



Original article

Playing music improves well-being of oncology nurses



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ARTICLE INFO

Keywords:

Anxiety
Depression
Nurses well-being
Oncology nurses
Stress

ABSTRACT

Background: Nurses experience high levels of stress associated with the demands of their workplace. Anxiety and depression symptoms are common in this occupational group and the necessity of supportive actions is vital. This is especially true for nurses working in high intensity and demanding settings such as oncology units.

Aim: This study examined the effects of a music intervention on anxiety, depression, and psychosomatic symptoms of oncology nurses.

Methods: Forty-eight oncology nurses, were randomized to either an intervention group ($n = 22$) attending four consecutive weekly 1-h music classes or a control group with no intervention ($n = 26$) who maintained their usual lifestyle habits, for one month. Intervention group played and improvised music using percussion instruments. Courses consisted of varied multitask exercises of progressive difficulty, sometimes involving team playing, or individual performances. Depression, anxiety, and physical symptoms were measured before and after the end of the intervention. Anxiety and depression were assessed with the Hospital Anxiety and Depression Scale. Psychosomatic symptoms were assessed with Pennebaker Inventory of Limbic Languidness.

Results: Anxiety, depression and psychosomatic symptoms significantly reduced for the intervention group at the end of the study. No statistical significant change was observed for the control group in any of the three psychological indicators.

Conclusion: The findings of our study highlight the fact that music can be a cost-effective resource in developing interventions to reduce stress and improve well-being. Playing music can be the next step for further investigation, since we already know that listening to music is beneficial.

1. Introduction

During the past decade several studies have highlighted the fact that health professionals, nurses in particular, are getting increasingly more stressed out with significant consequences for their health and well-being. This is more evident in countries where the economic crisis and the associated cuts in healthcare costs have led to an increase in work strain. For example, Adeb said that recent studies have shown that health service staff experience high levels of occupational stress and that stress is much greater for nurses who work within the critical care environment (Adeb-Saedi, 2002). According to a study in Greece in 2013, 1 out of 4 nurses showed clinical symptoms of anxiety, while 1 out of 7 nurses showed clinical symptoms of depression (Kalogeropoulou, 2013). Studies show that nurses working in oncology units in particular, experience heightened levels of psychological strain (Dougherty et al., 2009; Johnston, Jones, Charles, McCann, & McKee, 2013; Pierce et al., 2007). Boyle (Boyle, 2015) mentioned that nurses witness tragedy in their daily work and are secondary survivors of others (patients) health crises. Oncology nursing in particular is

complex and demanding, because patients experience long and aggressive treatments, surgeries, suffering and fear, feelings of desperation, panic and death (Faria & Maia, 2007; Rodrigues & Chaves, 2008). In particular, the dilemma of cure and end-of-life care has been found to influence oncology nurses and contribute to high burden and stress (Rohan & Bausch, 2009; Sehlen et al., 2009). All above stressors have a significant impact on nurses physical health and well-being. For example, compared to other professionals, nurses show the highest rates of musculoskeletal disorders (Vieira, 2007).

Several types of interventions have been implemented in an attempt to reduce the impact of work strain on nurses (Halm et al., 2005; Vahey, Aiken, Sloane, Clarke, & Vargas, 2004; Van Dick & Wagner, 2001). These have focused either on the individual and included cognitive-behavioral training, mental and physical relaxation, or the organization (Ruotsalainen, Verbeek, Mariné, & Consol, 2015). Organizational interventions are usually consisting of changes in working conditions, organizing support, changing care, increasing communication skills and changing work schedules (Ruotsalainen et al., 2015). Although relaxation interventions have been used more frequently, cognitive-

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behavioral programs consistently produced larger effects, while organizational interventions are still quite scarce (Richardson & Rothstein, 2008).

At the same time, while arts have been extensively used in several patient groups to improve physical and psychological well-being (Boehm, Cramer, Staroszyński, & Ostermann, 2014), they have very rarely been used to develop interventions addressing healthcare professionals. Music is one of the most frequent arts used in healthcare. Music therapy in specific has been found to have significant effects on physical and psychological health in several settings. For example, an early trial of hospitalized patients after myocardial infarction showed that compared to patients who received routine care, patients in the music group had significantly reduced anxiety score (White, 1992). Randomized trials also demonstrated that listening to recorded music reduces anxiety before and after surgical procedures (Kaempf & Amodèi, 1989; Mullooly, Levin, & Feldman, 1988; Wang, Kulkarni, Dolev, & Kain, 2002). Significant positive changes in cortisol were reported when listening to music before, during, or after medical interventions (Escher et al., 1993; Miluk-Kolasa, Obminski, Stupnicki, & Golec, 1994; Nilsson, Unosson, & Rawal, 2005; Uedo et al., 2004). Within that framework, music is seen as an alternative expressive modality and a way to get in touch with emotions and develop relationships (Erkillä, 1997; Erkillä & Erkillä, 2004; Koelsch, 2010).

