

Original Article

## The Impact of Pediatric Palliative Care Training on the Death Attitudes of Health Professionals

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### Abstract

**Background:** It is increasingly recognised that comprehensive training in pediatric palliative care cannot be achieved only through the acquisition of knowledge and skills but requires the cultivation of self awareness and acknowledgment of personal attitudes to death and dying.

**Aim of the study:** This study aimed to explore the impact of a pediatric palliative care training program on the death attitudes of a multidisciplinary team of health professionals.

**Methodology:** A sample of 83 health professionals (nurses, physicians, psychologists and others) participated in a quasi-experimental study. Participants in the intervention group (IG) (N=34) attended a 150-hour training program on pediatric palliative care, whereas the control group (CG) (N=49) received no training. All participants completed a questionnaire on demographics and the Death Attitude Profile-Revised (DAP-R) before (T1) and after (T2) the training program. A repeated measure analysis of variance (ANOVA) was used to identify any main or two-way interaction effects on the DAP-R subscale scores. **Results:** A two-way interaction was found in the Escape Acceptance subscale, with both groups having similar scores at T1, whereas at T2 the IG showed higher scores compared to the CG. A group difference was evident in the Neutral Acceptance subscale, with the IG showing higher scores than the CG at both T1 and T2. Moreover, time difference was found in this subscale, with scores at T2 being higher than at T1 for both groups. No statistical significant effects were detected for the other DAP-R subscales.

**Conclusions:** Pediatric palliative care training influenced trainees' death attitudes. Results indicated that confrontation with children's incurable illness and unavoidable death may generate mixed attitudes to death. Further research is needed to explore the process by which changes in death attitudes occur over time. Implications on designing and assessing the impact of pediatric palliative care educational programs are also discussed.

**Keywords:** pediatric palliative care, training, death attitudes, healthcare professionals

### Introduction

The fundamental goal of pediatric palliative education and training is to improve health professionals' knowledge and attitudes so as to

advance the quality of care for children with life-limiting conditions and their families (Sahler et al., 2000; Liben, Papadatou & Wolfe, 2008; Downing et al., 2013). Research evidence suggests a correlation between health professionals' attitudes

towards death and core aspects of the care provided to seriously ill and dying patients (Neimeyer, Wittkowski & Moser, 2004; Peters et al., 2013). More specifically, death attitudes influence professionals' attitudes towards caring for dying patients, their willingness to talk about death and dying, as well as interdisciplinary collaboration, decision making and clinical practices in the context of end of life care (Wessel & Rutledge, 2005; Barr, 2007; Black, 2007; Braun, Gordon & Uziely, 2010; Cevic & Kav, 2013; Harrison et al., 2014; Rodenbach et al., 2016).

Therefore, researchers underline the need for palliative care training and education programs to provide opportunities for participants to explore personal responses to patients facing incurable illness and impending death and to develop awareness of their attitudes towards death and dying (Papadatou, 1997; Vazirani, Slavin & Feldman, 2000; Serwint et al., 2000; Frommelt, 2003; MacLeod et al., 2003; Wass, 2004; Cevic & Kav, 2013; Rodenbach et al., 2016).

The vast majority of educational and training initiatives in palliative care are addressed to medical and nursing students and resident physicians (Gilan, van de Riet & Jeong, 2014; Kottewar et al., 2014) as well as to professionals caring for adult patients, mostly to nurses (Braun, Gordon & Uziely, 2010; Peters et al., 2013). Very few have a multidisciplinary focus (Black, 2007; Hegedus, Zana & Szabo, 2008), whereas even fewer programs are addressed to health professionals caring for seriously ill and dying children (Papadatou, 1997; Serwint et al., 2000; Vazirani, Slavin & Feldman, 2000; Bagatell et al., 2002; Browning & Solomon, 2005; Baughcum et al., 2007; Schiffman et al., 2008; Yazdani et al., 2010). These are mainly offered through undergraduate curricula (MacLeod et al., 2003; Liben, Papadatou & Wolfe, 2008), while postgraduate education and specialist training programs have been limited (Papadatou 1997, Serwint et al., 2000; Vazirani, Slavin & Feldman, 2000; Bagatell et al., 2002; Browning & Solomon, 2005; Baughcum et al., 2007; Schiffman et al., 2008; Yazdani et al., 2010). Most of these initiatives have the form of a module, clinical rotation, or involve short courses, brief workshops and seminars lasting up to a few days (Serwint et al., 2000; Browning & Solomon, 2005; Baughcum

et al., 2007; Yazdani et al., 2010; Zargham-Boroujeni et al., 2011; Friedrichsdorf et al., 2014). The majority aim to improve participants' knowledge, skills and attitudes regarding palliative care, to enhance their comfort in caring for dying children, to advance their communication skills in delivering bad news and thus increase their competence in discussing death and dying issues with patients and family members (Bagatell et al., 2002; Browning & Solomon, 2005; Rogers, Bagbi & Gomez, 2008; Yazdani et al., 2010; Korzeniewska-Eksterowicz et al., 2013; Twamley et al., 2013).

