Original Article

Analysis Of Educational Music Interventions Delivered In Out-Of-School Settings

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Abstract

This study aimed to assess the effects of educational music interventions which were delivered in situations outside the school setting. A systematic search was conducted in Scopus, PubMed and Google Scholar databases in order to analyze previously published research works on educational music interventions delivered in out-of-school settings. We scanned the online literature for articles with keywords like music intervention educational music therapy, music therapy and cancer patients, music therapy and anxiety, music therapy and depression. As a result of research conducted previously, there is compelling evidence that actively participating in educational music intervention can lead to a wide range of abilities exhibited by participants. In general, the results of the literature analysis show that educational music interventions have positive effects on patients' quality of life as well as their emotional well-being. In conclusion, educational music interventions have the potential to reduce negative emotional states and improve the quality of life for patients in various non-school settings, and appear to be a promising alternative to medications.

Keywords: Educational Music Intervention, Music, School, Out of School Settings

INTRODUCTION

In most out-of-school settings like hospitals, outpatient encounters and clinics, music intervention is one of the most important components of the patients' treatment plans. Through various music activities, music intervention can shape unconsciously the identities of individuals, strengthen their personal values, help them achieve their physical and mental goals, and cultivate their sense of cooperation and affection for music. As a result, it is a good way to cultivate a healthy psychology among individuals. Throughout our lives, music has been a part of our lives since the beginning of time. It surrounds us every day, and we make the most of it by listening to it. As Anne (2016) astutely points out, the degree to which musical awareness, capacity, and sensitivity are embedded into the human brain, are by-products of other established orders in the culture of music, or are influenced by them in some way, is influenced by the extent to which programming has been implemented in the brain. The importance of music plays a crucial role in just about every aspect of our lives, and it would appear that it is deeply woven into the human nature to adore music. As a result, the use of music in the teaching and learning process can provide students with an environment in which learning is fun and enjoyable. Additionally, music is one of the most effective ways to promote the development of a wide range of skills, such as literacy for instance, through a variety of ways in which it can be utilized (Bokiev et al., 2018).

The same applies to music as a tool for developing language skills in the same way as well as to improve all the skills related to speaking, listening, reading, and writing, it may be applied to all these areas as well, beginning with the grammatical structure and vocabulary of language, moving onto fluency, stress, rhythm, and pronunciation (Rosová, 2007). As well as providing valuable learning opportunities to people, music also contributes to their cultural awareness, as well as fostering a sense of belonging within their learning environment. Thus, through proper music

selection, literacy classes can be made more enjoyable and less rigid as a result. Individuals can participate in a variety of music-integrated activities in the classroom, including singing, dancing along with songs, playing music games, charades, and other activities that have music as an integral part. Using songs in our classroom in order to enhance the memory of text would be a great way to enhance the learning process and could also be useful for the acquisition of language (Tse, 2015). In the context of musical intervention, music education is one of the most important modalities. It is a process of knowledge construction aimed at instilling a sense of appreciation and a taste for music. As well as developing sensitivity, creativity, sense of rhythm, pleasure in listening to music, imagination, memory, concentration, attention, self-discipline, respect for others, socialization and affection, as well as an awareness of one's body and movements in general, these are among the many benefits that this educational method offers. Music has been shown to improve individuals' ability to understand and learn various topical issues as evidenced by research (Bréscia, 2003; Correia, 2003).

In this context, music can also contribute significantly to increasing concentration and individual performance (Snyders, et al., 2009). A number of studies have shown that music interventions are effective in improving motor, language, social, and cognitive abilities (Costa-Giomi, 2004; Forgeard et al., 2008; Standley, 2008; Jentschke and Koelsch, 2009; Yazejian and Peisner-Feinberg, 2009; Strait et al., 2010). As a means of self-expression, music has a great deal of potential to contribute to an individual's education, because it provides an outlet for emotions and feelings and allows them to express their self. In addition to being a source of enjoyment, music is also one of the most effective means of communicating with other people (Suthers and Niland, 2007). Basically, music can be very beneficial to people in many ways, including challenging their brains and exposing them to a wide variety of multi-sensory experiences, as well as developing their cognitive skills and enhancing their ability to learn. Specifically, music is also capable of engaging cognitive functions such as planning, working memory, inhibition, and flexibility, among others. As the name implies, these functions are known as executive functions. It has been proven that music can be used for a variety of interventions, including music-assisted imagery, playing an instrument, listening to music, selecting songs, relaxation/imagery assisted by music, singing, reviewing the life of music, writing songs, entrainment, lyric analysis, improvisation, and verbal processing (Clements-Corte, 2016; Kordovan et al., 2016; Gutgsell et al., 2013).

