

Original Article

Integrating Massage within Oncology Nursing Care: An Italian Pilot Study

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Abstract

Background. Throughout a European Erasmus + project, fifteen Italian nurses attended a 5-day seminar on complementary therapies in order to improve their knowledge and integrate it safely into oncology nursing care.

Aims. This article describes a pilot-study, inspired by the project experience, on implementation of nurses delivered massage in four Italian hospitals.

Methods. Nurses massaged patients over a four-month period, following a protocol. A mixed-method approach was used to gather quantitative data (30-item Therapy Impact Questionnaire - TIQ) and qualitative data (questionnaire for patients and nurses created ad-hoc). Data were collected before and after each massage session by a student nurse or a non-massaging nurse.

Results. A convenience group of patients (48) was treated and 171 massage sessions were performed. Patients belonged to different units: oncology ward, general medicine and palliative. TIQ data analysis confirmed a significant reduction of physical and psychological symptoms after the massage sessions ($P=0.001$). Post treatments patients' interviews highlighted a general level of relaxation (50 %) and an experienced sense of wellbeing (22%). A reduction of symptoms (13.5 %) was also described, in terms of: relief, reduced anxiety, less pain, normalized breathing pattern.

Conclusion. This pilot-study has helped to consider the possibility of nurse delivered massage integration within clinical practice. Moreover, nurses' positive and rewarding experience was highlighted too. Results achieved could be considered as a useful reflection for future more structured and robust research projects.

Key words: nurse delivered massage, complementary therapies, implementation, nursing, caring, symptom management.

Introduction

Complementary and alternative medicine approaches have become a huge field of interest within healthcare and their use has increased worldwide (Zhang et al., 2015). Over the past twenty years, a large body of research has been inspired by this topic. Many authors and national health research institutions have tried to enrich and give a comprehensive definition of such an important reality of global health systems (Bishop & Lewith, 2010). Finnegan-John et al.

(2013) uses definition given by Zollman and Vickers (1999) of Complementary and Alternative Medicine (CAM) as a 'broad domain of healing resources that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs, other than those intrinsic to the politically dominant health system of a particular society or culture in a given historical period' (pg.693). Healing resources that can be considered 'alternative' when they are used in place of conventional

medicine and/or 'complementary' when they are used together with conventional medicine (NCCIH, 2017; Berretta et al., 2017). Complementary Therapies (CTs) comprise various healthcare practices, therapies and procedures such as natural products, mind and body practices and other complementary health approaches (NCCIH, 2017). Although mainstream medical system is still very cautious about the use of complementary remedies within an already established healthcare framework, an integrative medicine paradigm is emerging within academia and research fields (Weeks et al., 2017). An integration aiming to blend the most appropriate medical intervention with complementary therapies, based on sound and proven research trials (Cramer et al., 2013). In the USA, a recent survey found that around 30% of adults have used at least once a year CAM (Zhang et al., 2015). Thus, research is also outlining the profile of patients who are keener on using unconventional therapeutic approaches (Bishop & Lewis, 2010). According to Maggiore et al. (2012), adults with a diagnosis of cancer are more likely to use CTs. A six-countries European survey showed that the use of CAM is about 35.9% of the oncological population (Molassiotis et al., 2005). Cramer et al. (2013) state that CAM is used by about 40% of all cancer patients to manage symptoms related to their disease. Moreover, oncological patients mainly use CAM to strengthen their immune system, relieve pain, manage treatment-related side effects and improve the quality of life (Cramer et al., 2013).

In Italy, a survey conducted in major oncological hospitals found that 37.9% of the patients with oncological diagnoses use CTs (Bonacchi et al., 2014). A descriptive survey of five Italian oncological hospitals, involving 468 patients with different malignancies found that nearly half (48,9%) of patients had reported an ongoing or recent use of CAM (Berretta et al., 2017). These surveys highlighted how oncology patients perceive CT not resolute, whereas it represents more a way to take care of themselves. CTs principles support patient's health resources with a holistic approach, so health is intended to maintain and reinforce the person's sense of unity that has been affected by the illness experience itself (Marletta et al., 2015).