Very few interventions intend to sensitise health professionals on their personal responses towards death and promote their awareness of personal attitudes to life-threatening illness and dying patients (Berman & Villarreal, 1983; Papadatou, 1997; Serwint et al., 2000; MacLeod et al., 2003; Schiffman et al., 2008; Harris et al., 2015), even though the development of reflective practice and self-awareness have been identified as core competencies for professionals working in pediatric palliative care settings (Downing et al., 2013).

Assessment of death attitudes has not yet been included in the evaluation of pediatric palliative training programs; most relevant research is derived from programs addressed to professionals caring of seriously ill and dying adult patients. In this context, the evaluation of training and education has mostly focused on descriptive reports and measurement of participants' satisfaction, knowledge gained and perceptions of attained competence in providing palliative care (Peters et al., 2013; Frey, Gott & Neil, 2013; Gilan, van de Riet & Jeong, 2014; Anstey et al., 2016).

Few programs include repeated measure evaluations of death attitudes prior to and after the intervention, by means of a standardized measurement tool (Wessel & Rutledge, 2005; Dobbins, 2011; Göriş et al., 2015). Results on the impact of adult palliative care training programs on health professionals' death attitudes have been inconsistent and oftentimes conflicting (Durlak & Reisenberg, 1991; Gilan, van de Riet & Jeong, 2014). Various demographic variables have been identified to influence death attitudes, such as professionals' age, length of clinical experience,

level of education, cultural and religious backgrounds (Lange, Thom & Kline, 2008; Braun, Gordon & Uziely, 2010; Cevik & Kav, 2013; Peters et al., 2013; Zyga et al., 2015).

The aim of the present study was a) to assess the impact of a pediatric palliative care training program on the death attitudes of a multidisciplinary group of health professionals, and b) to explore how participants' death attitudes are affected by personal characteristics (i.e. gender, age, marital status, acquisition of children and personal loss experience) and work-related variables (i.e. professional specialty, years of clinical experience and previous education in palliative care).

## Methodology

### Design

This study involves a quasi-experimental pre- post design with an intervention (IG) and a control group (CG). The IG attended a 150-hour training program in pediatric palliative care, whereas the CG received no training during the same period. Data were collected through self-reported questionnaires by both groups at Time 1 (T1) (pre-training condition) and at Time 2 (T2) (post-training condition).

### Participants and setting

The sample comprised 83 health care professionals (37 nurses, 21 psychologists, 10 pediatricians and 15 other disciplines, such as social workers, music therapists and physiotherapists). Inclusion criteria for all participants were the following: completion of higher education and at least two years of clinical experience in pediatric settings for seriously ill and/or dying children. The IG consisted of 34 professionals and the CG of 49 professionals, while each group was made up of participants from different health care settings in order to avoid contamination.

The study took place at "Merimna", a non-profit organisation based in Athens, dedicated to the care of children and families facing illness and death ([www.merimna.org.gr](http://www.merimna.org.gr)). Being the sole Greek organisation specialising in pediatric palliative care and childhood bereavement support, "Merimna" has offered since its foundation in 1995

comprehensive training programs in the above fields.

### Ethical issues

Written informed consent was obtained by members of both groups regarding their participation in the program evaluation process. Questionnaires were anonymously completed by both groups and at both times. "Merimna's" Ethics Committee granted permission to conduct the study.

