1997

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Running head: THE EFFECTS OF INSTRUMENTAL RELAXING AND SOFT ROCK

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Abstract

The purpose of the study was to examine the effects of instrumental relaxing and soft rock music on anxiety and aggression in psychiatric patients over three months. There were three levels of the independent variable, including an initial baseline period in which no music was played, the instrumental relaxing period, and the soft rock period, which were presented one month each over the duration of the study. The two dependent variables, anxiety and aggression, were measured in terms of vital signs and observable behavior respectively. A follow-up study was also conducted to determine whether a subset of the subjects found randomly selected tracks from the discs used for the study to be stimulating or exciting. Results indicated that there were some significant differences in vital signs among the three periods, but there were no significant differences in the number of observable acts of aggression. Results from the follow-up study revealed that while the subset of subjects found some of the musical selections to be relaxing, they felt other selections were of a more stimulating nature.

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For years, researchers have studied the effects of music therapy on the many aspects of schizophrenia. Given the fact that changes in physiological indices and observable behavior can be readily detected with such therapy, music has been considered a useful and reliable tool(Hadsell, 1974). In terms of relative therapeutic gain, research has shown that certain types of music tend to be more beneficial than others and that relaxing music seems to be the most effective.

For example, Hustig, Tran, Hafner, and Miller(1991) showed that both relaxing and stimulating music reduced persistent auditory hallucinations and that relaxing music was generally more effective than stimulating music. Although the results of the study were not consistent with the experimental hypothesis (relaxing music should reduce the frequency of hallucinations more than stimulating music), it was concluded that relaxing music was of some value as a non-pharmalogical treatment.

Other research has been conducted to determine whether patients respond more to music of a relaxing nature than that of a stimulating or exciting nature. For instance, Watson, Anderson, and Schulte(1976) showed that patients with a tendency to seek high sensation exhibited more responsive behaviors when they were played grating or unpleasant pieces of music than when they

were played exciting or neutral pieces of music and that those with a tendency to seek low sensation tended to respond poorly to both types of music. Although relaxing music was not included as an experimental variable, the results showed that neither high nor low sensation seeking patients respond well to stimulating music.

Another study, which did include relaxing music in the experimental design, showed that reactive schizophrenic patients, who differentiate well among environmental stimuli, respond more to relaxing music than to stimulating or exciting music. It also showed that process schizophrenic patients, who don't distinguish well among environmental stimuli, respond poorly to both types of music(DeWolfe & Konieczny, 1972). Given this evidence, one can reason that if a patient is capable of discriminating between two different types of stimuli, he or she would be more likely to benefit from relaxing music than from stimulating music.

In general, music has also been used as a means to reduce anxiety and aggressive behavior. For instance, Fried(1990) did a review and a subsequent study to determine whether or not music has an impact on the counterarousal state of the autonomic nervous system. Fried concluded that certain types of music help "deepen" breathing and quicken relaxation. This finding suggests that under the right circumstances, music can have a suppressing effect on the nervous system and possibly reduce physiological factors commonly associated with anxiety.

In terms of aggression, McIntyre and Cowell(1992) designed

a study in which the effects of music on emotionally disturbed adolescents were observed. After monitoring a number of students for several weeks, they concluded that the differences in the frequencies of aggressive behavior among the music conditions of "sedative", "stimulating", and "no music" were insignificant but that further research was needed before conclusions can be drawn.

In the present study, the effects of relaxing music on anxiety and aggression in psychiatric patients were measured and observed respectively. The independent variable had three levels: a baseline period in which no music was played, an instrumental relaxing period, and a soft rock period. The two dependent variables, anxiety and aggression, were measured in terms of vital signs and observable behavior(number of acts of violence) respectively. It was hypothesized that both instrumental relaxing and soft rock should lower anxiety levels and the number of incidents of violence compared to the baseline period.

As a follow-up, random selections from the compact discs used were played for ten volunteers from the twenty seven female patients who had participated in the study to determine whether or not they perceived the music to be relaxing. The survey was conducted after the three month period was over and the subjects had already been exposed to the musical selections.