From this perspective, nurses have been the most appropriate professionals to support and promote the use of CTs. Besides, nursing represents an

integration of different domains of knowledge focused on the ethical, humanistic, scientific and aesthetic aspects of the concept of care, thus having a holistic approach to caring. (Ranheim et al., 2010; Shea & Frisch, 2014). A cross-sectional survey showed Italian nurses CAMs' awareness and positive attitude (Burrai et al., 2014). Zanini et al., (2008) stated that approximately 69.7% of the Italian oncology nurses had attended a CTs training. Further evidence shows that nurses have a privileged position to improve their knowledge and possible application of the potentiality of CTs (Bjerså et al., 2012; Christina et al., 2016).

BestCARE European Project

BestCARE has been a European Erasmus plus project (Ref. 2014-1-TR01-KA202-013246) coordinated by the Akdeniz University Nursing Faculty (Turkey) on improving the nursing care with the best complementary therapy strategies, based on European Union standards (Canli Özer et al., 2019). BestCARE focused on integrating CTs within nursing care with a safe approach and to provide training for oncology nurses in holistic massage, aromatherapy, reflexology, reiki and relaxation exercises (Boz et al., 2017). CESPI (Centre for Health Professions Studies) a renown no-profit nursing organization, provider of high standards nursing training on complementary care, was the Italian project partner (CESPI, 2017). Fifteen Nurses, selected from four Italian hospitals (University Hospital 'Policlinic Tor Vergata' of Rome, S. Croce e Carle Hospital - Cuneo, Azienda Sanitaria Reggio Emilia and Fondazione FARO - Turin) attended a five-day CTs seminar held by CESPI (Turin). Nurses acquired knowledge and awareness on complementary care and were also encouraged to develop an integrated nursing plan so to envisage a scenario where a CT was applied to oncology patients. Nurses chosen CT for the implementation plan was holistic massage because It is a safe and feasible technique characterised by hands' moderate pressure, without any specific therapeutic goal, focusing mainly on caring and personal wellbeing (Field, 2010). Nurses practiced massage aiming to adapt it according to their specific hospital settings and patient's needs. Furthermore, it has been stressed how paramount it is to cultivate an attitude of 'presence' and 'awareness' prior and while massaging, thus to enhance the ability to listen intuitively through their sense of touch (Airoso et al., 2016). In conclusion, it has been decided to

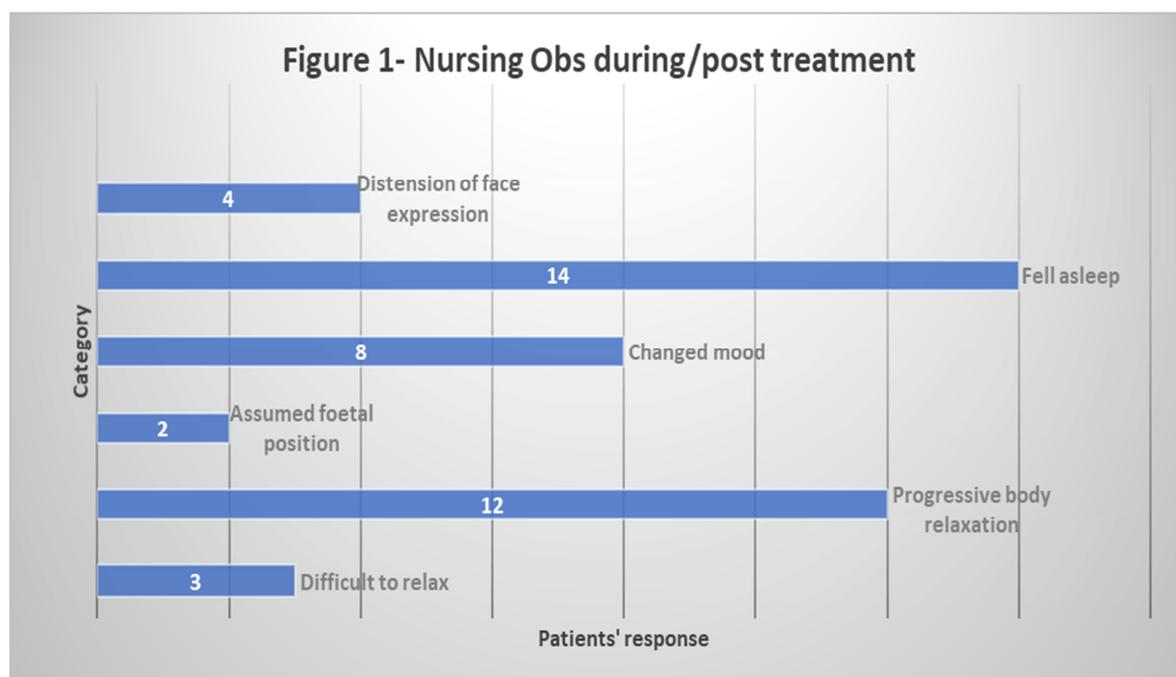
design a pilot-study to evaluate and support massage delivered implementation plan.

