Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 31s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Effectiveness Of Structured Physiotherapy Protocol On Physical Discomfort And Psychological Well-Being In Palliative Care Settings

Sunaina Lad[1], Trupti Yadav[2]

[1]Intern, Krishna College of Physiotherapy, Krishna Vishwa Vidyapeeth, Karad, Maharashtra/India.

[2]Associate Professor, HOD Department of Oncology, Krishna Vishwa Vidyapeeth, Karad, Maharashtra/India.

[*]**Corresponding author:**

Trupti Yadav

Cite this paper as: Sunaina Lad, Trupti Yadav, (2025) Effectiveness Of Structured Physiotherapy Protocol On Physical Discomfort And Psychological Well-Being In Palliative Care Settings. *Journal of Neonatal Surgery*, 14 (31s), 608-615.

ABSTRACT

Background: Palliative care focuses on improving the quality of life for individuals with life- limiting illnesses by addressing both physical and psychological challenges. Physiotherapy serves as a crucial non-pharmacological intervention, aiding in pain management, fatigue reduction, and mobility enhancement while also alleviating anxiety and depression. Through structured exercises, breathing techniques, and relaxation methods, physiotherapy fosters independence and overall well-being. Physiotherapists play a vital role in preserving functional abilities, challenging the assumption of inevitable decline. Key benefits include pain relief, enhanced mobility, and effective symptom management.

Materials & Methodology: The Interventional study included total of 51 individuals. They were assessed pre- and post-interventions using ESAS tool & EORTC QLQ C15 PAL questionnaire.

Results: The results suggests that the structured physiotherapy protocol was highly effective in improving symptoms or outcomes. The tailored interventions reduced pain, fatigue, and breathlessness, while improving overall quality of life.

Conclusion: This study shows that structured physiotherapy protocol can effectively alleviate physical discomfort and improve psychological well-being in palliative care patients. Integrating physiotherapy into palliative care can better address patients' complex needs.

Keywords: *Physiotherapy, Palliative Care, Physical discomfort, psychological well-being, Quality of life.*

1. INTRODUCTION

Palliative care aims to enhance the quality of life for individuals with life-limiting illnesses by addressing both physical and psychological distress [1]. Patients in these settings often suffer from pain, fatigue, muscle weakness, and restricted mobility, all of which significantly impact their daily functioning [2]. Additionally, many experience psychological challenges such as anxiety and depression, further affecting their well-being.

Physiotherapy focuses on determining and optimizing movement potential in the contexts of promotion, prevention, treatment, and rehabilitation. As members of a multidisciplinary team of care, physical therapists treat the functional and physical aspects of patients' suffering in a variety of inpatient, outpatient, and community-based settings, including palliative care facilities [3]. Physiotherapy has gained recognition as an essential non-pharmacological intervention in palliative care, helping to manage symptoms, improve mobility, and enhance overall physical function [4]. Structured physiotherapy programs, which incorporate structured exercise routines, breathing techniques, and relaxation strategies, have demonstrated potential in alleviating physical discomfort and promoting emotional well-being. While medication remains a fundamental component of symptom management, physiotherapy serves as a valuable complementary approach that fosters independence and improves quality of life.

The incorporation of physiotherapeutic palliative care into the management of advanced-stage illness has gained much attention for its capacity to improve patient quality of life and overall outcomes. The overarching goal of physiotherapy in palliative care is to help the patient live as fully as possible for the rest of their life, taking care of both their physical and emotional health for as long as feasible. Patients, their relatives, and medical professionals frequently consider a loss of function as inevitable when a patient has an incurable illness and do not utilize their remaining abilities. The physiotherapist,

who focuses on the human body's physical capabilities and aims for rehabilitation, has a crucial role to play in reminding and activating the functions that are still intact [5].

Physiotherapy in palliative settings can have considerable benefits:

Pain: Methods that reduce discomfort and encourage relaxation include, relaxation techniques, light exercises, and posture modification.

Mobility and Independence: To promote more functionality, physiotherapists assist patients in maintaining or enhancing their strength, balance, and range of motion.

Quality of Life: Frequent physiotherapy sessions can help people feel more in control of their bodies, feel less anxious, and feel happier.

Symptom Control: Physiotherapy is an effective treatment for a variety of symptoms that patients with progressive and chronic illnesses frequently encounter, such as musculoskeletal pain, lymphedema, fatigue, and dyspnea [6].

