Cureus

Open Access
Abstract
Published 09/06/2023

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The influence of music therapy on pain, nausea, vomiting and stress in adolescences with cancer: a pilot study

Filippo Giordano [1] , Caterina Ugolini [2] , Erika Iacona [2] , Chiara Rutigliano [3] , Mariateresa Giglio [4] , Nicola Santoro [3] , Ines Testoni [2] , Filomena Puntillo [5]

1. Department of Emergency and Organ Transplants, University of Bari Aldo Moro, Bari, ITA 2. ISPPA, Università degli studi di Padova, Padova, ITA 3. Pediatric Hematology and Oncology Unit, University Hospital of Bari, Bari, ITA 4. Department of Intedisciplinary Medicine, Università degli studi di Bari, Bari, ITA 5. Department of Intedisciplinary Medicine, University of Bari Aldo Moro, Bari, ITA

Corresponding author: Filippo Giordano, filippo.giordano@uniba.it

Categories: Pain Management
Keywords: cancer pain, music therapy

How to cite this abstract
Giordano F, Ugolini C, Iacona E, et al. (September 06, 2023) The influence of music therapy on pain, nausea, vomiting and stress in adolescences with cancer: a pilot study. Cureus 15(9): a1007

Abstract

INTRODUCTION: Despite numerous antiemetics, adolescent undergoing chemotherapy (CM) are exposed to both somatic and psychological side effects as pain, nausea, and vomiting. Recent studies underline the need to consider integrative non-pharmacologic treatments (INPT) as adjunct interventions. Music therapy (MT), defined as the clinical and evidence-based use of music interventions by a trained professional in order accomplish individualized goals within a therapeutic relationship, is increasingly used as an INPT during oncological treatments. The primary aim of this study was to evaluate the feasibility of introducing MT during CT and investigating effects on anticipatory symptoms of nausea, anxiety, and vomiting, as well as on pain, in adolescent patients. The secondary aim is to investigate the effects of MT on coping and parasympathetic tone activity. METHODS: A pilot, single-group, quasi-experimental study, using a pre-/post-test design was conducted. Ten adolescents affected by cancer and hospitalized at Hematology-Oncology Pediatric Unit of the University Hospital Bari, were invited to participate in this study. Participants received 4 individual sessions of MT (45 min), by a certified music therapist, in preparation for and accompaniment to CT. Anxiety was measured with State-Trait-Anxiety Inventory (STAI-Y1) short-form. A 0-4 likert scale for pain, nausea and vomiting were recorded 30 minutes before and after CM. The neurological reactivity with heart rate variability was collected during sessions. Autonomic neurophysiological status was reflected by the amplitude of high-frequency (HF) and low-frequency (LF) waveforms (LF/HF ratio). Pediatric Quality of Life Inventory (PedsQL) was collected before and at the end of the trial. A semi-structured remote interview will be carried out by a psychologist researcher. RESULTS: A significant reduction of STAI-Y1 [F(1,63) =39,157 p <0,001], nausea [F(1,63) =17,193 e p < 0,001], and vomiting [F(1,63) =8,411 e p=0,005] pre/post single session was observed. A significant reduction of STAI-Y-1 [F(3,63) =3,044 e p=0,035], nausea [F(3,63) =7,357 e p < 0,001)] and vomiting [F(3,63) =4,749 p=0,005] between different session was observed. An increase of para-sympathetic activity (LF/HF) during MT sessions, and PedsQL score was observed [F(1,63) = 40,607 e p<0,001]. Recurrent themes emerged from interviews were lightness, calm, distraction from the pain, positive moods, and new perspectives for the future. CONCLUSION: Preliminary results show the feasibility of introducing music therapy as a INPT with adolescents undergoing CM. Furthermore, MT could be used to manage pain, anxiety, stress, and anticipatory symptoms of nausea and vomiting in chemotherapy as adjunct interventions. The positive feedback of patients and the indication of a positive clinical impact would suggest the importance of further investigation how to better integrate music therapy in oncological setting.

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