Materials and Methods

A pilot-study massage protocol was purposely designed (table.1). A mixed-method approach was adopted with pre/post treatment questionnaires: Therapy Impact Questionnaire (TIQ) and an "ad hoc questionnaire". TIQ is a 4-point Likert scale 36 item questionnaire concerning four dimensions: physical symptoms, functional status, concomitant emotional and cognitive factors and social interaction (Kaasa & Loge, 2003). TIQ has been chosen for its wide use in Italian palliative, oncological studies, and its ability to explore patients' physical and psychological dimensions (Paci et al., 2001). TIQ items exploring social interaction dimension (6) weren't considered because not relevant for this

project aims. CESPI's panel of experts designed a mixed questionnaire to integrate with TIQ data. The questionnaire first part was concerned about patient medical/nursing status and the massage session description while the second part gathered data on patients' conditions and possible changes occurring during or after treatments; Nurses were also encouraged to write, at the end of each session, a brief report.

The Hospital directorates involved with the project gave nurses formal permission to massage patients and to administer questionnaires. Before the first massage session, nurses gave patients a verbal explanation of massage characteristics and possible side-effects. Enrolled patients signed a consent form. An explicative brochure was also left to each patient bedside.



Results

Forty-eight patients were enrolled for the project and 171 massages were performed. Massage sessions were performed almost twice weekly for each patients and questionnaires were compiled pre/post treatment. Nurses that compiled questionnaires were not the ones who performed the massage. This position was chosen

purposefully to reduce, as much as possible, any bias or to influence patients. Therefore, it was agreed to follow the rule that a non-massaging nurse or a student would have administered questionnaires. The post-treatment patients' comments were generally collected on the following treatment. In this way, it was possible to leave patients at their 'post-massage

sensations' and avoid further influence. Massage sessions and demography were compiled using Microsoft Excel and presented in numbers (n) and percentage (%).

Patients profile

Patients (Table 2) were mostly women (77%) and mean age was 57 years (SD= 18,31). Thirty-six patients (75%) completed the protocol of four massages of twenty minutes each. Whereas seven patients received only three treatments and the rest of the sample had one (4) or two massages (2). The average hospitalisation stay was above 12 days (SD=13,4). Patients were hospitalized for complications or treatments due to an oncological diagnosis and some were in palliative care (25%). One patient was recovering from an oncological surgical operation. The 77,9% of the patients were on medication (mostly analgesia and anxiolytics) while some (13,8%) weren't on any therapy and for a small group it has not been reported. Four patients had to be carefully mobilised, mostly it was needed a half-seated position, while one patient could be massaged only in a lateral position. The body part preferred by the patients for the treatment were legs (55) and feet (43) followed by head/face, back and arms and last abdomen. Some massages have been performed in combination (like legs and feet or face/head and arms) due to time and anatomical proximity.

