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Reiki intervention for supporting healthcare professional care behaviors in pediatric palliative care: A pilot study

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Abstract

Objectives. Pediatric healthcare professionals (HCPs) working in a palliative setting may experience challenges during their clinical practice in addressing the complex end-of-life phase of children and their families. Nurses, especially, have a frontline role in providing assistance, thereby becoming at risk of physical and psychological burden. Pediatric psychologists have an ethical responsibility to help colleagues by proposing self-care interventions that will improve their well-being and, indirectly, the work climate. This study investigated the impact of a complementary therapy, delivered by a pediatric psychologist and a nurse, on physical and psychological variables among nurses at the Paediatric Hospice of the Regina Margherita Children's Hospital in Italy.

Methods. Thirty-five nurses participated in 5 weeks of Reiki sessions for an overall total of 175 sessions. The effect of the sessions was analyzed through a paired *t*-test analysis comparing the values of heart rate, oxygen saturation, and systolic and diastolic pressure collected before and after each session. The same test was conducted comparing the values of the 3 burnout subscales for each of the 35 nurses collected before the beginning of the first session with those collected at the end of the last session 2 months later.

Results. Results underlined a positive short-term effect with a significant decrease in heart rate before and after each session ($t = 11.5$, $p < .001$) and in systolic pressure ($t = 2$, $p < .05$). In addition, a decrease in emotional exhaustion symptoms was found ($t = 2.3$, $p < .05$) at the end of the intervention.

Significance of results. Reiki could be a valid strategy to complement traditional pediatric psychology clinical practice designed to protect HCPs from emotional and physical demands and to create a more supportive workplace for staff and patients alike.

Introduction

Pediatric palliative care (PPC) is a highly stressful setting that requires extensive skill from both physical and psychological points of view (Benini et al. 2022a, 2022b). In this particular care setting, pediatric nurses also have a frontline role in providing palliative care because they spend the most time at the bedside of children during the last days of the patient's life, near parents and siblings. Nurses wish to provide quality supportive care for patients and their families, but several issues may pose obstacles, such as lack of education (Deacy and Morrison 2015), lack of collaboration with the psychological team, and limited access to self-care interventions (Sansom-Daly et al. 2021). For these reasons, nurses are to be considered a vulnerable population at extreme risk of experiencing levels of physical and emotional stress, which, if not recognized, can turn into a real clinical problem such as burnout (Hosseini and Homayuni 2022). In the PPC setting, pediatric psychologists are increasingly being recognized as making contributions that are as unique and valuable as those of clinicians, researchers, and advocates (Thompson and Kentor 2021). Pediatric psychologists have the arduous task of providing assistance to the healthcare staff in the especially challenging setting of a pediatric palliative unit through the proposal of rapid and concrete interventions that effectively improve the well-being of workers but can also act indirectly on the workplace climate and on the quality of care and assistance delivered to children and their families (Garcia et al. 2022). An important lesson has already been learnt during the Covid-19 pandemic from pediatric psychologists proposing different models of intervention (e.g., telehealth), which were found to be useful not only for patients but also for colleagues such as pediatricians in primary care (Stancin 2020) or pediatric

psychologists in an oncology setting (Zucchetti et al. 2020a). In addition to the interventions typically used, during the pandemic, other interventions known as complementary and alternative medicine were integrated with the usual psychological practices (Barnett and Shale 2012; Barnett et al. 2014; Hart 2020).

In the pediatric field, the use of unconventional interventions that accompany regular clinical psychological practice is increasingly accepted by healthcare professionals (HCPs) and parents themselves (Lorenc et al. 2009). Among these interventions, for example, the practice of extreme sport has allowed children and adolescents with cancer to retain a sense of their uniqueness, to express emotions and moods, to activate useful resources, and to feel like a "normal person" despite their illness (Zucchetti et al. 2020b). Another promising intervention to support psychological intervention is the practice of Reiki, an ancient healing art that involves the gentle laying on of hands to connect the universal life-force energy with the person's own innate power to heal. This treatment is individualized, can be empowering to the patient, and generally has no adverse effects or harmful consequences (McManus 2017).