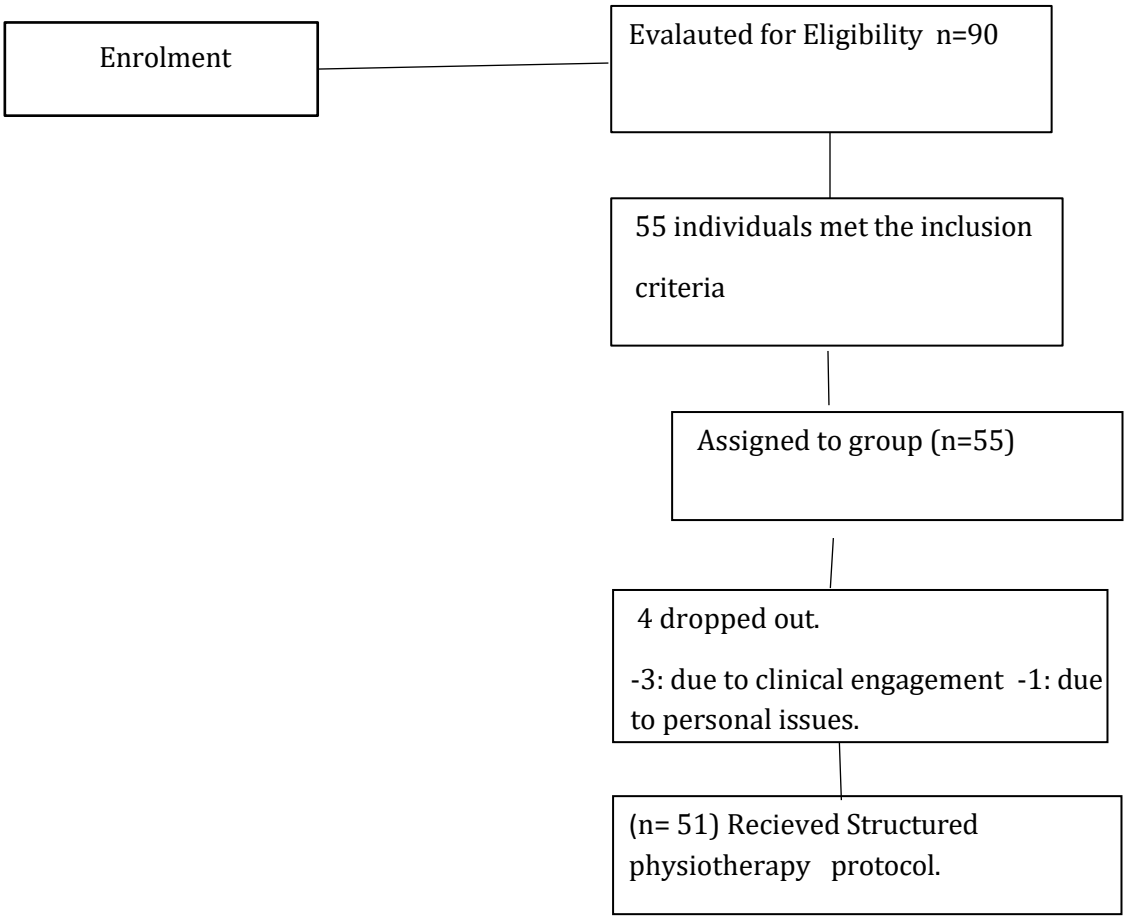
Although there is increasing evidence supporting physiotherapy's role in palliative care, further research is needed to systematically evaluate the effectiveness of structured physiotherapy protocols in reducing discomfort and improving psychological health. This study seeks to examine the impact of these interventions, contributing to existing knowledge and informing clinical practices. A better understanding of physiotherapy's role in palliative care can lead to more comprehensive treatment strategies that address both physical and emotional needs.

2. MATERIALS & METHODOLOGY

The Ethical Committee and Protocol Committee authorized the research investigation (protocol number- 302/2024-2025). The research was an Interventional study involving 51 participants including both genders from the Palliative care unit of Krishna Hospital, Karad. The research recorded the pre- and post-treatment values between the same group that lasted for a duration of 4 weeks. The goal of the study was to find the effectiveness of Structured Physiotherapy Protocol on physical discomfort and psychological well-being in palliative care settings, to assess the impact of physiotherapy interventions on pain and physical discomfort, to evaluate the effect of physiotherapy on patients' psychological well-being in palliative care settings. And to explore the experiences and perceptions of patients and health care providers regarding physiotherapy interventions.

This study was executed according to the established inclusion and exclusion criteria. Participants were informed about the nature of the study, its duration, and the intervention used in their preferred language. This study included subjects diagnosed with advanced stage illness ranging in age from 18 to 80 years, with a pain score of >4 (ESAS) recorded during the first visit, and with an ESAS score of >5 for fatigue. Additionally, those who can provide informed consent or have a legally authorized representative were included. Patients who are not terminally sick, have serious cognitive impairment, or are under the age of 18 or above 80 years. Subjects who were unable to engage in physical activity (e.g., bedridden or severely debilitated) were excluded from this study. This study was conducted on 51 subjects with terminal illnesses in palliative care unit of Krishna Hospital. Informed consent was taken from the study participants & baseline data was collected. Pre-assessment was done regarding pain, fatigue, quality of life & psychological well-being of patients. They were assessed with Edmonton symptom assessment scale (ESAS) and EORTC QLQ C-15 questionnaire [7,8] The study evaluated an overall 90 individuals, out of which 55 individuals met the eligibility criteria and provided their consent to participate. The individuals taking part in the research were assigned to a group, who received a preset structured physiotherapy protocol for 3 times a week for 30 mins; for 4 weeks duration. During the 4-week program, three participants from the group were unable to complete the protocol due to clinical engagements, and 1 opted to resign from the protocol due to their personal choice of interest, resulting in their withdrawal from the study. (Fig no. 1)

Figure No. 1: Flowchart illustrating the evaluation process of study subjects.