Typically, there are several types of interventions in which patients can take part, from receptive interventions to recreational interventions to creative interventions to combined interventions, and the level of participation of each patient varies depending on his or her energy level and the ability to manage his or her symptoms at the time of the intervention (Clements-Corte, 2016; Gutgsell et al., 2013). There is a growing recognition that educational music interventions can also be used outside the classroom, and over the course of several decades now, music intervention has been used more frequently and consciously as a means of care to help reduce or stabilize symptoms or complications. This has been found to be the case in a variety of diseases, including chronic and degenerative diseases (in the fields of psychiatry, child neuropsychiatry, neurology, oncology, and palliative care) (Bradt et al., 2011; Erkkilä et al., 2011; Mössler et al., 2011; Raglio et al., 2012; Bradt and Dileo, 2014) and when the symptoms are just momentary in nature, such as the approach can also be used by hospitals before surgical interventions to reduce anxiety and stress or to reduce the perception of pain during various forms of invasive medical procedures, to minimize the perception of pain and anxiety during such procedures (Bradt et al., 2013; Cepeda et al.,2013). Furthermore, music contributes to the feeling of well-being as well as facilitating the expression and regulation of emotions, as well as enhancing communication and relationship between individuals, and music also contributes to a sense of belonging (Hillecke et al., 2005). In recent years, the scientific community has become increasingly aware of the psychological and physiological benefits of various types of music interventions in hospitals (Barrera, Rykov, and Doyle (2002), Cepeda et al. (2006), Kuhn (2002)), and a large number of papers have been published that describe the effects of these interventions. This study, however, aimed to examine the effects of educational music interventions in situations outside of the school settings.

METHODOLOGY

Using the PubMed, Scopus and Google Scholar databases, a systematic search was conducted. There were several key words that were used during the search, such as music intervention and chemotherapy, educational music therapy and out of school settings, music therapy and cancer patients, music therapy and anxiety, and music therapy and depression.

RESULTS AND DISCUSSION

Table 1: Empirical studies on educational music interventions delivered in out-of-school settings

References	Objective	Method/ sample	Results
Silverman (2016).	In the study, the objective is to investigate whether group-based educational music therapy can have an immediate impact on the state of hope for recovery within acute care mental health patients who are receiving acute care treatment.	The study consisted of a single-session, three-group cluster-randomized design, with a single session of training. Participants in the study (N = 169) were inpatients on a mental health ward with acute care.	The results showed that there was no significant difference between the two groups. It was observed that both music therapy conditions tended to have higher mean score for pathways, agency, and total state hope than the control condition, even within the confines of a single music therapy session, even though they were within the temporal parameters of a single session. In relation to lyric analysis and songwriting interventions, there was no significant difference between groups.
Chadder (2017).	In this study, the purpose is to further understand the experiences and perceptions of healthcare professionals regarding music interventions within hospitals, as well as the effectiveness of the interventions.	The study was an exploratory design. A total of 31 participants participated in this study, each completing a face-to-face interview as part of the study	In the study, it was found that healthcare professionals have a minimal understanding of the research surrounding the use of music in hospitals based on what was found in the study.
Lee et al. (2022).	In the study, the role of music intervention in fetal education in pregnant women was examined.	In the study, fetal monitoring with a Doppler Doppler unit was used in the prenatal examination.	According to the results of the study, the fetuses showed significantly less fetal movement in response to fixed singing activities. There was, however, a significant fetal movement response to irregular singing in the case of the fetuses. As a result of the research, the results showed that the fetus receives external sounds through hearing, and that a pregnant woman singing

			fixed music to her fetus during pregnancy can stabilize the frequency of the fetal movement, promote the health of the mother and the fetus, and establish a maternal-fetal bond.
Lok (2013).	An investigation was undertaken to investigate nurses' awareness of and intention to use music therapy for the management of anxiety and pain, as well as factors that are likely to influence nurses' intention to implement music therapy in the future.	In order to conduct the study, a correlational, survey-type design was used. This study used a sample of 161 Registered Nurses in Ontario who were providing direct care to patients in acute care, rehabilitation, and long-term care settings at the time of the study	An important finding of the study was that nurses' intentions to use music therapy for the management of anxiety and pain were positively and moderately correlated with several factors (attitudes, subjective norms, perceptions of behavioural control, moral norms, and knowledge of the importance of music therapy for anxiety management, pain management, and rehabilitation medicine). As a result of the study, the nurses' role beliefs, selected demographics and professional characteristics were not significantly related to their intention to use music therapy for either anxiety or pain management. Nurses reported that factors such as patient, nurse, and unit factors influenced the way in which they used music therapy as part of their practice.
Sánchez-Jáuregui et al. (2018)	The aim of the study was to evaluate the effects of an audio-recorded clinical hypnosis intervention and a music session on anxiety, depression, stress, and optimism levels of women scheduled for breast biopsy as compared with a control group.	A randomized clinical study with 170 patients.	A statistically significant reduction in stress, pain, anxiety, and depression was found in the hypnosis and music groups when compared with the control group in relation to stress, pain, anxiety, and depression. Compared with music, hypnosis significantly decreased pain and depression levels before biopsy, but after biopsy, there was no