In the field of PPC, Thrane and colleagues have demonstrated the efficacy of Reiki in improving quality of life, reducing stress, and stabilizing oxygenation, heart rate, and respiratory rate in children and their families (Thrane et al. 2022).

As well as for patients, Reiki has also been shown to be useful for HCP staff in preventing burnout (Burden et al. 2005), thus proving its utility and power on several fronts. A recent study has demonstrated that a REIKI distance program is able to decrease stress anxiety and pain, respiratory and heart rate in healthcare engaged in stressful work experience (Dyer et al. 2023; Hailey et al. 2022).

Most of the studies were conducted in adult settings, while, to the best of our knowledge, studies about the possible benefits of Reiki among professionals in PPC are limited.

The current pilot study aims to understand the underlying physiological mechanisms of how Reiki may be having therapeutic effects on subjective measures of burnout among HCPs.

As far as we know, no scientific studies have yet been conducted to evaluate the potential use of Reiki proposed by pediatric psychologists as a clinical practice for the psycho-physical support of healthcare workers in a PPC setting.

Methods

Setting and participants

The study took place at the Regina Margherita Children's Hospital in Italy, the referral center for pediatric pathologies in the northwest of Italy (Zucchetti et al. 2018). All the nurses who worked in the field of palliative care and fulfilled the inclusion criteria were asked to participate. The inclusion criteria were as follows: active nurse who had worked for more than 3 years as a nurse at an inpatient Paediatric Hospice; aged 18 years or above; informed consent.

Design

The Reiki practitioners were a senior pediatric psychologist and a senior pediatric nurse with, respectively, 10 and 12 years of experience in the pediatric field, who had received a national certificate as Reiki instructors at the Kidi Reiki School of Turin, Italy. They explained what Reiki is and how it is performed, and a written information folder was also delivered to nurses. Following informed consent from the nurses, demographic data were collected, and appointments for the Reiki therapy sessions were established. Reiki sessions were proposed to each nurse, always at the same time. Each nurse participated in 5 weeks of sessions, with a session once a week, for an overall total of 175 sessions. Every session consisted of a 30-minute Reiki therapy session that utilized a protocol of 5 hand positions, held for about 6 minutes each. The nurse could choose to lie on the bed or sit on the chair in the room dedicated to psychological support. The study was approved by the Ethical Committee of the Hospital (Prot. No. 0070779).

Assessment of primary and secondary outcomes

Data about physical and psychological variables were collected and recorded using a single code for each nurse at different points of the entire program. The primary outcomes of the study were some objective measurements on physiological markers of the autonomic nervous system (heart rate, oxygen saturation, and blood pressure).

Heart rate is the frequency of the heartbeat measured by the number of contractions of the heart per minute.

Oxygen saturation is the fraction of oxygen-saturated hemoglobin relative to total hemoglobin in the blood. Maximum saturation has a value of 100, while lower values are registered as under 100.

Blood pressure is defined as the pressure of circulating blood against the walls of blood vessels. Blood pressure is usually expressed in terms of the systolic pressure (maximum pressure during one heartbeat) over the diastolic pressure (minimum pressure between 2 heartbeats) in the cardiac cycle. For the objectives of the analysis, we considered systolic pressure and diastolic pressure as distinct measures. Heart rate, oxygen saturation, and systolic and diastolic pressure were collected before and after each Reiki session.

The secondary outcomes were the psychological variables measured through the Maslach Burnout Inventory (Maslach and Jackson 1981). The scale was administered at the beginning of the program, just before the first session (T0), and 2 months later at the end of the fifth session (T5). The Burnout Scale consists of 22 items that investigate 3 different dimensions of the phenomenon: Emotional Exhaustion, Depersonalisation, and Personal Accomplishment. The items are scored using a 7-level Likert scale, ranging from "never" (0 points) to "daily" (7 points).

The Emotional Exhaustion subscale has 9 items (theoretical range 0–63), Depersonalisation has 5 items (theoretical range 0–35), and Personal Accomplishment has 8 items (theoretical range 0–40).

Data analysis

A paired *t*-test analysis was conducted, comparing the values of the 3 burnout subscales of the 35 HCPs who participated in the program. We compared the values collected before the beginning of the program (T0) with the values collected at the end (T5). A paired *t*-test, also known as *t*-test for dependent sample, is a simple and effective method to verify possible significant differences between the same sample over time.

