Rivista italiana di cure palliative 2025; 27: 163-169

The importance of touch in palliative care. Foot reflexology in hospice

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Pervenuto il 27 gennaio 2025. Accettato il 13 marzo 2025

Summary. Introduction. Palliative care aims to improve the quality of life for terminally ill patients by alleviating physical and emotional discomfort through a combination of pharmacological and non-pharmacological treatments. Among the range of complementary and alternative medicine (CAM) interventions, foot reflexology (FR) has gained attention for its potential benefits in enhancing well-being and relieving symptoms in end-of-life care. This study aims to assess the effects of FR on terminally ill patients and their caregivers in a Palliative Care Unit (PCU) in northern Italy. Specifically, the study explores patient and caregiver satisfaction with FR, the perceived effects on relaxation, and the potential role of reflexology in alleviating physical and emotional distress in end-of-life care. **Methods.** This exploratory research was conducted between January 2022 and August 2024 in a hospice care unit. A total of 193 patients and 65 caregivers participated in the study. FR sessions were conducted twice a week by a trained reflexologist, with each session lasting approximately 30 minutes. **Results.** Over the study period, a total of 696 FR treatments were administered, with 613 sessions for patients and 83 sessions for caregivers. The results showed that a significant majority of both patients (96.4%) and caregivers (85.4%) reported high levels of satisfaction and relaxation following the treatment. Most patients (74.0%) described feeling "relaxed," and 13.2% felt "sleepy and relaxed," highlighting the calming effects of the therapy. Notably, 96.4% of patients and 85.4% of caregivers expressed interest in receiving repeat sessions, emphasizing the therapy's appeal and its positive impact on emotional comfort. **Conclusion.** Foot reflexology (FR) is shown to be an effective and well-received complementary therapy in palliative care, providing patients and caregivers with relaxation and emotional comfort. While more research is needed to evaluate its long-term effects on physical and psychological outcomes, this study supports the integration of reflexology into hospice care as a non-pharmacological intervention that can improve the quality of life for terminally ill patients and their families. Future research should explore how reflexology can complement traditional medical treatments, offering a holistic approach to end-of-life care.

Key words. Foot reflexology, end-of-life, terminally ill patients, palliative care.

L'importanza del tocco nelle cure palliative. La riflessologia plantare in hospice

Riassunto. Introduzione. Le cure palliative si propongono di migliorare la qualità di vita dei pazienti terminali, alleviando il disagio fisico ed emotivo tramite trattamenti farmacologici e non farmacologici. La riflessologia plantare (RP), tra le terapie complementari e alternative, ha suscitato interesse per i suoi potenziali benefici nel migliorare il benessere e alleviare i sintomi nei pazienti in fase terminale. Questo studio ha esplorato gli effetti della RP su pazienti terminali e i loro caregiver in un'Unità di Cure Palliative del nord Italia. L'obiettivo dello studio consiste nel valutare la soddisfazione dei pazienti e caregiver, gli effetti percepiti sulla rilassatezza e il ruolo della RP nell'alleviare il disagio fisico ed emotivo. **Metodi**. Lo studio è stato condotto da gennaio 2022 ad agosto 2024 e ha coinvolto 193 pazienti e 65 caregiver, con sessioni di RP della durata di 30 minuti somministrate due volte a settimana da una riflessologa formata. I partecipanti hanno compilato un questionario pre- e post-trattamento per valutare il livello di rilassamento, la soddisfazione e il miglioramento dei sintomi. **Risultati**. È stato effettuato un totale di 696 trattamenti. Il 96,4% dei pazienti e l'85,4% dei caregiver hanno riportato alti livelli di soddisfazione e rilassamento. Il 74% dei pazienti ha descritto una sensazione di "rilassamento", mentre il 96,4% dei pazienti e l'85,4% dei caregiver ha manifestato interesse verso trattamenti futuri. **Conclusioni**. I risultati suggeriscono che la RP è una terapia complementare molto apprezzata nelle cure palliative, che conferisce significativi benefici nel migliorare il benessere emotivo dei pazienti e dei loro caregiver.