### Intervention

The 150-hour training program was designed in accordance to identified content of training and educational programs in pediatric palliative care (Papadatou, 1997; Sahler et al., 2000; NHPCO, 2003) and lasted 8 months (approximately 2 sessions per month, on fortnightly basis). The goal of the training was to advance participants' knowledge, skills and attitudes on the following core domains: a) alleviation of pain and other symptoms, b) communication and decision making with patient and family, c) ethical issues, d) child and family psychosocial and spiritual care, e) bereavement support, f) interdisciplinary teamwork, and g) self-awareness and reflective practice. The detailed content of the training program is presented in **Table S1**. Trainers had been academic scholars and experienced clinicians working with children facing a chronic and life-threatening illness and their families. The program complied with the 2<sup>nd</sup> Education Level: "General Pediatric Palliative Care", according to levels set by the EAPC Children's Palliative Care Education Taskforce (Downing et al., 2013). This level is aimed at professionals who are involved in the care of seriously ill and dying children but do not provide palliative care as the central focus of their clinical practice.

Didactic and experiential methods of teaching were used to facilitate the integration of knowledge and clinical experience and to promote a comprehensive learning process (Durlak & Reisenberg, 1991; Papadatou 1997; Yazdani et al., 2010; Gilan, van de Riet & Jeong, 2014). *Didactic methods* comprised lectures, video presentations, discussion of case studies, role-play exercises on active listening skills, and group discussions. *Experiential methods* involved self-reflection

exercises relating to participants' attitudes towards serious illness, death and dying. Moreover, each trainee had to accompany throughout the course of the training, a child or adolescent with a life-threatening or terminal condition, a family facing a child's serious illness, or a bereaved parent. During the program, participants received clinical supervision, discussed their cases in a group setting, and finally submitted a written assignment about their companionship experience.

### ***Instruments of data collection***

The training program was assessed for its effects on participants' (a) knowledge, (b) skills, and (c) perceived clinical competence in the aforementioned domains of pediatric palliative care, as well as (d) for its impact on trainees' death attitudes. In the present study focus is on the participants' death attitudes, and how these have been affected by the didactic content, the experiential methods of the training, and the supervised clinical experiences.

***The Death Attitude Profile–Revised (DAP-R)*** by Wong, Reker and Gesser (1994), is a 32-item instrument that uses a seven-point Likert scale (1=strongly agree to 7=strongly disagree) to assess respondents' attitudes toward death. It is comprised of five subscales: (a) *Fear of Death* (7 items), that measures negative thoughts and feelings about death, (b) *Death Avoidance* (5 items), that measures attempts to avoid thoughts and feelings about death, (c) *Neutral Acceptance* (5 items) measuring the extent to which death is accepted as a neutral reality that is neither welcomed nor feared, (d) *Approach Acceptance* (10 items) that measures the extent to which death is welcomed as an entrance to a happy afterlife, and (e) *Escape Acceptance* (5 items), determining whether death is viewed as an opportunity to escape from a life full of pain and suffering.

The mean subscale score is computed by adding the scores on each of the items divided by the number of items included in that subscale. A higher score indicates a stronger tendency to identify with that particular subscale. A substantial body of reliability and validity data has been accumulated for this measure (Wong, Reker & Gesser, 1994). In the present study, the Greek version of DAP-R was used, which has

demonstrated acceptable validity and reliability (Malliarou et al., 2011).

***Demographics and Personal Information Questionnaire.*** This questionnaire comprised questions about gender, age, marital status and having children, professional specialty, years of clinical experience, prior education in palliative care and experience with personal losses over the past year.

### **Data analysis**

A repeated measure analysis of variance (ANOVA) design was used to identify any main or two-way interaction effects on the DAP-R subscale scores. All demographic variables were entered into the analysis as covariates in order to investigate their effect on the DAP-R subscale scores. Significance level was set at  $p < 0.05$ . Missing values were replaced by the group mean. The cases that had more than half of their values missing were deleted. Descriptive analyses were performed to summarize and compare the demographic characteristics of participants. All categorical variables are shown as absolute (N) and relative (%) frequencies, while continuous variables are presented as Mean and Standard Deviation (SD). The SPSS 17 statistics software (SPSS Statistics for Windows, Version 17.0, Chicago: SPSS Inc., 2008) was used for the analysis.

### **Results**

Descriptive characteristics of the sample are presented in Table 1. The majority of participants in both groups were females (89%), ranged in age between 20 to 30 years (56.6%) and were nurses (44.6%) and psychologists (25.3%). Most of the participants were not married (72.2%) and did not have children (75.9%). A percentage of 57.8% of the sample had up to 5 years of clinical experience and another 57.8% reported prior education in palliative care. Among participants, 14.5% had experienced the death of a loved one within the previous year, 19.2% of them had experienced two losses, whereas 37.3% reported no losses. The two groups did not differ statistically in most of the demographic characteristics; however, more participants in the CG were married and had children, compared to the IG.