Therapy Impact Questionnaire (TIQ) data analysis

TIQ data were analysed using SPSS version 24.0 for Windows (Spss Inc. Chigaco, IL, USA). An initial descriptive study showed demographic and baseline outcome variables.

Student's t-test for paired measures was used to determine changes between pre and post-massage sessions. Possible differences between groups' mean value were analysed with a one-way analysis of variance (ANOVA) while Levene test for homogeneity and Bonferroni correction were used in post hoc. For the ANOVA and paired T-tests, it has been considered the only group of patients who did complete the four massages protocol. Tests significant level considered was $P < 0.05$.

Descriptive statistics have highlighted the most representative means values among the TIQ items response before the first treatment. It has been observed relevant mean value among the items, concerning physical symptoms, such as:

feeling tired, feeling weak, pain, loss of appetite, sleep problems, insomnia and constipation. Moreover, highest means for the items regarding psychological and/or functional status, such as: felt sad or depressed, felt anxious or afraid, do you need help to eat, dress or go to the toilet, felt nervous, irritable or restless, have you been ill, felt insecure, had any difficult concentration or attention.

Paired samples T-test showed significant post-treatment differences (Table 3) for the following physical symptoms: pain ($P = 0.01$), insomnia ($P=0.036$), problems with sleeping ($P=0.004$), drowsiness ($P=0.009$), vertigo ($P=0,018$), confusion ($P=0.011$), feeling weak ($P=0.013$), feeling tired ($P=0.001$), nausea ($P=0.003$) and stomach-ache ($P=0.022$). The psychological and functional concerned items of the TIQ post-massage also showed improvement; most significant were: have you been ill ($P=0.006$), felt sad or depressed ($P=0.002$), felt nervous, irritable or restless ($P=0.011$) and felt insecure ($P=0.008$).

The results of one-way ANOVA tests showed (Table 4-5) that there were no statistically significant differences between the overall patients' treatment response and age and/or gender. Age does not seem to make a difference in both the dimensions enquired by the test. ANOVA results interesting to report are for items such: pain after treatment [$F(3,21) = 0.817$; $P=0.674$] and felt anxious or afraid after treatment [$F(4,22) = 1.205$; $P = 0.479$].

Patient's gender too is not statistically significant, once confronted with each TIQ item, here are reported only two, as an example: pain after treatment [$F(4,22) = 1.747$; $P=0.199$] and felt sad or depressed after treatment [$F(1,25) = 0.003$; $P=0.954$].

Massage report analysis

The written notes analysis process was inspired by phenomenology qualitative data analysis (Hudacek, 2008). Observations were grouped and adapted into categories, to ease the analysis process and the report (Holloway & Galvin, 2016). Two authors worked independently on the rereading and narrowing phase of the observations. In a second phase, they shared their reports, confronting every category or label created. The process of building the report has been more logical than an intuitive or interpretative work. This last fact was facilitated

by the nature of the notes: they were short and specific phrases; generally, about physical signs, characterized by descriptive shortness of patients' status or depicting a snapshot of patients reported lived experience.

Nurses' observations

Forty-three notes were written by nurses about their observation (subjective and objective) concerning the overall massage experience (Fig.1). Observations analysed and gathered in broad categories were: fell asleep, progressive body relaxation, changed mood, facial distension, assumed foetal position and difficult to relax. Nurses described several degrees of

falling asleep, from a 'simple nap' to 'patient slept for hours after the treatment'. Whereas body relaxation category was also defined as abandonment or muscle relaxation. Nurses observed in four cases that during massage there was a gradual relaxation of facial muscles and a reduced eyelids activity. A deflection in mood was the shift more reported at the beginning than post-treatment, where a significant shift to an ameliorated mood was reported. On three different occasions patients found treatment pleasant, but had difficulties to relax, whereas, on two episodes, patients assumed a foetal position, after the massage