Parole chiave. Riflessologia plantare, fine vita, pazienti terminali, cure palliative.

Introduction

Palliative care (PC) aims to improve the quality of life by alleviating discomfort through pharmacological or other interventions in terminal patients. Among the symptoms frequently encountered in a palliative care unit (PCU) are repeat anxiety, pain, sleep disturbances, and psychological distress. Managing these symptoms involves comprehensive multidisciplinary care, including complementary and alternative medicine (CAM), defined as "a collection of knowledge, skills, and practices based on theories, beliefs, and indigenous experiences from various cultures, whether explicated or unexplained, for the purpose of maintaining health and preventing, diagnosing, improving, or treating physical and mental illness"[1]. CAM refers to a range of diagnostic and therapeutic practices used alongside conventional medicine[2], offering a broader view of the health-disease continuum and promoting holistic care. The popularity of alternative medicine has risen in response to a growing interest in holistic approaches that integrate the body, mind, and spirit, along with addressing physical symptoms, to enhance overall health and well-being[3]. Recent studies suggest that CAM is effective in managing various specific symptoms, and progress has been made in applying CAM in palliative medicine[4-6]. Armstrong et al.[7] identified five qualitative studies involving patients with advanced disease, concluding that aromatherapy, reflexology, and/or massage positively impacted anxiety and worry relief, as well as overall well-being in terminally ill patients. In our hospice, we incorporate pet therapy, foot reflexology, music therapy, terrarium activities, and reading aloud.

Our approach is completely centered around the patient and uniquely tailored to meet individual needs. This commitment is made possible by the presence of our dedicated professional staff every day of the week, except for weekends. Patients benefit from daily psychological consultations, and our CAM interventions are thoughtfully designed to align with their specific requirements. We carefully consider both the progression of each patient's condition and the evolving emotional and relational needs of them and their families.

In this report, we present a study on the valuable data regarding foot reflexology (FR) within our operational unit. Numerous randomized trials have revealed that FR can be a powerful ally in alleviating anxiety and pain, while also enhancing sleep quality for cancer patients[8-10]. These findings are not only promising but also statistically significant, painting a hopeful picture for those in need. However, it's essential to acknowledge that the studies did possess relatively low statistical power[11,12], suggesting that further research is warranted to fully harness FR's potential benefits.

We have undertaken a retrospective analysis of the past twenty months to highlight how this practice could be seamlessly integrated into our weekly offerings, enhancing the holistic care we provide.

However, this study focuses on FR, a technique involving pressure applied through principles of sedation and toning. FR consists of massaging specific points on the foot to stimulate reflex arcs (hence the term "reflexology"), with each zone corresponding to a particular organ. These reflex points generally mirror human anatomy[13]. FR functions to nourish and ensure balanced physiological, mental, and emotional health[14]. Reflexology is defined as a technique capable of assessing and treating physical and emotional disorders, offering positive effects on stress, anxiety, and overall quality of life[15,16].

Numerous studies have reported the use of FR in obstetrics[17,18], surgery[19], cardiology[20,21], pediatrics[22,23], hematology[24], radiology[25], orthopedics[26], and in PC[27], with significant results, yet no studies have been published on its use in PC. Therefore, this study aims to explore and assess the effects of FR on patients in the Palliative Care and Hospice Department.

Materials and methods

This exploratory research was conducted in a PCU at a hospital in Northern Italy. FR sessions were performed by a qualified reflexologist twice a week in the patient's room in the Hospice Department. All hospitalized patients who were able to provide informed consent for the treatment were included in the study. If the patient was unable to decide to participate because of their illness condition, a family member could provide consent on their behalf. Therefore, the study does not have exclusion criteria for patients.