**Table S1:** Content of the training program

<b>Sessions</b> (10 hours each)	<b>MODULES</b>
1	<ul style="list-style-type: none"> <li>• Baseline assessment (T1)</li> <li>• Introduction to the training program</li> <li>• History of the palliative care movement</li> <li>• Societal attitudes to death and dying</li> <li>• Philosophy and principles of pediatric palliative care</li> </ul> <p><i>Experiential exercise: Personal attitudes towards death and dying</i></p>
2	<ul style="list-style-type: none"> <li>• Development of children's and adolescents' concepts of illness, dying and death</li> <li>• <u>Psychosocial</u> care for the seriously ill and dying child or adolescent</li> </ul> <p><i>Discussion and role-play activities of interactions with children</i></p>
3	<ul style="list-style-type: none"> <li>• The impact of children's and adolescents' life-limiting or life-threatening conditions on the family unit</li> <li>• Communication skills: active listening, breaking bad news, discussing emotionally difficult issues, non-verbal communication</li> </ul> <p><i>Role play activities (communication skills)</i></p>
4	<ul style="list-style-type: none"> <li>• Applications of pediatric palliative care in various health care settings (i.e. Oncology Clinic, Intensive Care Unit, Neuromuscular Unit, Home care)</li> </ul> <p><i>Discussion of clinical observation practice: Meeting the family facing a child's or adolescent's serious illness and/or impending death</i></p>
5	<ul style="list-style-type: none"> <li>• Pain and symptom management (assessment, documentation and management of common symptoms in seriously ill and dying children)</li> <li>• Non-pharmacological approaches to symptom management</li> </ul> <p><i>Discussion of clinical scenarios</i></p>
6	<ul style="list-style-type: none"> <li>• Ethical dilemmas and decision making in pediatric palliative care</li> <li>• Involving children and adolescents in the decision making process</li> <li>• Supporting the siblings</li> </ul> <p><i>Discussion of clinical observation practice: Accompanying a family facing a child's or adolescent's serious illness, dying and death</i></p>

7	<ul style="list-style-type: none"> <li>• <u>Spiritual care and the role of religion in supporting the family</u></li> <li>• Bereavement support</li> </ul> <p><i>Discussion of clinical scenarios</i></p>
8	<ul style="list-style-type: none"> <li>• Panel of bereaved parents narrating their experiences with child's illness, end of life care, death and mourning</li> </ul> <p><i>Experiential exercise: Addressing personal loss issues and grief</i></p>
9	<ul style="list-style-type: none"> <li>• The multiple aspects of health professionals' distress and suffering</li> <li>• The interdisciplinary team: Functional and dysfunctional patterns in coping with suffering and death</li> </ul> <p><i>Experiential exercise: Exploring and discussing team dynamics in the face of death</i></p>
10	<ul style="list-style-type: none"> <li>• Development and operation of a pediatric palliative care service: challenges and opportunities</li> </ul> <p><i>Discussion and DVD presentation of a model pediatric palliative care program by an international expert</i></p>
11	<ul style="list-style-type: none"> <li>• Discussing the experience of clinical observation placements</li> </ul> <p><i>Experiential exercise: Supporting families throughout a child's or adolescent's life-limiting illness and death</i></p>
12	<ul style="list-style-type: none"> <li>• Presentation and discussion of assignments</li> </ul> <p><i>Experiential exercise: Revisiting personal attitudes towards death and dying</i></p> <ul style="list-style-type: none"> <li>• Evaluation of the training program (T2)</li> </ul>