This study differs from those that comprise the bulk of the literature in that a) stimuli were presented as background music rather than as focused therapy with selected patients, and b) the effects of popular music not ordinarily categorized as

"relaxing" were investigated.

Method

Participants

Since three of the initial thirty female psychiatric patients of Ward EH3 at East Louisiana State Hospital in Jackson, LA, were either transferred or discharged, 27 subjects were exposed to all study conditions. A within-subjects experimental design was used to provide more statistical power and eliminate any confounds due to individual difference characteristics. The majority of the subjects were diagnosed as having schizophrenia, and the entire ward was chosen because of the high number of previous violent incidents. All of the subjects were treated in accordance with the "Ethical Principles of Psychologists and Code of Conduct"(American Psychological Association, 1992) and were not chosen based on any particular age, race, or creed.

Materials

In the present study, twenty-one compact discs were used. While eleven contained instrumental relaxing music, the other ten contained soft rock music. The number of discs was chosen by the ward staff, and the music was played over a sound system operated by the staff. The staff also measured vital signs using the appropriate medical devices and recorded the number of observable incidents of aggression against other patients, the staff, and oneself on individual charts.

Procedure

After a one month baseline during which no music was

played, the patients were then exposed for one month at a time to each of the two music conditions. Both of the conditions were incorporated into the ward's daily activities, which consist of regularly scheduled therapy sessions, recreation time, and personal hygiene duties. After the baseline, the instrumental relaxing condition was used because it was shown to be effective in reducing anxiety in earlier studies. The soft rock condition was, therefore, used last and compared against the baseline and the instrumental relaxing condition. For the instrumental relaxing and soft rock periods, music was played on and off each day according to the judgments of the ward staff.

The instrumental relaxing selections were as follows: 1. Relaxation: Music For Your Mind; 2. Warner, R: Spirit; 3. Winter Solstice; 4. Winter Solstice 2; 5. Arkenston/Lanz:Conversions; 6. Sweet Dreams: Classical Lullaby; 7. Harriss, D: Abacus Moon; 8. Windham Hill: Guitars; 9. Nakai, R.C.: Earth Spirit; 10. Mark, Jon: Land of Merlin; 11. Redbook Relax: Romance.

The soft rock selections were as follows: 1. Diana Ross & The Supremes: Greatest Hits, Vol 1; 2. Jackson, Michael: Bad; 3. Every Great Motown Hit, Vol 1; 4. Gaye, Marvin: Greatest Hits; 5. Cole, Natalie: Unforgettable; 6. Kenny G: Duotones; 7. Eagles: Greatest Hits 71-75; 8. Rimes, L: Unchained Melody; 9. Simon & Garfunkel: Greatest Hits; 10. Houston, Whitney: Whitney.

Throughout the three months, vital signs were measured between 6:45 and 7:15 AM after the subjects had not been exposed to any music during the night. These included temperature, pulse,

respiration, and blood pressure. The aggression level for each participant was operationally defined as the frequency of violent acts toward a member of the staff, another patient, and oneself.

The follow-up was conducted during a one hour period in the recreational room of Ward EH3. Ten volunteers from the twenty seven subjects listened to randomly selected tracks from the set of discs used for the study. The volunteers were asked to raise their hands according to whether they found a selection to be relaxing or exciting and were exposed to all of the selections as a group.

Results

For each vital sign, individual means and an overall group mean were calculated for each experimental condition. ANOVAS were then conducted to determine whether there were any significant differences among conditions for any of the vital signs. The results, which are displayed in Table 1, show that while the differences among conditions regarding pulse and blood pressure were non-significant, there were significant differences(p less than .05) among conditions for temperature and respiration. Specifically, temperature for the baseline condition differed significantly from that of both the instrumental relaxing and the soft rock conditions and respiration for the baseline condition differed significantly from that of the soft rock condition. The mean average was higher for both temperature and respiration in the baseline condition than for temperature in the instrumental relaxing and soft rock conditions and respiration in the soft

rock condition. Therefore, temperature and respiration were significantly reduced during the music conditions, but pulse and blood pressure were unaffected.