This study is part of an ongoing project in our operational unit that has been active for the past ten years. The project includes the services of a professional reflexologist, who initially visited one afternoon per week and now comes for two afternoons. Upon arrival at the hospice, the reflexologist briefs the psychologist and the attending staff before treating the patients. In the morning, all patients are informed about this opportunity, and the nature of the activity, along with its potential benefits, is clearly explained to each patient. The work is ongoing and includes doctors, nurses, healthcare assistants (OSS), and psychologists. At the end of the day, the professional discusses the work with the team. To help with this and to report to the funding association, the reflexologist, with assistance from the psychologist, completes a questionnaire for each patient. This gathers anonymous data on patient satisfaction and identifies areas for improvement in their well-being and quality of life. The primary goal is to help patients regain balance in managing fears

and overthinking. We see our work in the hospice as a team effort. FR, led by a trained professional and supported by a psychotherapist and spiritual assistant, helps patients reflect on their feelings during this challenging time, about their sense of what they are experiencing and their ability to live this period well.

From January 2022 to August 2024, a total of 193 end-of-life patients and 65 caregivers were assessed. Each participant received information from a psychologist about the option to voluntarily undergo FR treatment. The treatment consisted of two weekly sessions, each lasting approximately 30 minutes for both the patient and their caregiver. Patients had the option to continue receiving FR throughout their stay. After the treatment, participants completed a brief self-reported questionnaire developed by the psychologists of the care unit, regarding their age, knowledge of FR, perceived treatment effects (e.g. satisfaction level) and any comments about the massage. In cases where patients were unable to write or complete the questionnaire independently, the reflexologist assisted in filling it out based on the information provided by the patient.

Results

A total of 193 hospice patients participated over 55 months: 102 women and 91 men, aged between 32 and 98 years (average age: 77.6 ±13, SD), suffering from either oncological or non-oncological diseases. Two-thirds of patients had two or more severe comorbidities. While two-thirds of patients were informed of their diagnosis, only one-third were aware of their end-of-life prognosis. The median length of stay in hospice was 15 days. Sixty-five caregivers participated in the study: 42 women and 23 men, with an average age of 59.4 ±21 (SD). Over three-quarters of caregivers were spouses (40%) or children (38.5%) of the patients.

The project was thoughtfully crafted to center on the patient, addressing the needs of those who are unwell. However, we also understand that there are times when caregivers, often weary and fragile, deserve our attention and support. In these instances, we have arranged for caregivers to be comfortably accommodated in a room adjacent to the patient's, complete with a restful bed. This thoughtful provision ensures that the patient can enjoy companionship, should they or their family request it, fostering a caring environment. Notably, in Italy and many other places, caregivers are often women, whose dedication and compassion deserve special recognition and care.

Ninety percent of patients and caregivers reported having no prior knowledge of reflexology. The characteristics of the participants are summarized in table 1.

During the study period, a total of 696 reflexology (FR) sessions were conducted, with 613 involving pa-

Table 1. Characteristics of patients and caregivers.

Patient characteristics	n= 193	
Female	102	52,8%
Male	91	47,2%
Average age	77,6 (±13, SD)	
Cancer sites	170	88,5%
Gastrointestinal system	25	
Genitourinary system	19	
Pleuro-pulmonary system	18	
Breast	14	
Hematopoietic system	11	
Liver and biliary tract	10	
Pancreas	7	
Central nervous system	3	
Others	12	
Non-oncological illness end-stage	20	11,5%
Heart failure	7	
Renal failure	4	
Dementia	2	
Cerebral stroke	1	
Amyotrophic lateral sclerosis	1	
Chronic obstructive pulmonary disease	1	
Number of comorbidities		
None	39	20,3%
1	42	21,9%
2	39	20,3%
>2	72	37,5%
Length of stay in hospice		
Median days (range)	15 (2-239)	
<5 Days	12	6%
6-10 Days	46	24%
11-30 Days	90	47%
30 Days	45	23%
Caregiver characteristics	n= 65	
Female	42	64,6%
Male	23	35,4%
Average age (±sd)	59,4 (±21)	
Relationship with the patient		
Spouse	26	40,0%
Son	25	38,5%
Brother/sister	6	9,2%
Grandchildren	4	6,2%
Parent	2	3,1%
Cousin	1	1,5%
Friend	1	1,5%

tients and 83 involving caregivers (table 2). Among the patients, 82 (42%) received only one reflexology session, 61 (32%) received two or three treatments, and 50 (26%) received four or more sessions (range: 4-48). Most patients reported feeling relaxed at the end of their treatments: 454 sessions were followed by patients declaring themselves "relaxed" (74%), and 49 sessions were followed by patients declaring themselves "very relaxed" (8%). Due to the short hospitalizations in our department, we were often only able to determine the intention of both patients and caregivers to repeat the treatment, as natural drop-outs occurred for patients who had passed away or were in the process of dying.