We used the same method to verify if the Reiki program had effects on the physiological variables, but we adopted a different approach.

Due to the specific characteristics of the Reiki sessions such as the short duration of the sessions (30 minutes), the distance

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between one session and another (1 week), the intensity, and the complexity of the Reiki method, we assumed that each session of each HCP was partially independent from the previous one. So instead of analyzing 35 HCPs, our sample consisted of 175 Reiki sessions (5 sessions per 35 HCPs). Also, in this case, we performed paired *t*-test analysis comparing the values of heart rate, oxygen saturation, systolic pressure, and diastolic pressure before (T0) and after (T1) each of the 5 sessions.

Results

Thirty-five nurses were enrolled. The CONSORT flow diagram that has been modified for a non-randomized trial is shown in Fig. 1. The sample was imbalanced in gender, with almost all professionals being female ($N = 31$, 89%) (Table 1). The mean age of nurses was 50 years old, but we detected a significant variability among professionals; the minimum age was 28 years, while the maximum age was 60, with a standard deviation of the sample equal to 11 years. This difference between age was consequently similar considering the seniority of work, with an average value of 19 years, a maximum value of 39 years of work, a minimum value of 1 year, and a total standard deviation equal to 11 years.

Considering the analysis of the possible effect of the Reiki program on burnout signals in HCPs, data showed a significant decrease in burnout value for the Emotional Exhaustion

Table 1. Characteristics of the sample

Whole sample	35
Gender	
Female	31 (89%)
Male	4 (11%)
Age	Mean age = 49
Years of work in pediatric palliative care	Mean years = 5