As for aggression, the number of observed acts of violence for each condition were tabulated, and two chi-square tests were conducted to determine whether significant differences existed among all three conditions and between the instrumental relaxing and the soft rock conditions. The results, which are displayed in Table 2, show that there were no differences among any of the conditions. Therefore, aggression was not significantly reduced during either music condition.

The results of the follow-up, which are displayed in Table 3, show that while some of the randomly selected music tracks were found to be relaxing, a number of others were found to be exciting. Therefore, the overall results of the study may have been confounded by use of inadequate selections. It should also be noted that where data on the table is incomplete, it is from the result of certain volunteers being unresponsive at times during the follow-up.

The hypothesis of the present study predicted that both the instrumental relaxing and the soft rock conditions should lower signs of anxiety and observable acts of aggression. Since only half of the vital signs were reduced during the music conditions and some of the music selections were questionable as being relaxing, firm conclusions cannot be drawn from the results of the study.

Discussion

The results of the present study compare to the results of prior research insofar as relaxing music shows promise as a means to supplement other interventions. As for therapeutic gain, the results suggest that further studies must be conducted before any solid conclusions can be made. With the proper adjustments to experimental conditions and music selections, future researchers will be able to determine the maximum effects of relaxing music on debilitating symptoms commonly associated with schizophrenia and other related disorders.

In order to accomplish this, a number of steps must be taken. First of all, a pilot study of proposed music should be conducted in order to discriminate relaxing selections from those that are either stimulating or neutral. By surveying both prospective participants and a normative group of volunteers, researchers can get a better idea of which music selections would be appropriate for future studies.

After determining which music to use, investigators should control for other sources of error or confounds within the design of the study itself. For example, the effects of medication on symptoms should be taken into account. By examining the normal pattern of symptom alleviation due to pharmalogical treatment, researchers can incorporate a more appropriate baseline condition to compare against music conditions.

External factors should also be considered when creating an experimental design. For example, the time of the intervention

may have an effect on symptoms such as anxiety and aggression. If winter weather suppresses certain symptoms more than summer weather, researchers would need to decide on a time of year to conduct a study then take into account the differences between the effects of the two periods. They would also need to determine the best time of day to measure physiological indices and other forms of behavior so that the extent of the effects of the music can be known. With respect to both seasons and the time of day, researchers should differentiate between the effects of time and the music used for the study.

If investigators control for these and other sources of error specific to a particular research setting, better estimates of the effects of music conditions can be determined. With more sound results, conclusions can be made concerning the possible benefits and implementation of music therapy as a supplement to other interventions.

References

DeWolfe, A.S., & Konieczny, J.A.(1973). Responsiveness in schizophrenia. Journal of Personality Assessment, 37, 568-573.

Fried, R.(1990a). Integrating music in breathing training and relaxation: I. Background, rationale, and relevant elements. Biofeedback and Self-Regulation, 15 (2), 161-169.

Fried, R.(1990b). Integrating music in breathing training and relaxation: II. Applications. Biofeedback and Self-Regulation 15 (2), 161-169.

Hadsell, N.(1974). A sociological theory and approach to music therapy with adult psychiatric patients. Journal of Music Therapy, 11, 113-124.

Hustig, H.H., Tran, D.B., Hafner, R.J., & Miller, R.J. (1990). The effect of headphone music on persistent auditory hallucinations. Behavioral Psychotherapy, 18 (4), 273-282.

Ihalainen, O., & Rosberg, G.(1976). Relaxing and encouraging suggestions given to hospitalized chronic schizophrenics. International Journal of Clinical and Experimental Hypnosis, 24, 228-237.

McIntyre, T., & Cowell, K.(1991). Effects of various music conditions on multiple dimensions of behavior of emotionally disturbed adolescents. Psychological Reports, 69(3, Pt. 1), 1007-1008.

Watson, C.G., Anderson, R., & Schulte, D.(1977). Responses of high and low emotional deficit patterns to exciting, grating, and neutral stimuli. Journal of Clinical Psychology, 33, 552-554.

