

The Protective Impact of Musical Experience on Stress Levels in a Healthcare Team of a Hospital in Brazil: A Pilot Study

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Abstract

Context: Burnout syndrome is characterized when the individual suffers, often chronically, the somatic effects of stressors that are not coped with. Evidence shows how the individual needs to seek ways to mitigate the harmful effects of stress on his quality of life, especially in the pandemic reality. Concepts such as resilience and self-efficacy have been deepened in the search for ways that help the individual to better cope with the difficulties of life. In this sense, musical practices have a fundamental role both in terms of emotional mobilization that can help mental balance and better cope with stressful situations, and in the expansion of brain functions such as cognition, memory, emotion, and intelligence.

Objective: To verify the protective impact of musical experience on the incidence of Burnout syndrome among the health team professionals of the Nossa Senhora das Mercês Hospital (São João del-Rei/MG).

Subjects and Methods: 20 subjects were recruited for this study - healthcare workers from the Nossa Senhora das Mercês Hospital - over 18 years of age, not under psychiatric treatment and not using psychotropic drugs. The study design was primary, observational, cross-sectional, retrospective, analytical and comparative. Two evaluation instruments (questionnaires) were applied: preliminary Burnout Identification Questionnaire (prepared and adapted by Chafic Jbeili from the Maslach Burnout Inventory - MBI) and the Portuguese version of the Brief Music Experience Questionnaire (Brief MEQ).

Results: The results indicate that subjects with lower scores on the Chafic Jbeili Questionnaire (screening for Burnout Syndrome) have significantly higher scores in relation to musical experience ($p < 0.05$).

Discussion and Conclusion: The present study is part of a research that will include about 300 subjects, employees of the Hospital das Mercês healthcare staff (São João del-Rei/Minas Gerais/Brazil). The sample of 20 subjects will be used to show the trends of the study. Because of this still small sample universe, it was not possible to investigate other aspects such as possible gender differences or differences among the various sectors of the hospital. It is expected that such data can be generated from the target sample of 300 subjects. As demonstrated, the trend that musical experience acts as a protective factor in the stressful environment in the hospital setting may indicate future preventive strategies regarding the level of stress in the healthcare staff, such as the inclusion of musical practices for the healthcare team members.

Keywords: *Burnout Syndrome; Hospital Care; Occupational Health; Music Practices; Cognitive Flexibility*

Introduction

Burnout syndrome is characterized when the individual suffers, often chronically, the somatic effects of stressors that are not faced [1]. Labor stress affects health professionals and can trigger physical and psychological symptoms. Work stress affects health professionals

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and can trigger physical and psychological symptoms. Emotional exhaustion allied to the feeling of exhaustion, depersonalization that leads to insensitivity towards the other characterizing dehumanization, in addition to demotivation in routine practices, form the set of dimensions affected by Burnout.

This stress is even greater at the present time, with extra challenges that the Coronavirus pandemic has brought to the physical and psychological dimensions of health professionals. The main axes that suffer direct impact on these professionals' health are the physical, cognitive, and psychological loads. Considerations raised in this context, show how the individual needs to seek ways to minimize the harmful effects of stress on his quality of life [2].

It is necessary, however, to consider individual responses to stressors since different ways of coping are found in situations that are often similar for the same group of professionals [1]. The individual dimension is important in the face of the expectations created and not achieved [3]. Some people develop new strategies to better face their challenges, while others get frustrated when the results achieved are not what they expected, abandoning their efforts at the first difficulty.

Feelings of professional failure can have repercussions on the self-confidence diminishing and demotivation, causing, accordingly, less engagement in the labor practice routine. Faced with the conviction and security of one's objective, besides the recognition of the potential changes needed, the individual develops ways of coping, being more resilient to the encountered challenges.

Faced with the increasing challenges experienced by man today, a change of attitude and better coping with situations that affect personal, social, and work life, is strategic [3]. Concepts such as resilience and self-efficacy have been deepened in the search for ways that help the individual to better cope with life's difficulties.

Resilience can be conceptualized as the set of psychological and biological strengths necessary to overcome adversity more successfully and less painfully.

Music, as an artistic and cultural expression, has a relevant role in favoring the maintenance of mental health, preventing stress and relieving physical fatigue [4]. The considerations about emotional mobilization through music bring reflections about its use in the promotion of well-being and integration in different areas, especially in the exploration of ways that can help mental balance and better confront stressful situations.