**Table 1.** Demographic characteristics of the sample

	<b>Intervention Group<sup>a</sup></b> N (%)	<b>Control Group<sup>b</sup></b> N (%)	$\chi^2$	<b>p-value</b>
<b>Gender</b>				
Male	5 (14.7)	3(6.1)		
Female	29 (85.3)	45 (91.8)	1.61	.20
<b>Age</b>				
20-25	7 (20.6)	13 (26.5)		
26-30	15 (44.1)	12 (24.5)		
31-35	4 (11.8)	7 (14.3)		
36-40	5 (14.7)	10 (20.4)	4.03	.54
41-45	2 (5.9)	3 (6.1)		
46-50	1 (2.9)	4 (8.2)		
<b>Marital status</b>				
Single	29 (83.5)	31 (63.3)		
Married	4 (11.8)	18 (36.7)	7.51	<b>.02</b>
Divorced	1 (2.9)	0 (0)		
<b>Acquisition of children</b>				
Yes	4 (11.8)	14 (29.8)		
No	30 (88.2)	33 (70.2)	3.70	<b>.05</b>
<b>Profession</b>				
Physicians	5 (14.7)	5 (10.2)		
Nurses	14 (41.2)	23 (46.9)	1.23	.74
Psychologists	10 (29.4)	11 (22.4)		
Other	5 (14.7)	10 (20.4)		
<b>Years of clinical experience</b>				
2	13 (38.2)	16 (32.7)		
3-5	9 (26.5)	10 (20.4)	1.35	.71
6-11	5 (14.7)	9 (18.4)		
>12	6 (17.6)	13 (26.5)		
<b>Palliative care education</b>				
Yes	24 (70.6)	24 (49)	3.47	.07
No	10 (29.4)	24 (49)		
<b>Losses during previous year</b>				
Death	4 (11.8)	8 (16.3)		
Divorce	1 (2.9)	1 (2.0)		
Professional-Social	3 (8.8)	4 (8.2)	9.35	.15
Other	2 (5.9)	4 (8.2)		
None	8 (23.5)	23 (46.9)		
2 losses	11 (32.4)	5 (10.2)		
3 or more losses	5 (14.7)	4 (8.2)		

<sup>a</sup>N = 34; <sup>b</sup>N = 49

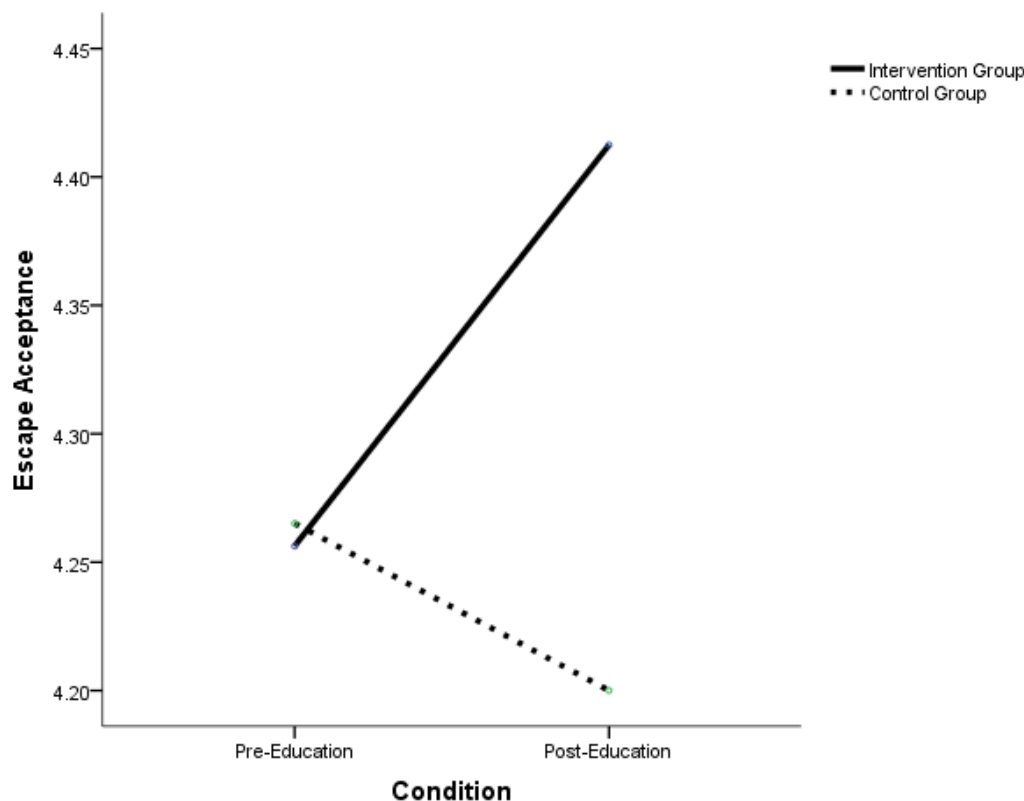
**Table 2. Pre- and post-training Mean, Standard Deviation (S.D.) and Range of the DAP-R subscale scores for the Intervention and Control Groups**