In 81 cases, or 13.2%, patients fell asleep during treatment, appearing calm and relaxed. Only 7 patients (1.2%) described the treatment as unpleasant or of little benefit. A significant portion of patients expressed satisfaction with the reflexology treatment: 24 patients (12.4%) were "very satisfied", and 141 (73%) were "satisfied". Only 4 patients (2.1%) reported being "not very satisfied". Additionally, 24 patients (12.4%) did not provide feedback on their experience.

Nearly all participants (95.3%) indicated they would be willing to repeat the experience, while 4.7% (only 7) did not offer any feedback. In these recent cases, treatment was provided to individuals unable to express their feelings, either due to dementia or advanced illness. This compassionate care decision stemmed from the consistent requests of the patients or the heartfelt pleas of family members on their behalf.

Regarding caregivers, most underwent only one treatment session (80.0%), with 8 caregivers (12,3%) returning for a second session and 5 (7,7%) for a third. Almost all caregivers described the treatment as either "very relaxing" (21.7%) or "relaxing" (72.3%), with a high level of satisfaction in 64.6% of cases (42 caregivers) and very high satisfaction in 20.0% (13).

Characteristics of patients and their caregivers are presented in table 1, while the frequency, reactions, and satisfaction with FR treatments are summarized in table 2.

Some questionnaire items were left incomplete, labeled as "undetermined data" (table 2). This oc-

Table 2. Foot reflexology (FR) treatments: frequency, reaction and satisfaction.

Number of FR treatments	Patients (n= 193)		Caregivers (n= 65)	
1	82	42%	52	80,0%
2	32	16,5%	8	12,3%
3	29	14,9%	5	7,7%
4-48	46	26,6%	-	-
Desire to receive another treatment	**Patients (n=193)**			
Yes	184 95,3%			
No	9 4,7%			
Reaction to FR	**Patient treatments (n= 613)**		**Caregiver treatments (n= 83)**	
Very relaxed	49	8,0%	18	21,7%
Relaxed	454	74,0%	60	72,3%
Sleepy and relaxed	81	13,2%	-	-
Quite relaxed	4	0,7%	1	1,2%
Not very relaxed	3	0,5%	2	2,4%
Undetermined data	22	3,6%	2	2,4%
Satisfaction with the FR experience	**Patients (n= 193)**		**Caregiver (n= 65)**	
Very satisfied	24	12,4%	13	20,0%
Satisfied	141	73,0%	42	64,6%
Not very satisfied	4	2,1%	1	1,5%
Undetermined data	24	12,4%	9	13,8%

curred either due to oversight or because end-of-life patients were unable to communicate because of their illness's progression.

Discussion

The results of this study indicate that a significant majority of patients and their caregivers highly appreciate foot reflexology (FR) during end-of-life care. More than half of the patients, as well as around one-fifth of the caregivers, received a second session of this treatment. The number of participants receiving more than two treatments diminished, likely due to the rapid progression of the patients' clinical conditions. Throughout the analysis period, the median length of stay in the hospice was just under two weeks. Only one patient declined further treatments, citing a lack of understanding about the therapy's effects. In other instances, patients discontinued treatments due to passing away.

The findings confirm a strong desire for repeated FR treatments during hospice stays, with no significant difference in desire between genders. Regarding satisfaction with and responses to FR, the study reveals a high level of appreciation from both patients and caregivers, emphasized by their willingness to undergo the treatment multiple times.