Table 1

Temperature

Baseline Vs. Instrumental Relaxing: Paired P-Value = 0.041

Baseline Vs. Soft Rock: Paired P-Value = 0.015

Instrumental Relaxing Vs. Soft Rock: Paired P-Value = 0.705

Overall Means: Baseline = 98.25 Instrumental Relaxing = 97.88

Soft Rock = 97.84

Respiration

Baseline Vs. Instrumental Relaxing: Paired P-Value = 0.961

Baseline Vs. Soft Rock: Paired P-Value = 0.016

Instrumental Relaxing Vs. Soft Rock: Paired P-Value = 0.006

Overall Means: Baseline = 17.18 Instrumental Relaxing = 17.17

Soft Rock = 16.85

Pulse

Baseline Vs. Instrumental Relaxing Vs. Soft Rock: P-Value = 0.654

Overall Means: Baseline = 78.8 Instrumental Relaxing = 79.2

Soft Rock = 78.8

Blood Pressure(Systolic)

Baseline Vs. Instrumental Relaxing Vs. Soft Rock: P-Value = 0.982

Overall Means: Baseline = 118.2 Instrumental Relaxing = 118.4

Soft Rock = 118.1

Blood Pressure(Diastolic)

Baseline Vs. Instrumental Relaxing Vs. Soft Rock: P-Value = 0.156

Overall Means: Baseline = 78.07 Instrumental Relaxing = 77.58

Soft Rock = 76.67

Table 2

Measures of Aggression for Baseline Condition

Patient on Patient: 3

Patient on Staff: 1

Total Violence: 4

Measures of Aggression for Instrumental Relaxing Condition

Patient on Patient: 9

Patient on Staff: 2

Total Violence: 11

Measures of Aggression for Soft Rock Condition

Patient on Patient: 5

Patient on Staff: 1

Total Violence: 6

Chi Square For All Conditions

Data: Observed: 4 11 6

Expected: 6.537736 7.132075 7.330189

Chi Square = 3.324136 df = 2

Contingency Coefficient = .3696755 Phi = .3978595

Chi Square For Instrumental Relaxing and Soft Rock Conditions

Data: Observed: 11 6

Expected: 8.383562 8.616438

Chi Square = 1.692776 df = 1

Contingency Coefficient = .3009282 Phi = .3155552

p = .1936

Table 3

Volunteer Survey of Randomly Selected Music

Disc 1: Selection 1:	5	Relaxing	1	Exciting	4	Neither
Disc 1: Selection 2:	2	Relaxing	4	Exciting	4	Neither
Disc 2: Selection 1:	5	Relaxing	0	Exciting	5	Neither
Disc 2: Selection 2:	0	Relaxing	5	Exciting	5	Neither
Disc 3: Selection 1:	0	Relaxing	1	Exciting	9	Neither
Disc 3: Selection 2:	1	Relaxing	3	Exciting	6	Neither
Disc 4: Selection 1:	2	Relaxing	4	Exciting	4	Neither
Disc 4: Selection 2:	1	Relaxing	4	Exciting	5	Neither
Disc 5: Selection 1:	4	Relaxing	0	Exciting	6	Neither
Disc 5: Selection 2:	3	Relaxing	1	Exciting	6	Neither
Disc 6: Selection 1:	4	Relaxing	0	Exciting	6	Neither
Disc 6: Selection 2:	3	Relaxing	2	Exciting	5	Neither
Disc 7: Selection 1:	2	Relaxing	5	Exciting	3	Neither
Disc 7: Selection 2:	1	Relaxing	4	Exciting	5	Neither
Disc 8: Selection 1:	1	Relaxing	4	Exciting	5	Neither
Disc 8: Selection 2:	3	Relaxing	1	Exciting	6	Neither
Disc 9: Selection 1:	5	Relaxing	2	Exciting	3	Neither
Disc 9: Selection 2:	4	Relaxing	1	Exciting	5	Neither
Disc 10: Selection 1:	6	Relaxing	1	Exciting	3	Neither
Disc 10: Selection 2:	4	Relaxing	3	Exciting	3	Neither

Totals For Selections From Each Music Condition

Instrumental Relaxing:	33	Relaxing	23	Exciting	44	Neither
Soft Rock:	23	Relaxing	23	Exciting	54	Neither