Condition	DAP-R Subscale	Intervention Group			Control Group		
		Mean	S.D.	Range	Mean	S.D.	Range
A. Pre-training (T1)	Fear of Death	4.02	.58	3.14-5.43	4.15	.69	2.86-5.57
	Death Avoidance	4.31	.36	3.60-5.20	4.18	.74	1.80-6.00
	Neutral Acceptance	5.36	.58	4.20-6.40	5.12	.55	3.80-6.20
	Approach Acceptance	3.75	.39	3.20-4.50	3.54	.28	2.90-4.20
	Escape Acceptance	4.22	.47	2.60-4.80	4.25	.42	3.20-5.20
B. Post-training (T2)	Fear of Death	4.14	.38	3.29-5.00	4.10	.40	3.14-7.41
	Death Avoidance	4.40	.30	3.80-5.20	4.17	.48	3.00-5.20
	Neutral Acceptance	5.78	.65	4.80-7.00	5.32	.68	3.60-6.40
	Approach Acceptance	3.70	.34	2.90-4.60	3.55	.18	3.20-4.00
	Escape Acceptance	4.40	.30	3.60-5.00	4.19	.39	3.20-4.60

**Table 3. Repeated measure ANOVA results for the five DAP-R subscales**

	Df, Error	MS	F-value	p-value
<b>Fear of Death</b>				
Group	1. 70	.24	.81	.42
Condition	1. 70	.13	.47	.49
Group x Condition	1. 70	.18	.65	.42
<b>Death Avoidance</b>				
Group	1. 72	1.24	5.27	<b>.02</b>
Condition	1. 72	.03	.11	.73
Group x Condition	1. 72	.08	.30	.58
<b>Neutral Acceptance</b>				
Group	1. 71	3.79	8.01	<b>.006</b>
Condition	1. 71	3.85	11.15	<b>.001</b>
Group x Condition	1. 71	.43	1.24	.26
<b>Approach Acceptance</b>				
Group	1. 70	.97	9.06	<b>.004</b>
Condition	1. 70	.00	.003	.95
Group x Condition	1. 70	.01	.24	.62
<b>Escape Acceptance</b>				
Group	1. 73	.38	1.85	.17
Condition	1. 73	.07	.70	.40
Group x Condition	1. 73	.45	4.17	<b>.04</b>





**Figure 1.** Group differences in the *Escape Acceptance* subscale at T1 (pre-education) and T2 (post-education).

Table 2 provides the mean scores on the DAP-R subscales for each group at pre-training (T1) and post-training condition (T2). Repeated measure ANOVA results on the five DAP-R subscales are shown in Table 3.

No main or interaction effects were evident in the *Fear of Death* subscale, even after controlling for age, gender, marital status and having children, profession, years of clinical experience, prior palliative care education and personal losses within past year. A group difference was found in the *Death Avoidance* subscale, with the IG showing higher scores than the CG both at T1 and T2. No other two- or three-way interactions were found after controlling for demographic characteristics.

A group difference was also evident in the *Neutral Acceptance* subscale, with the IG showing higher scores than the CG at both T1 and T2. Moreover, time difference was found in this subscale, with

scores at T2 being higher compared with scores at T1 for both groups. No other two- or three-way interactions were found. After controlling for years of clinical experience, the significant group main effect on *Neutral Acceptance* decreased as years of clinical experience increased, although it remained significant [ $F(1, 63) = 5.66, p = .02$ ]. Finally, after controlling for marital status and having children, the group difference was not evident {[ $F(1, 68) = 2.51, p = .11$ ]} and [ $F(1, 68) = 2.29, p = .13$ ], respectively}.

A group difference was found in the *Approach Acceptance* subscale, with the IG showing higher scores at T1 than the CG. After controlling for professional specialty, a significant 3-way interaction of group x condition x profession was evident [ $F(3, 64) = 2.92, p = .04$ ]. More specifically, nurses did not show any group difference at T1 compared to other work groups;

however, nurses in the IG showed more *Approach Acceptance* at T2, compared to nurses in the CG. After controlling for years of clinical experience, a significant 3-way interaction of group x condition x years in profession was evident [ $F(3, 62) = 3.53, p = .02$ ]. In particular, participants with 0-2 years and more than 12 years of clinical experience in profession showed higher scores in this subscale at T2 compared to T1. This effect was not evident for the remaining clusters of years of clinical experience.