Despite the proven beneficial effects of music on psychological well-being, music has been rarely used to reduce work related stress among health professionals. We found a study which evaluated the effects of music therapy on compassion fatigue and team building among professional hospice workers (nurses, social workers, and chaplains) with no effect on compassion fatigue (Hilliard, 2006). Also, Lai and Li (2011) investigated the effect of music on biochemical markers and self-perceived stress among nurses and found that participants had a lower perceived stress level, cortisol, heart rate, mean arterial pressure and higher finger temperature while listening to music (Lai & Li, 2011).

The purpose of this study was to examine the impact of music on well-being of nurses working in a high intensity setting, i.e. an oncology unit. In order to encourage individuals to be more actively involved in improving their well-being the study examined the beneficial effects of playing music, rather than simply listening to it. Consequently the aim of this study was to examine the effects of percussion playing on anxiety, depression, and psychosomatic symptoms in oncology nurses.

1.1. Setting

We conducted an experimental control study. Forty-eight oncology nurses ($N = 48$), working in a cancer hospital in northern Greece were randomly assigned to either an intervention ($n = 22$) or a control group with delayed intervention ($n = 26$). The intervention group attended four weekly supervised group classes of percussion music playing, while the control group maintained standard lifestyle habits, for one month. Percussion was selected as Bongo drum, Djembe, Doumbek and in some cases Maraca, Castanets, Triangle, Wood block, Ratchet and Tambourine.

1.2. Sample

Nurses were recruited through an ad in the hospital notice boards. Inclusion criteria were: (1) at least one year working experience in the hospital (2) no previous experience of any music classes (3) intention to attend the music intervention if randomized in that group. Participants currently on leave or on any form of psychotropic medication were excluded from participation. There was no control over whether the participants were working in the same department, only to be involved in the care of cancer patients rather than administrative tasks.

1.3. Ethics

The study protocol was approved by the Aristotle University of Thessaloniki Ethics Committee.

1.4. Procedure

Sixty five nurses expressed interest in participating. After screening for eligibility criteria the final study sample consisted of 48 nurses. Total participation rate was 19.2%. Twenty-two of the participants were offered 4 percussion music sessions, in addition to their usual lifestyle. The other 26 participants received no intervention and acted as the control group. Each percussion music session lasted 60 min and took place once a week. A music teacher helped the group to play and improvise music using percussion instruments. Courses consisted of varied multitask exercises of progressive difficulty, sometimes involving team playing, or individual performances. To assess differences in depression, anxiety and psychosomatic symptoms, participants in both groups completed the questionnaires at baseline, and immediately after the last music class.

1.5. Instruments

Socio-demographic data included information on age, gender, family status, educational status and working experience.

Anxiety and depression were assessed with the Hospital Anxiety and Depression Scale (HADS) which has been extensively been used to assess anxiety and depression in a non-psychiatric, and outpatient populations (Zigmond & Snaith, 1983). Responses are based on the relative frequency of symptoms over the past week, using a four point Likert scale and higher scores indicating greater likelihood of depression or anxiety.

Psychosomatic symptoms were assessed with the Pennebaker Inventory of Limbic Languidness (PILL) assessing people's tendency to notice and report a broad array of 54 physical symptoms and sensations (Pennebaker, 1982).

1.6. Analysis

Intention-to-treat analysis was conducted. Repeated Measures Analysis was used to assess between-group differences in change scores of psychological well-being from baseline to after the intervention. Paired Samples *t*-Test and Wilcoxon Signed Ranks Test statistical procedures were used for parametrical and non-parametrical variables. All statistical procedures made with IBM SPSS Statistics 21 software package.

2. Results

Table 1 shows sociodemographic information of study participants. None of the 48 participants who entered the trial, dropped out. Mean

Table 1
Socio-demographic data.

		Total	Intervention group	Control group
Gender	Women	46	21	25
	Men	2	1	1
Marital	Single	18	11 (50%)	7 (27%)
	Married	30	11 (50%)	19 (73%)
Children	0	15	9 (41%)	6 (23%)
	1	8	6 (27%)	2 (8%)
	2	15	3 (14%)	12 (46%)
	3	8	2 (9%)	6 (23%)
	4	2	2 (9%)	0
Education	Nurse assistants	10	6 (27%)	4 (15%)
	Registered nurses	38	16 (73%)	22 (85%)

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