Table 1. Massage protocol is summarised as follows:
- Nurses will massage at least four patients, in a period of four months (December 2015 -March 2016)
- Nurses identify patients and assess their suitability to be massaged
- Patients are recruited from the wards where nurses practice (oncology ward/palliative care).
- Patients are enrolled after an explanatory speech by the nurse about massage treatment and after signing the consent form
- All patients are eligible to receive massage (there are no general contraindications for holistic massage)
- For data collection, patients who are unconscious or with conditions that influence communication will not be enrolled
- Treatment should be offered in a 'dedicated setting ', avoiding the ward routine time, preferably in a gap between patients' activities and relatives' visits
- The four-short holistic massage session will last maximum twenty minutes each
- Sessions should be provided twice a week, avoiding long gap between sessions
- Patients will choose and negotiate aspects of the treatment (such as: which part they would like to be treated, the use of oil or body parts not to be touched)
- Questionnaires will be administered before and after each treatment
- Nurses who fill out the questionnaires will preferably not be those who performed the treatment

Table 2.			
Descriptive characteristics of patients (n=48)			
		N	%
Gender	Female	37	77.1
	Male	11	22.9
Age	Mean	57	
Massage Protocol Completed		36	75
Ward	OncoHematology	14	21.2
	Medical	11	16.7
	Hospice	10	15.2
	Neurology	7	10.6
	Surgical	6	9.1
Therapy	Analgesia and/or Anxiolytic	37	77.9
	No medications	7	13.8
	Not reported	4	8.3
Massage	Totally	171	
Body part	Legs	55	32
	Feet	43	25
	Legs/feet	22	13
	Head/face	15	8.8
	Back	16	9.4
	Arms	17	10
	Abdomen	3	1.8

Table 3. Paired T-Test (Pre-Post last Treatment) N=48									
		Paired Differences							
(TIQ) Therapy Inventory Questionnaire: items					95% Interval of Confidence				
		Mean	SD	Mean Std.Er.	Lower	Upper	t	df	Sign. (2tailed)
Pain	before	1.78	.86	.1633	.26297	.93703	3.674	24	.001
	after	1.16	.37						
Insomnia	before	1.56	.71	.1500	.02301	.64366	2.208	26	.036
	after	1.33	.62						
Sleeping problems	before	1.64	.69	.1685	.19137	.88556	3.195	25	.004
	after	1.23	.42						
Feeling weak	before	2.13	.86	.1889	.11224	.88776	2.646	27	.013
	after	1.64	.62						
Feeling tired	before	2.23	.72	.1785	.31217	1.0449	3.800	27	.001
	after	1.64	.67						
Felt sad Or Depressed	before	1.91	.91	.1917	.25905	1.0486	3.411	25	.002
	after	1.30	.54						
Felt Nervous, Irritable or Restless	before	1.64	.87	.1685	.1144	.8086	2.739	25	.011
	after	1.18	.40						
Drowsiness	before	1.47	.63	.1043	.08200	.51059	2.842	26	.009
	after	1.41	.40						
Vertigo	before	1.23	.51	.1171	.05555	.53704	2.530	26	.018
	after	1	0						
Confusion	before	1.19	.39	.0790	.05226	.37631	2.714	27	.011
	after	1.11	.31						
Nausea	before	1.45	.62	.1224	.15579	.65902	3.328	26	.003
	after	1.11	.32						

Paired T-test before/after treatment – most relevant TIQ items. P value significant if < 0.05

Table 4. One-Way Anova (Age And Tiq)						
		Sum of squares	df	Mean square	F	Sign.*
Pain (Before Treatment)	Between groups	14.744	34	.434	1.735	.254
	Within groups	1.500	6	.250		
	Tot	16.244	40			
Pain (After Treatment)	Between groups	2.860	21	.136	.817	.674
	Within groups	.500	3	.167		
	Tot	3.360	24			
Felt Sad Or Depressed? (Before Treatment)	Between groups	28.970	33	.878	1.317	.335
	Within groups	6.667	10	.667		
	Tot	35.636	43			
Felt Sad Or Depressed? (After Treatment)	Between groups	6.630	22	.301	1.205	.479
	Within groups	1.000	4	.250		
	Tot	7.630	26			
Patients' TIQ response does not differ with age. *P value significant if <0.05						