A two-way interaction was found in the *Escape Acceptance* subscale, with both groups having similar scores at T1, whereas at T2 the IG showed higher scores in this subscale compared to the CG (Figure 1). After controlling for professional specialty or for years of clinical experience, this two-way interaction was not detected [ $F(1, 67) = 3.33, p = .07; F(1, 65) = 2.19, p = .14$ , respectively].

## Discussion

It is increasingly recognised that comprehensive training in pediatric palliative care cannot be achieved only through the acquisition of knowledge and skills but requires the cultivation of self awareness and the acknowledgment of personal attitudes towards death and dying (Sahler et al., 2000; Serwint et al., 2000; Vazirani, Slavin & Feldman, 2000; Liben, Papadatou & Wolfe, 2008). It is therefore important that educational and training programs offer structured opportunities to facilitate reflection over personal beliefs, assumptions, attitudes and responses to life-threatening illness, dying and death (Papadatou, 1997; MacLeod et al., 2003; Olthuis & Dekkers, 2003; Mallory, 2003; Wass, 2004; Rushton et al., 2009; Braun, Gordon & Uziely, 2010; Cevik & Kav, 2013; Rodenback et al., 2016).

Research in designing and evaluating training programs in pediatric palliative care is very limited (Liben, Papadatou & Wolfe, 2008; Downing et al., 2013) while the effect of such initiatives on health professionals' attitudes toward death has not been investigated. The present study is the first to our knowledge that explores the impact of a 150-hour pediatric palliative care multidisciplinary training program on health professionals' death attitudes and compares data with those of a control group.

Findings show a statistical significant increase on the score of *Escape Acceptance* subscale among IG participants at T2 by comparison to those in the CG, while no group difference was detected at T1 for this subscale. This result may be accounted to trainees' confrontation with the in-depth study of children's serious illness, suffering and death of which most were unaware or rarely or never exposed before. Children's premature death evokes feelings of powerlessness, a sense of unfairness and increased personal vulnerability, given the contemporary view that children have the right to attain adulthood (Sahler et al., 2000). Therefore, this finding may be interpreted as participants' distancing from a perceived threatening confrontation (Peters et al., 2013), a view of death as an alternative to unbearable distress (Neimeyer, Wittkowski & Moser, 2004) and a wish for seriously ill and dying children to escape from excess suffering and to find in the afterlife the peace, happiness and protection they deserve.

Participants in the IG showed higher scores in the *Neutral Acceptance* subscale than the CG both at T1 and T2 conditions. Although group x condition interaction was not statistically significant, it should be mentioned that the IG had a considerable increase in their scores at T2 compared to the CG. This result is consistent with other studies in the context of adult palliative care (Wessel & Rutledge, 2005; Dobbins, 2011) which support that trainees' scores in this subscale increase post training. According to Wong, Reker and Gesser (1994), *Neutral Acceptance* is the most adaptive attitude to death, it represents a mature outlook on life and death, it is positively related to psychological and physical wellbeing and shows a tendency to living a life as full and meaningful as possible; therefore, increased scores in this subscale at T2 are considered a positive outcome.

An increase in the *Fear of Death* as well as in the *Death Avoidance* subscales at T2 was detected for the IG in comparison to the CG, although this tendency did not reach significance level. Increased scores in these "negative" attitudes to death is not an uncommon finding in studies evaluating the impact of educational initiatives in the context of adult palliative and end of life care (Durlak & Reisenberg, 1991; Göriş et al., 2015). In our program, trainees had the opportunity, through reflective and experiential activities, to reflect

upon their own mortality and powerlessness in the face of death whereas through the accompaniment of families, they realised the incurability of children's serious illness and became aware that death is an inevitable fact of life, unavoidable by everyone, including children. Therefore, increased fear and avoidance of death could be interpreted as trainees' immediate reactions to their enhanced awareness of both the challenges inherent in the field of palliative care and their own vulnerability and sense of helplessness in the face of death; this has also been supported by other researchers (Papadatou, 1997; Hegedus, Zana & Szabo, 2008; Göriş et al., 2015). However, other research findings have shown that "negative" death attitudes are improved through training and education (Wessel & Rutledge, 2005; Dobbins, 2011; Peters et al., 2013).