Recent researches relate the importance of music in the amplification of important brain functions such as cognition, memory, emotion, and intelligence. Neuroscientists have addressed studies with music in the development of human skills from its processing and learning, thus bringing the concept of musical functions [5]. Therefore, it is also important to consider that musical practices can consequently stimulate skills that enhance resilience in the individual.

To that extent, it is crucial to understand how music practices can favorably impact cognitive functions and protectively affect the skills of individuals exposed to psychically pressured environments [6].

Purpose of the Study

The purpose of this pilot study was to find out to what extent healthcare workers, who have some level of experience with music are protected in any way in order to show fewer symptoms of burnout, more willingness to care, and a lower incidence of Burnout syndrome.

Objective of the Study

To verify the protective impact of musical experience on the incidence of Burnout syndrome among health team professionals at the Nossa Senhora das Mercês Hospital (São João del-Rei/Minas Gerais/Brazil).

Materials and Methods

The methodological design was a primary, observational, cross-sectional, retrospective, analytical and comparative study [7]. The study intended to approach health professionals, employees of the Hospital das Mercês (São João del-Rei/Minas gerais/Brazil).

The research took place in two phases. The first was the application of the preliminary Burnout Identification Questionnaire (prepared and adapted by Chafic Jbeili from the Maslach Burnout Inventory - MBI) to a sample of 20 subjects, all healthcare workers from Hospital das Mercês, working in the emergency room and Intensive Care Unit (ICU) who were eligible for this study and volunteered to participate.

The Preliminary Burnout Identification Questionnaire (developed and adapted by Chafic Jbeili from the Maslach Burnout Inventory - MBI) is a preliminary probing instrument for Burnout Syndrome. It is a questionnaire with 20 statements. For each one of them 05 answer options are given (1 - Never; 2 - Annually; 3 - Monthly; 4 - Weekly and 5 - Daily). The orientation is to add up the points obtained in each answer and get the total score. There are 05 categories into which subjects can fit:

- 0-20 points: No indication of burnout;
- 21-40 points: Possibility of developing burnout;
- 41-60 points: Early stage of burnout;
- 61-80 points: Burnout begins to set in. Symptoms are already present;
- 81-100 points: Considerable burnout stage, however it is reversible. Treatment is imperative.

The results of this application provided a normal curve configuration with scores ranging from 20 to 100 points. Subjects at the 20th percentile (%20) and the 80th percentile (%80), which were the polar groups of the distribution, were recruited for the second stage of the research.

This second phase consisted in applying the Portuguese version of the Brief Music Experience Questionnaire (Brief MEQ), which aims to detect the role of music in the subjects' lives, the intensity and depth of the subjects' relationship with music.

This questionnaire was validated for the Portuguese language. This questionnaire is composed of 53 items [8]. The answers are given on a 5-point Likert-type scale. These 53 items constitute six scales. The items cover a wide range of topics concerning the place of music in a person's life, regardless of the music style, and represent relevant content for non-musicians as well as musicians. The scales are: (1) commitment to music, which refers to the centrality of seeking musical experiences in a person's life (2) innovative musical aptitude, arising from self-reports of musical performance ability, as well as the ability to generate musical works and themes (3) social connectedness, which assesses the experience of being moved and animated in a group-oriented manner through music; (4) affective reaction, which inquiries about affective and spiritual reactions to music; (5) positive psychoactive effect, which refers to calming, energizing, and integrative reactions; and, (6) behavioral reaction to music which assesses predominantly motor reactions including humming and swaying to music.

The main hypothesis was that subjects with high scores on the Brief MEQ have low scores on the adapted MBI Questionnaire, revealing a protective function of music practices to the subjects.

Inclusion criteria

- Be 18 years of age or older, complete on the date of collection;

- Be an employee of the health staff of the Hospital Nossa Senhora das Mercês;
- Not be under psychiatric treatment;
- Not be under clinical treatment for a chronic disease that interferes with the subject’s physical integrity;
- Not be using psychotropic drugs.

Exclusion criteria

- Unavailability at the time of collection;
- Not answering the questionnaires properly;
- Refusal to answer the evaluator.