TABLE 5. One-way ANOVA (Gender and TIQ N=48)

		Sum of squares	df	Mean square	F	Sign. *
Pain (Before Treatment)	Between groups	.014	1	.014	.018	.893
	Within groups	33.859	45	.752		
	Tot	33.872	46			
Pain (After Treatment)	Between groups	.237	1	.237	1.747	.199
	Within groups	3.123	23	.136		
	Tot	3.360	24			
Felt Sad Or Depressed? (Before Treatment)	Between groups	.011	1	.011	.013	.908
	Within groups	35.625	42	.848		
	Tot	35.636	43			
Felt Sad Or Depressed? (After Treatment)	Between groups	.001	1	.001	.003	.954
	Within groups	7.629	25	.305		
	Tot	7.630	26			

Patients TIQ response does not differ with gender.

*P value significant if < 0.05

Patients report

Patient response pre and post-treatment were reported by nurses on the questionnaire. Nurses asked patients if they wanted to share how they felt before and after treatment. It has not been possible for each session to proceed as planned, because patients often fell asleep. Therefore (as has been mentioned before) most of the time nurses asked a question regarding the last massage session, in a second occasion.

Pre-treatment report

Patients' reports about their pre-massage status, were thirty-three (33). Most of the patients reported to feel anxious and often they overlap this feeling with other concerns such as pain, tiredness and feeling weak. Some patients' notes were more concerned about physical conditions while others were connected to a psychological dimension. Feelings frequently reported were: fear, agitation, being worried and restlessness. Two patients have referred respectively to be curious about the experience and needed human contact.

Post-treatment report

Eighty-three (83) post-treatment, very explicative and colourful, comments were about patients' sensations and feelings. Eighteen patients (50 %) felt relaxed while eight (22%) reported a sense of wellbeing. Five patients (13,5 %) described a reduction of their symptoms in terms of relief, less anxiety, less pain, normalisation of breathing patterns. Other expressed feelings of gratitude, lightness (physical and spiritual) and calmness. A group of feelings reported were the ones linked with: feeling of security, being cuddled, feeling protected, being accepted and considered. It has been positively described, by one participant, the clear sensation of his/her body contour and periphery after the massage. One patient defined that 'massage is a cure for souls'.

Discussion

This paper relied on a quantitative and qualitative approach to evaluate a complementary therapy integration within the clinical nursing routine. Forty-eight patients received, at their bedside, mostly four holistic massage sessions of twenty

minutes each. Patients were massaged by nurses working in the same ward. Qualitative and quantitative data analysis have both reflected findings, of the present literature, on how a massage session can improve patients' physical and psychological symptoms (Kutner et al., 2008; Jane et al., 2009; Falkensteiner et al., 2011). In addition to this, a growing number of scientific studies are comparing different forms of touch and how a massage session works neurologically. It has been showed that a massage characterized by slow, long strokes and moderate hand pressure, has a different neuronal pathway, comparing to other types of touches (Lindgren et al., 2012; McGlone et al. 2012). This results in an affective and pleasant experience for the patient and possibly for the person who touches too (McGlone et al., 2014). Besides, Montagu (1971) states how touch is the only sense of reciprocity. Such an aspect could lead to a fundamental reflection on how, within healthcare context, the health care professionals' quality of touch is perceived by patients.

TIQ results showed a possible overlapping with most of the findings of the nurses' report analysis. In fact, most symptoms that appeared significantly on statistics testing emerged from the patients' notes review (described as pain, tiredness, feeling weak and anxiety) too. Likewise, within the post-treatment phase, such symptoms decrease can be observed on both quantitative and qualitative findings. Furthermore, any differences between findings can be a reflection of the inner specificity of the two methodologies: on one side, we have a constellation of descriptions and words, while on the other side confronting samples and mean. Therefore, can be outlined a possible integration of two approaches where qualitative and quantitative data can each contribute to different aspects of a phenomenon, integrating both methodologies within a holistic methodological approach (Alivernini, 2012).