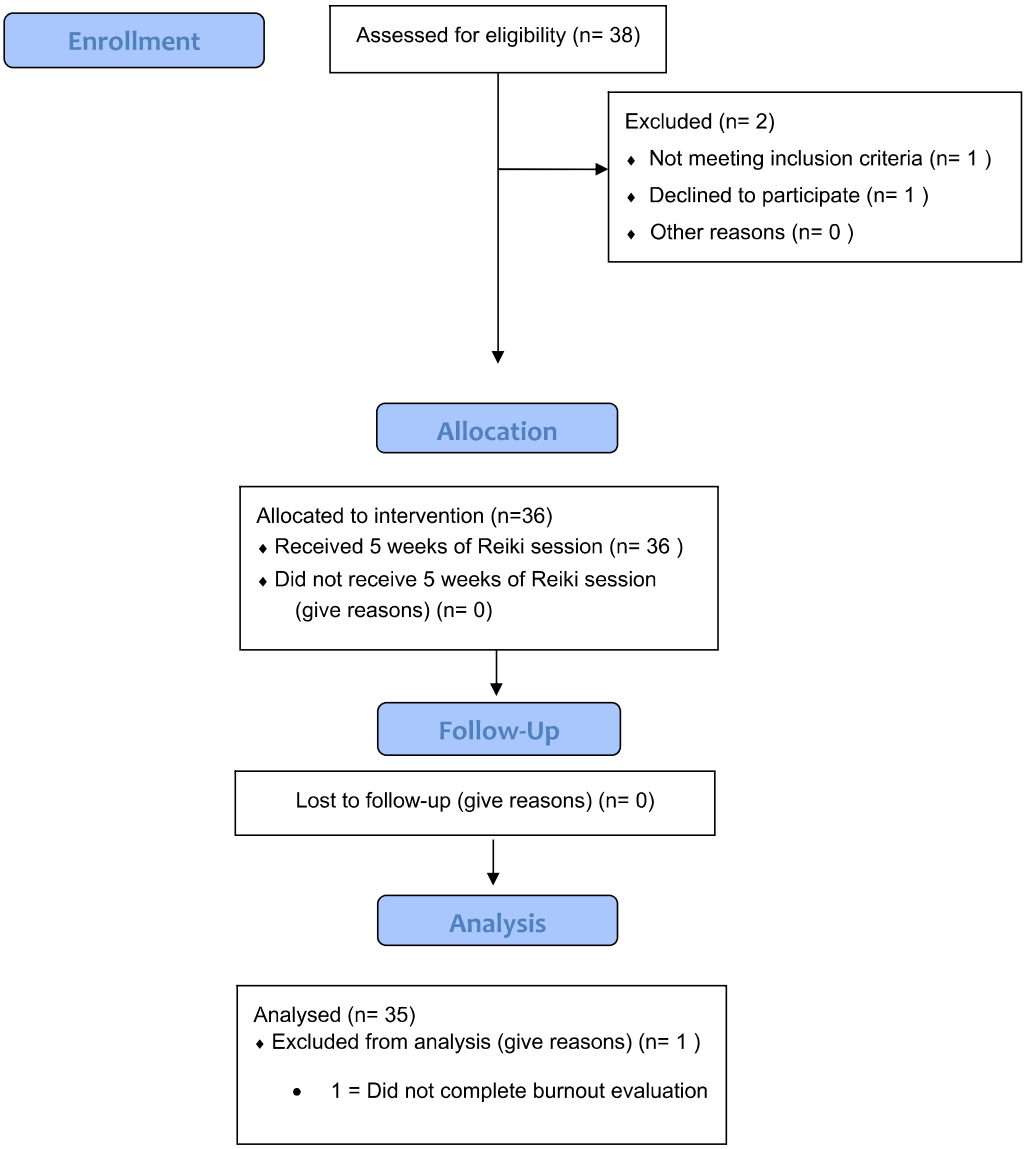

Figure 1. CONSORT 2010 flow diagram.
* Modified for non-randomized trial design

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Table 2. Effects of Reiki on physical variables (no. of participants, $n = 35$, no. of sessions, $n = 175$)

Variable	Mean T0	SD T0	Mean T1	SD T1	*t*-Test value	*p* Value
Heart rate	73.7	9.6	67.1	8.8	11.5	.001
Oxygen saturation	97.3	2.5	97.5	1.4	0.8	.43
Systolic pressure	122.9	16	121.2	16.6	2	.047
Diastolic pressure	72.2	13.8	72.7	11.7	0.4	.69

Table 3. Effects of Reiki on psychological variables (no. of participants, $n = 35$, no. of sessions, $n = 175$)

Variable	Mean T0	SD T0	Mean T1	SD T1	*t*-Test value	*p* Value
Burnout – Emotional Exhaustion	14.8	8.2	12.6	7.3	2.3	.028
Burnout – Accomplishment	39.3	5.6	39.9	5	0.7	.49
Burnout – Depersonalisation	2.8	3.4	3	3.7	0.3	.73

subscale ($t = 2.3$, $p < .05$, $d = 0.28$), while for Depersonalisation and Personal Accomplishment, no significant differences were highlighted before and after the program.

Regarding the possible short-term effects of Reiki sessions on physiological variables, data showed a significant decrease in the heart rate before and after the sessions ($t = 11.5$, $d = 0.73$). Also, data evidenced that systolic pressure was significantly lower after the sessions, even though the magnitude of the difference was limited ($t = 2$, $p < .05$, $d = 0.11$).

Finally, saturation and diastolic pressure were not significantly different either between or after the sessions.

Table 2 and Table 3 summarize the descriptive statistics and *t*-test results for each variable considered in the study.

Discussion

Pediatric intensive settings, such as neonatal wards or hospices, are particular workplaces in which HCPs are subjected to a higher level of burnout than others (Kumar and Mezoff 2020). In particular, in the last few years, the situation has definitely worsened because of the pandemic, which has created difficult professional situations, especially for those working with children and families in the EoL and bereavement stages (Haward et al. 2020). Also, today in Italy, the number of children who need PPC is estimated to be more than twice that of previous estimates, similar to the situation in other European countries (e.g., UK), requiring more available workers trained in the PPC field. In the face of such considerations, however, it becomes imperative to find solutions for supporting workers, especially those employed on the front lines, such as nurses, in order to improve their overall physical and mental health. This also becomes very important in order to improve employee retention and foster their solidarity in PPC. The unique role of pediatric psychologists in delivering important services is well recognized, not only to enhance the care of patients and families but also to provide support for the staff involved in stressful situations (Hildenbrand et al. 2021).