Statistical analysis

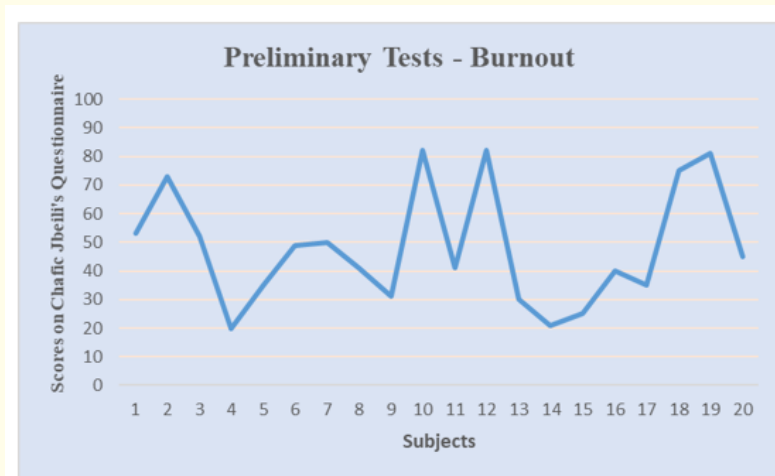
The statistical analysis software Bioestat®, version 5.0, was used. Calculations of means, standard deviations, and tests to verify the normality of the population distribution, were applied. From these, parametric tests were applied (comparison between two independent means).

Ethics

This research was approved by the ethics committee for human research at the Federal University of São João del-Rei (UFSJ) on August 6, 2021 under number 47980921.7.0000.5151.

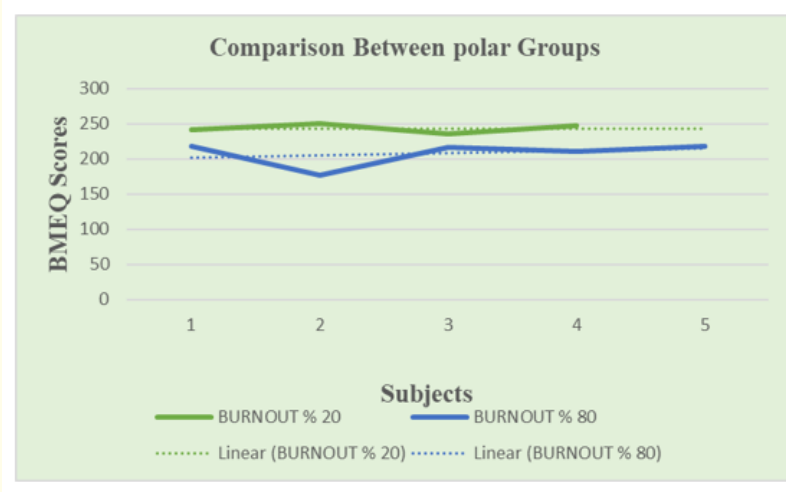
Results

Twenty subjects, who met the inclusion criteria, were recruited for the pilot study. Graph 1 shows the scores distribution obtained in the Chafic Jbeili questionnaire (screening for Burnout Syndrome).



Graph 1: Burnout screening scores.
Average = 48.05.
Standard Deviation = 20.74.

From this distribution the polar groups were compared. The results indicate that subjects with lower scores on the Chafic Jbeili questionnaire (screening for Burnout Syndrome) have significantly higher scores in relation to musical experience ($p < 0.05$), according to graph 2, below.



Graph 2: Comparison between the polar groups of the distribution (Burnout) as a function of musical experience (Brief questionnaire on musical experience).

Average (Burnout % 20) = 243.50.

Average (Burnout % 80) = 207.80.

Discussion and Conclusion

The present study is part of a research that will include about 300 subjects, employees of the healthcare staff of the Hospital das Mercês (São João del-Rei/Minas Gerais/Brazil). The sample of 20 subjects will serve to show the trends of the study. Because of this still small sample universe, it was not possible to investigate other aspects such as possible gender differences or differences among the various sectors of the hospital. It is expected that such data can be generated from the target sample of 300 subjects.

As demonstrated, the trend that the musical experience acts as a protective factor in the stressful environment in the hospital setting may indicate future preventive strategies regarding the level of stress in health care teams, such as the inclusion of musical practices for the health care team members.

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