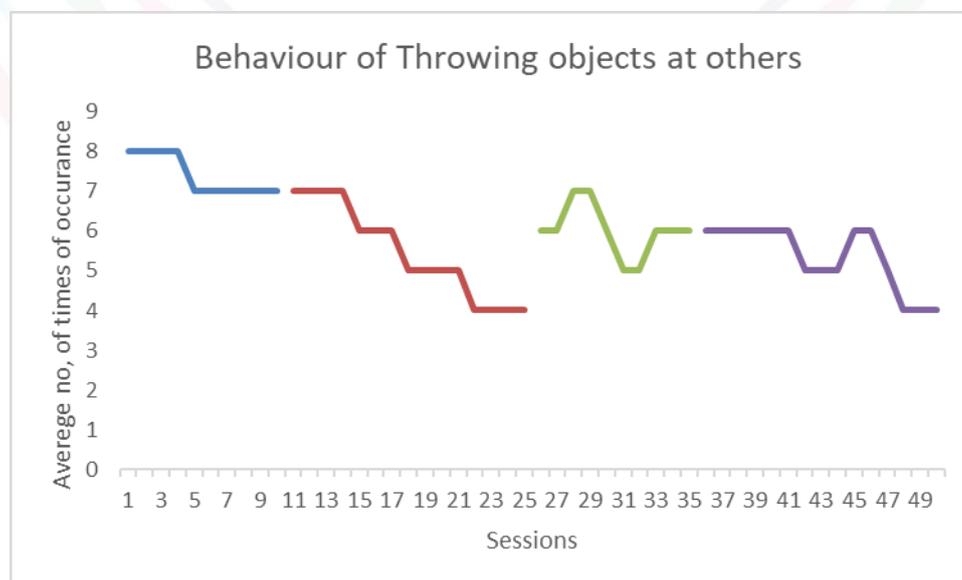


Figure-1. Problem behaviour of throwing objects at others

As we comprehend from the above figure that the mean score of first phase of baseline and second phase with intervention, there is decline in the value of the mean score. Similarly, in the mean score in the fourth phase of intervention data is on decline from the third phase of baseline data. Therefore, it indicated that intervention through raga bhiravi had positive effect on reducing problem behaviour of throwing objects at others.

Data analysis and interpretation of problem behaviour of tearing up of books/papers

The subject's average of **Intervention in behaviour of tearing up of books/papers** behaviour during the initial baseline (phase 1) was 2 times per day with a range of 3 to 1 times. In the first intervention phase (phase 2), subject had a mean hitting other behaviour of 1 time with a range of 2to 1 times. Subject's trend in data from baseline phase one to intervention phase one decreasing. With **behaviour of tearing up of books/papers** improving from two times at its lowest, to one time after the first intervention stage. Stability during each phase was determined by utilizing the event recording sheets, and then the subject was moved in to second baseline (third phase) where music was not provided. In this phase, data were again collected using event recording sheet, which continued for 10 days. Subject 1 average **behaviour of tearing up of books/papers** during the third phase was 1.6 times per day with a range of 2 to 1 times. In the fourth phase, intervention with music was again provided. In this phase subject, had a mean of **behaviour of tearing up of books/paper** was 1.1 times with a range of 2 to 1 times. Subjects down ward trend of **behaviour of tearing up of books/papers** can be seen in the following figure- 2.

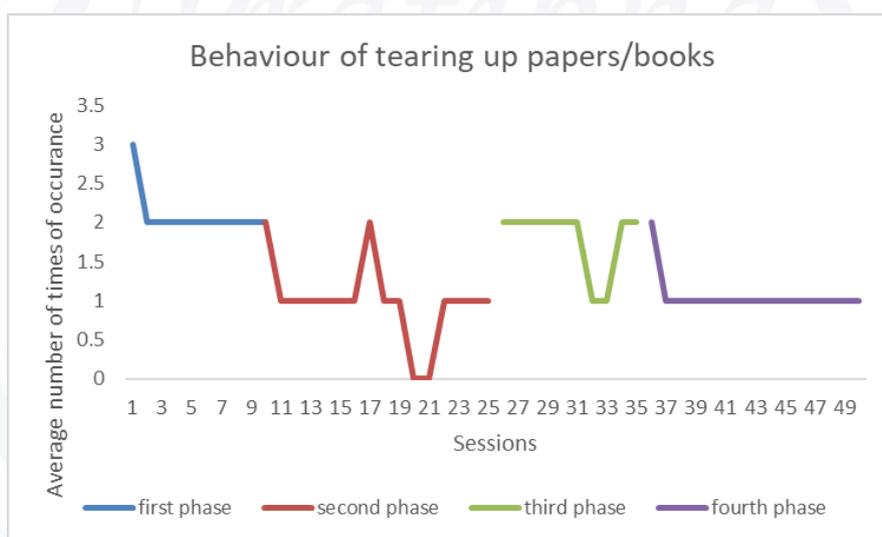


Figure-2. Problem behaviour of tearing up of books and papers

As we comprehend from above figure-2 that the mean score of first phase of baseline and second phase with intervention, there is decline in the value of the mean score. Similarly, in the mean score in the fourth phase of intervention data is on decline from the third phase of baseline data. Therefore, it indicated that intervention through rag bhiravi had positive effect on reducing problem behaviour of tearing paper/books.

Discussion

The present study aimed to see the therapeutic effect of Hindustani classical music raga bhairavi on problem behaviour of aging adult with intellectual disability. About the healing effect of raga therapy is explained in the Indian context by samveda, raga has a positive effect on overall mental health (Hegde, 2014).

The result of the study indicates that there is decrease in selected problem behaviour levels in the subject. The decline of the occurrence of selected target behaviour are due to sequential presentation of intervention in structured setting, presentation of reinforcement and the researcher's skill during the intervention program.

The result of this study is consistent with Tak & Bunker, 2023, who reported that raga therapy is effective in managing problem behaviours of children with ADHD. Similarly, Mitra & Manogna 2024 also concluded in their research the efficacy of vocal music on reducing odd behaviour among children with intellectual disability having ASD. Schwart et al (2017) reported in their research to examine the study that music is an effective strategy for increasing task engagement and performance and decreasing stimulatory behaviours for individual with intellectual disability

Further studies are required to examine the effect of raga therapy over longer period, on larger sample size and different form of ragas in Hindustani classical music. An eclectic mode of using raga in background along with other behaviour modification techniques may be incorporated to examine its effectiveness in managing problem behaviour of adults with intellectual disability.

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