			significant difference between the groups in terms of pain and depression levels.
Alcântara-Silva et al. (2018)	It was the purpose of this study to investigate the effect of music therapy on the reduction of fatigue suffered by women undergoing radiotherapy for malignant neoplasia of either the breast or gynecology,	Experimental design with 164 women.	A significant difference was found between the MTG and the CG regarding the Trial Outcome Index (P = .001), FACT-G (P = .005), and FACT-F (P = .001). It is also important to note that individual music therapy sessions may also be helpful in reducing fatigue associated with cancer and depressive symptoms, as well as improving quality of life for women who are undergoing radiotherapy for breast or gynecological cancer.
Chen et al. (2018)	The aim of the study was to determine whether self-directed music intervention and group music intervention can have a positive effect on anxiety, depression, and cognitive appraisal in women diagnosed with breast cancer.	A quasi-experimental design	Group music intervention showed a significant immediate effect on decreasing anxiety, helplessness, hopelessness, and anxious preoccupation compared to the other two groups at 3-month follow-up. Group music interventions were also found to have significant effects on reducing anxiety, depression, helplessness, hopelessness, and cognitive avoidance.
Bro et al. (2019)	Specifically, the study aim to determine whether listening to live or pre-recorded music during chemotherapy decreases anxiety among newly diagnosed lymphoma patients during the course of their treatment.	Experimental design	There was a borderline statistically significant reduction in anxiety in the live music group, compared to the standard care group, whereas there was no statistically significant difference in the pre-recorded music group compared to the standard care group.
Gallagher et al. (2018)	This study was designed to investigate the effects of music therapy	A retrospective study of 293 patients.	Compared to the control group, there was a significant improvement in pain, anxiety,

	sessions on patients who were undergoing music therapy; identify common music therapy goals and interventions and assess their effectiveness on patients experiencing music therapy; and examine the effects of gender, age, and type of cancer on symptoms in patients undergoing music therapy.		depression, shortness of breath, mood, expressions on the face, and vocalization scores. Furthermore, 96% of patients who participated in music therapy had positive responses to the experience. In terms of improving symptoms, vocal and emotional interventions were the two most effective interventions.
Dadkhah et al. (2019).	The study was conducted in order to determine whether music and periorbital massage therapy could reduce nausea and vomiting associated with chemotherapy when patients with cancers of the gastrointestinal tract were receiving chemotherapy.	In the randomized clinical trial, 60 patients with gastrointestinal cancer who were undergoing chemotherapy were randomly assigned to the control group or to the music plus massage therapy group. We conducted a randomized clinical trial study where 60 patients with gastrointestinal cancer underwent chemotherapy were randomly assigned to the control group as well as to the music and massage therapy groups.	The combination of music and periorbital massage therapy significantly reduced nausea and vomiting in chemotherapy patients compared to those who did not receive music and massage therapy.
Tuinmann et al.(2016)	It was the objective of this study to find out if music therapy (MT) combined with standard supportive treatment had an adverse effect on quality of life, depression, anxiety, side effects of therapy, medications, and immunological changes, during and within the	Experimental design with 66 patients.	Patients who received additional MT did not experience a significant improvement in their global quality of life, however their perception of pain significantly changed as a result. On admission, neither the patients were depressed nor anxious, so there was no evidence of improvement.

	first three months following high dose chemotherapy plus autologous stem cell transplantation (ASCT).		