As a result of the experience of the pandemic, pediatric psychologists reported significant changes in the methodology of service delivery (Steinberg et al. 2020), which have also been useful for providers themselves by establishing increasingly effective partnerships between psychologists and other pediatric workers (Stancin 2020). Psychologists also noticed that these new approaches are related to their dynamics with medical teams, which included changes in team efficiency, workload, transition, and team collaboration (Schneider et al. 2022). Among the new approaches, we undoubtedly find complementary alternative therapies, such as Reiki, delivered by pediatric psychologists following the positive outcome already confirmed in children and adolescents with serious illness (McManus 2017; Thrane et al. 2022). Also, for HCPs, the positive impact on psycho-physical variables of these therapies has been highlighted (James et al. 2016), but to our knowledge, no studies have considered Reiki as therapy support for workers in PPC, such as nurses.

This study contributes to the progress of knowledge about the effectiveness of Reiki by offering more information to the scientific community about Reiki's clinical benefits.

Generally, our hypotheses about the effectiveness of Reiki therapy sessions among CPP nurses (based both on physiological and psychological dimensions) were confirmed at each time point considered. First of all, Reiki sessions were effective in the short term, decreasing the heart rate and systolic pressure before and after the sessions. These results indicate that Reiki may promote relaxation by reducing sympathetic activity among CPP nurses. Our findings are similar to those of previous studies, which showed decreased heart rate after the application of Reiki in both healthy subjects and HCPs with burnout syndrome (Díaz-Rodríguez et al. 2011; Mackay et al. 2004).

Heart rate and pressure constitute some of the biological substrates of our superior mental and emotional activities. This would explain the long-term positive effect of Reiki on emotional exhaustion: the short-term decrease in heart rate and systolic pressure can generate a sense of relaxation and less activation by involving a decrease in emotional exhaustion in the long term among participants. However, further studies should confirm these underlying physiological mechanisms of the effects of Reiki on subjective measures of burnout among HCPs in CPP.

Some limitations must be reported. Although the 175 sessions of our study represent an adequate sample of data that contributed to significant results, the partial dependence among the sessions, the non-normative nature of the sample, and the absence of the control group should be noticed. However, these results must be confirmed by further studies with a larger sample of nurses, possibly belonging to different centers to enable the random assignment of subjects to treatment and control groups. Also, a larger sample could allow a comparison of nurses' variables by taking into account some personal characteristics, such as years of work.

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Despite these limitations, this study has its merits. This is the first pilot study introducing Reiki as a complementary therapy, revealing that it is an acceptable and feasible therapy for use by psychologists in their clinical practice in the setting of CPP to improve physical health in the short term and also to decrease some feelings associated with the burnout syndrome. It can be an effective, non-intrusive, and complete strategy for the well-being of healthcare providers in workplaces with a high level of emotional burden, such as a pediatric hospice.

These results provide useful insights about the efficacy of Reiki, which can be shared not only with pediatric healthcare providers but also with parents and patients. Reiki, in fact, could be a valid option without requiring a long-term intervention, and its approach results feasible in different contests, since it achieves its goal immediately. With these results, the next aim should include the examination of possible effects of Reiki on some children's vital parameters (respiratory rate and cardiac function) and on the perception of stress to examine if the same results could also be produced among patients in a difficult period such as the end of life, thereby contributing to pain relief. Also, it would be interesting in future research to obtain qualitative feedback on HCP perceptions of the intervention (i.e., effects, perceived facilitators, and obstacles) through the use of semi-structured interviews with participants.

For proper feasibility, Reiki has to be practiced by pediatric psychologists experienced in Reiki. The use of Reiki therapy according to best practice criteria will allow practitioners to integrate clinical research with better psychological care. The fact that Reiki is practiced by a pediatric psychologist on a nurse sends an important signal of synergy between the 2 professions, which is essential for both the workplace climate and quality of care in this study (Hannawa et al. 2022). In fact, these professionals can choose, for example, to use this therapy during assistance activities (e.g., medications), offering both nursing assistance and psychological and empathic support at the same time for colleagues, patients, and parents.

This article highlights the unique and specific role of pediatric psychologists in terms of supporting PPC staff through potential strategies that can be used as complementary intervention to general clinical practice. This study will contribute to supporting the health system in the application of complementary therapies for providing holistic care, as suggested by the WHO traditional medicine strategy 2014–2023.

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