The nurses/patients massage notes were a colourful array of descriptions and definitions about the overall experience but there was a drastic difference between the number of notes written pre and the post-massage ones. In fact, patients' post-treatment notes were nearly three times of pre comments (giving a ratio of 2,5). Comparing the 33 pre notes to the totality of 171 massages could lead to arguing that nearly a quarter of patients expressed their feelings or concerns before the massage session.

In addition to this, a clear difference between the quality of the comments was present in the notes too. The majority of post-treatment comments had positive acceptance, while a different scenario comes out from the pre-treatment notes. Patients' reported pre-treatment expressions were mostly negative concerns. Thus, it can be easily inferred that most of the patients, that were encouraged to express their feelings, were from the beginning in a situation of distress. Besides, nurses might have tended to take more time on the post-massage report and so unintentionally eased patients' expression. Although within the protocol, it was outlined the exchange of the nurses (or students) in collecting data, it has not been stressed enough how it would have been optimal if the massaging nurse wasn't part of staff. In fact, Nurses already knowing patients, before the start of the massage could have represented a qualitative design fail (Holloway & Galvin, 2016).

TIQ one-way ANOVA test report showed that patients' gender and age, once compared with physical symptoms and psychological/functional status, were not statistically significant. This aspect is consistent with the axiom of a moderate pressure massage, which states that treatments are tailored for the person, stating the individuality of each treatment (Field, 2014). Therefore, massage is performed with a non-judgmental attitude, considering everyone in his/her uniqueness (Cronfalk et al., 2009; Ozolins et al., 2015). Hence, massage performed by caring and attentive hands, at the bedside, is an experience that has a deep and meaningful appeal to everyone, therefore it goes beyond gender differences.

The forty-eight patients, a convenience sample recruited by the nurses, had a different oncological diagnosis so there was diversity of physical and psychological symptoms. Although this pilot-study was initially orientated to broad oncological nursing care, in this data collection are more frequent symptoms characteristics of an end of life or palliative care scenarios. This might be due to the fact that patients recruited from hospice and palliative care were nearly half (44%) of the study participants. Therefore, our findings have a less highlighted patients' physical response and specific symptoms related to chemotherapy side-effects or other unfortunate oncological scenarios. On the other hand, it has left more space on concepts related to patients' comfort and pain management. This last topic is

less represented in current literature (Field, 2014) that is more concerned about the effect of massage therapy within specific clinical settings and oncological related topic.

Limitations

Pilot study limitations were due to some weak methodological and epistemological assumptions; thus, a quasi-experimental design or randomised control trial would have more appropriate. Another limitation was given by the reports because there was a lack of continuity and missing information about patients' status. Some questionnaires were not filled in completely whereas nurses left written notes aside about patients' status. Patients' reasons for the uncompleted four massage sessions were not clearly recorded. Nevertheless, some questionnaires show notes regarding patient transfer to another ward, a discharge or deterioration of conditions. Nurses have performed massage within their normal busy practice, maybe paying less attention to the study report and documentation. Thus, a different management report and questionnaire administration would have been more effective.

Conclusion

This small pilot-study showed positive results, especially about patients' experiences of being massaged by nurses. Research about nursing integration of massage into the clinical practice is still very few. Moreover, most of the studies on massage within clinical settings employ usually a non-nurse massage therapist to perform it. Nevertheless, nurses' awareness of massage application can elicit scholars' questions regarding a cultural change within the Italian nursing framework. Having said that, some nursing studies are emerging on massage incorporation into daily practice (Wilson et al., 2016) and nurses' complex interventions where a caring massage has a pivotal role (Brand et al., 2013; Lindgren et al., 2013). In conclusion, nursing culture could benefit from reflections on how CTs, and more, massage can help to improve and give insightful meanings to nurses-patient relation. Future studies should deal with nursing education and specific training on touch and massage in order to improve nurses' work wellbeing.

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