The statistical significant differences between the two groups in *Neutral Acceptance*, *Approach Acceptance* and, in lesser degree, *Death Avoidance* subscales merit further discussion. IG participants' increased scores in these subscales may point to the fact that professionals who applied for the training, were motivated to explore their attitudes towards death and dying and possibly aware of their tendency to avoid death, a condition they were willing to address through the program. Moreover, according to Wessel & Rutledge (2005), high positive attitudes at baseline are less likely to be improved through training. Therefore, participants' pre-program status in relation to death attitudes should be taken into account and interpreted under the light of trainees' commitment and personal motivation to expose themselves to end of life issues and explore their death attitudes (Durlak & Reisenberg, 1991; Wessel & Rutledge, 2005).

In accordance with other studies, our findings suggest significant effects of demographic variables on DAP-R scores (Wessel & Rutledge, 2005; Black 2007; Lange, Thom & Kline, 2008; Zyga et al., 2015). More specifically, nurses in the IG and trainees with less and most work experience showed higher scores in the *Approach Acceptance* subscale at T2, when compared to the CG. Due to the nature of their profession, nurses are in direct contact with patients, so they are more familiar with death issues and, according to research, they depict more positive attitudes to

death compared to physicians (Zyga et al., 2015). The effect of work experience on death attitudes is not clear in the literature; some studies have found that increasing work experience is correlated with positive attitudes towards death and dying (Lange, Thom & Kline, 2008; Zyga et al., 2015), although other researchers support the opposite (Black, 2007; Cevik & Kav, 2013). Finally, after controlling for marital status and acquisition of children in our study, the significant group main effect on *Neutral Acceptance* was not evident. This finding needs further clarification by including these variables in future research studies on the death attitudes of health professionals who provide palliative care to children.

### Limitations

A limitation of the present study is the quasi-experimental design and the lack of randomisation of participants in the two groups. In addition, findings rely on data obtained through self-report measures, which may not reveal subtle aspects of one's death attitudes that are not consciously acknowledged, or are denied or avoided.

The fact that both groups comprised mostly females should be taken into account as evidence suggests that women score higher than men in the *Approach Acceptance* and *Escape Acceptance* subscales (Wong, Reker & Gesser, 1994). The young age of participants should also be considered, as lower fear of death at post-training and more positive death attitudes are more frequently detected in older age groups of health professionals (Hegedus, Zana & Szabo, 2008; Lange, Thom & Kline, 2008).

Death attitudes are complex human phenomena including personal, cultural, social, religious and philosophical beliefs and views (Olthuis & Dekkers, 2003). These dimensions may have not been captured by the DAP-R, which focuses on the psychosocial aspects of death attitudes.

### Conclusions

The present study adds to the existing evidence that training programs can influence health professionals' death attitudes. Moreover, findings shed light into the unexplored subject of training programs in pediatric palliative care and their impact on health professionals' death attitudes.

Increasing the “positive” aspects of attitudes toward death and decreasing the “negative” ones are desirable effects of education. However, this needs further consideration in the context of pediatric palliative education, where the confrontation with children’s death, commonly perceived as unnatural and unfair, exposes trainees to emotionally charged responses and reflections, which may generate mixed attitudes comprising both acceptance and avoidance or fear of death, in a not necessarily conflicting way.

Findings have implications for designing and evaluating pediatric palliative care education programs by highlighting the significance of assessing trainees’ death attitudes prior to the training and tailoring the content and the methods of teaching to their specific needs and motivations. However, further research is needed to explore the process by which changes in death attitudes occur over time as well as to identify specific training methods that could best facilitate this process.

Finally, conflicting or mixed findings regarding the impact of palliative care education on death attitudes, which is an outcome of our study, may indicate the necessity to reconsider current methods of training evaluation. Future educational and training programs in pediatric palliative care need to employ both qualitative and quantitative methods of assessing their impact on health professionals’ death attitudes. Qualitative methods may highlight as an important evaluative criterion of these programs their capacity to raise participants’ awareness of the need to change their personal stance to death and dying, even if no remarkable measurable effects on their death attitudes can be detected post training.

Therefore, while the use of standardised assessment measures and instruments is encouraged, qualitative methods could be helpful in exploring the personal meanings that trainees assign to death and dying, as well as the ways by which these meanings are processed throughout the training.

Such methods might be most appropriate in the developing context of pediatric palliative care, as understanding health professionals’ responses and attitudes to children’s incurable illness and unavoidable death could further advance the

development of effective educational and training initiatives in this field.

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### Abbreviations

Analysis of Variance (ANOVA)

Death Attitude Profile–Revised (DAP-R)

European Association for Palliative Care (EAPC)

National Hospice and Palliative Care Organization (NHPCO)

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