For the purpose of providing a comprehensive overview on the effectiveness of educational music interventions that are delivered beyond the classroom, a systematic review has been conducted. Only studies that investigated music interventions in out-of-school settings were included in this review. Among the techniques used by music therapists in the examined studies (see Table 1), an array of approaches were utilized, including relaxation and imagery, listening to music with a therapist, improvisation, and songwriting, among others. In Silverman's (2016) study, lyric analysis and songwriting were the interventions used in the study. Chadder (2017) provides a brief overview of music therapy, which includes interactive sessions led by music professionals (but not trained therapists), live concerts where patients can see musicians playing, as well as listening to recorded music by the musicians (Chadder, 2017). Among the additional activities are attendance songs, lullabies, and goodbye songs, as well as music activities such as singing time, chanting, music storytelling, and music appreciation (Lee et al., 2022). As a part of Alcântara-Silva et al.'s (2018) study, the intervention that was chosen was to have each participant listen to music at three different times during the course of each session during the therapeutic period. In terms of the music interventions, the conceptualization of these interventions in studies did not seem to be uniform in their approach. Several of the tasks listed above were described as quite broad and included a variety of activities such as listening, singing, playing an instrument, performing, moving around, and being creative with music. There is a great deal of importance to give attention to differences in musical content when it comes to achieving the desired outcomes of music interventions. Interventions conducted in groups may have an additional benefit of encouraging social interaction and motivating the participants, in addition to the effects of the intervention itself, which may have contributed to the outcomes of the intervention as compared to those conducted individually. There was also an acknowledgement in this review that the role of the therapist was also considered to be one of the most significant factors to consider. Throughout all of the reviewed studies, music therapists were responsible for implementing the intervention on the patients. (Professional) music therapists were employed in all the studies included in the review. As a result, we can say that the intervention is one that is assisted by a therapist. An intervention with music has been investigated in five studies on a variety of study samples in relation to anxiety and pain. There was one study that focused specifically on music interventions during chemotherapy. As a result, six studies were conducted using an experimental design (Tuinmann et al., 2016; Dadkhah et al., 2019; Bro et al., 2019; Chen et al., 2018; Alcântara-Silva et al., 2018; Sánchez-Jáuregui et al., 2018) and one study used a correctional design (Lok, 2013). According to the study conducted by Lee et al., (2022) a Doppler fetal monitor was used for the prenatal examination.

There are a number of implications that can be drawn from the findings of this study that extend beyond school music therapists to professional music therapists because medical practitioners and patients have a need to understand contemporary practices in educational music intervention. As a result of the understanding of the various intervention-delivery models and variables that impact clinical decisions, further research may be conducted regarding the impact of the different intervention models on reaching the intervention goals, which is expected that this will enhance the effectiveness of music therapy interventions through the use of evidence-based practice. To facilitate the implementation of educational music interventions in clinical practice, this study suggests the need for strategies aimed at educating medical practitioners about these interventions in order to facilitate their use. The use of music therapy in medical settings as an intervention is not yet well understood by medical practitioners, and so it is necessary to conduct additional research to explore the reasons for this, as well as revising the current conceptual framework to include additional factors that influence the use of music therapy in medical settings. In order to properly determine the effects of educational music intervention on a variety of study samples, more well-designed research studies are needed. The process of musical interaction is likely to be fluid and variable (Hallam and MacDonald, 2013), though robust and detailed intervention procedures might help to enhance practitioners' ability to implement the interventions in their own settings more effectively. A variety of different approaches were taken in the studies by the researchers to describe the effects of educational music interventions in out of school settings. When describing the effects of

educational music interventions, the methodological accuracy and the variety of different approaches should be taken into account. In order to evaluate educational music interventions outside of the school setting, further RCTs are needed, since RCTs have the most power for evaluating interventions than any other type of research design. The process of blinding, randomization, and controlling for potential sources of variability in RCTs is often difficult if not impossible, and this may create a false situation in which the findings may not always be applicable to everyday life if they are not blinded, randomized, and controlled. As there are so many educational music interventions available, it has become extremely difficult for researchers to recruit sufficient students with similar needs and who are working on similar objectives in order to conduct research in this area. Research projects that could produce statistical evidence supporting or denying educational music interventions can be difficult to implement because of the diversity of educational music intervention practices. As it stands, however, it is important to note that 'music interventions have been at the center of significant attention for many decades in the broad field of research, with many clinicians and academics attempting to obtain whatever resources they could in order to conduct studies, report the results of studies and carry out research' (Wigram et al., 2002, p. 221).

CONCLUSION

It has been shown that educational music intervention can be incorporated into out-of-school environments as a part of a treatment program and could potentially improve the quality of life of the individuals involved in the program. We observed that there were statistically significant results in the reviewed studies in relation to fatigue, quality of life and depressive symptoms after music intervention was delivered. As a result of a better understanding of the effects and possible influencing factors of music in out of school settings, further investigations should be conducted on the subject. Also, the reviewed literature suggests that educational music intervention provide professionals with the ability to rethink and adjust procedures to achieve effective responses to treatment, along with the reduction of the number of patients who abandon treatment due to the fact that they are unable to get the desired results as a result of not receiving the treatment they need.

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