To date, no studies have specifically examined the satisfaction levels of end-of-life patients with FR. Existing literature primarily focuses on the psychological effects of reflexology among cancer patients, noting reductions in anxiety, depression, and pain associated with reflexology massage. Additionally, several studies have pointed out that palliative care patients and their caregivers often engage in ruminations over existential concerns, such as worries about the future, which are positively correlated with heightened psychological distress.

Another important aspect to consider is the impact on family members. Nearly half of the caregivers expressed a desire to receive FR themselves, with some opting for the treatment to find moments of relaxation amidst the stressful experience of supporting a loved one during their final journey.

This study has several methodological limitations. The first limitation concerns the clinical conditions of the patients at the time of their hospice admission. Some patients were experiencing very severe conditions that resulted in short stays and a reduced quality of life, characterized by pain and anxiety. These factors significantly affected their perception of and engagement with the treatment. The second limitation relates to the use of anxiolytics and antidepressants. Many terminally ill patients require psychopharmacological support to manage emotional symptoms such as worry, anxiety, depression, sleep disturbances, and fear of death. The administration of these medications, in conjunction with palliative care, could have influenced the patients' perceptions of their experiences and physical sensations. As a result, the findings may have been affected by the pharmacological treatments the patients received. Another methodological limitation is the short length of stay in the hospice. The median length of stay was under two weeks, which may restrict the assessment of the long-term effects of the foot reflexology treatment.

This study has several statistical limitations, including issues with sample size and generalizability. A significant percentage of patients dropped out due to death, which reduced the number of individuals available for multiple treatments. This raises concerns about sample size and may limit the statistical power of the results.

Additionally, the study does not mention a control group, which would be helpful in establishing a clearer cause-and-effect relationship between foot reflexology and the observed benefits, such as pain and anxiety reduction and improvements in sleep. The pharmacological treatments that patients were using, like anxiolytics and antidepressants, could have influenced the results as well, but the study did not statistically control for these factors. This oversight could create a confounding effect, thus weakening the conclusions regarding the effects of reflexology.

Finally, the study primarily presents descriptive findings, such as the percentages of patients receiving treatments, but it lacks robust statistical analysis, including tests for significance or confidence intervals, which are necessary to quantify the treatment effects.

This initial evaluation reflects our daily observations in clinical practice; however, it would be valuable to consider a prospective study designed to assess aspects we were unable to report, such as the spiritual dimension.

Further research is needed to explore and assess the effects of FR on patients' health, using specific tools to measure mental and physical outcomes during their hospice stay (e.g., pharmacological needs, anxiety, and pain levels). However, it is important to interpret the results in the context of the progressive decline associated with the clinical prognosis of terminal patients.

Conclusion

In conclusion, FR is a highly valued complementary therapy for patients and their caregivers. Patients consistently reported feeling relaxed during and after treatment and expressed a desire for additional sessions. We believe that FR is an important tool for supporting terminal patients and their families, providing a sense of care and comfort through a therapeutic,

non-pharmacological intervention. Reflexology offers a form of touch that brings relaxation and relief without the need for increased pharmacotherapy, allowing patients to rest naturally. It is a ritual of care and well-being that fosters a comfortable environment, leading many to want to experience it multiple times. While it may not improve the patient's health, FR can enhance the quality of their remaining time in hospice, helping them adapt during their final days.

Caregivers learn to be present in the "hic et nunc", a technique that helps them focus on their current sensations and find peace while reducing anxiety. By discussing the importance of taking time for themselves with a psychologist, and engaging holistically with a reflexologist, caregivers can enhance their overall experience. This collaborative approach among professionals who work closely with patients and caregivers daily creates multiple opportunities for self-reflection throughout the day, benefiting everyone involved.

Ultimately, this specific technique proves to be beneficial for terminally ill patients and their families. The final period of life is an incredibly precious time, to be spent wisely. Choosing to dedicate a portion of it to an activity focused on oneself, the development of meaning, and the connection between the physical and spiritual aspects, as taught by this ancient technique, allows one to reconnect with oneself and others in a way that is enriched by greater trust.

Conflict of interests: the authors declare the absence of conflict of interest.

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