A structured rehabilitation protocol was implemented three times a week for 30 minutes over four weeks duration. The treatment plan was progressively designed as follows:

In **Week 1**, breathing exercises included diaphragmatic breathing and thoracic expansion exercises (10×1). Range of motion (ROM) exercises consisted of ankle toe movements, heel slides, upper and lower limb ROM, and cervical ROM (10×1). Strengthening exercises incorporated isometrics (10×1) with 5-second holds and resistance training with free weights (40–60% of 1RM). Posture correction and positioning were maintained, and ambulation was encouraged as tolerated around the bed [9,10].

In **Week 2**, breathing exercises were progressed to (10×2), while ROM exercises also increased to (10×2). Strengthening exercises progressed to isometrics (10×2) with 10-second holds and resistance training with weights at 60–70% of 1RM. Posture correction was continued, and ambulation was promoted with increased walking duration.

In **Week 3**, breathing exercises were further increased to (10×3), and ROM exercises were performed at (10×3). Strengthening exercises advanced to isometrics (10×3) with 10-second holds and resistance training at 80–90% of 1RM. Posture maintenance was emphasized, and ambulation duration was extended. Balance training, including tandem standing, tandem walking, and single- leg standing, was introduced.

In **Week 4**, all exercises from Week 3 were continued. Additionally, relaxation techniques such as Jacobson's progressive muscle relaxation were incorporated. An aerobic training program was implemented, consisting of a warm-up (5–10 minutes), exercise (30 minutes), and a cool-down (5 minutes) that included stretching [11].

3. RESULTS

Statistical analysis:

For data analysis, the data was entered into an Excel spreadsheet, and statistical analysis was performed using the Instat app. Descriptive statistics were utilized, and paired t-tests were employed to ascertain significant differences between pre- and

post- Interventional group across (ESAS Tool & EORTC QLQ C15 PAL) outcome measures. Statistical significance was set at $p < 0.05$.

Informed consent: The informed consents had been obtained from all individuals who were involved in this research.

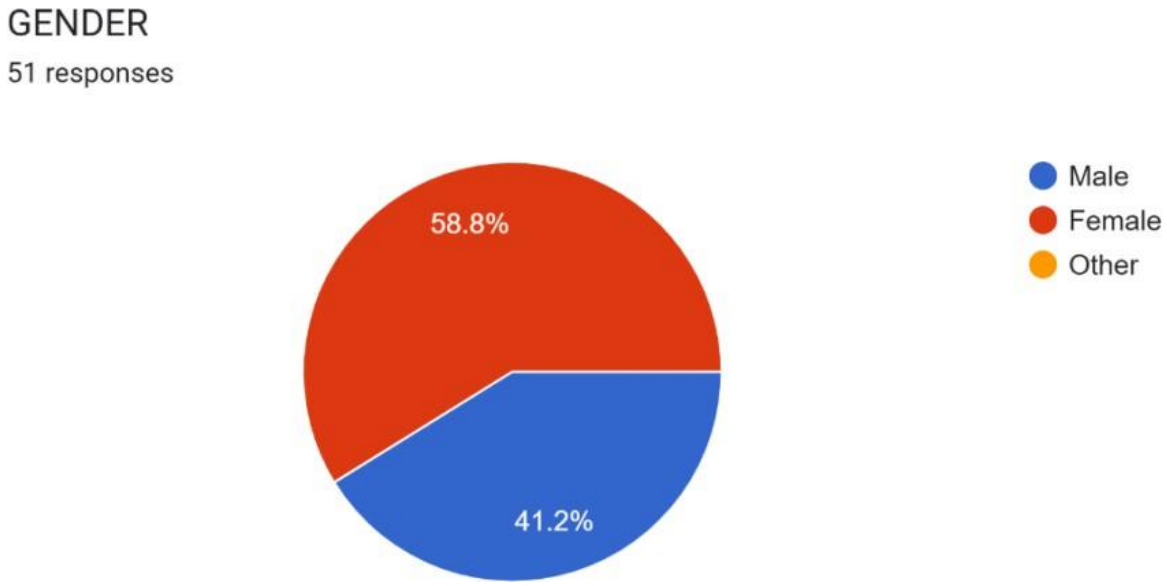
Table no. 1: Age variables of subjects involved in this study.

AGE (years old)	COUNT
30 -40	5
41- 50	7
51-60	17
61-70	14
71-80	8
TOTAL	**51 (100%)**

Interpretation:

The majority of participants (33.3%) fall within the 51-60 age range. More than half of the participants (51.0%) are between 51-70 years old. The youngest age group (30-40 years) accounts for the smallest proportion of participants (9.8%). Overall, the age distribution suggests that the majority of participants are middle-aged to older adults, with a relatively small proportion of younger adults. The minimum age found was 32 years & maximum age found was 79 years. The mean age found was 57.27 with standard deviation of 11.47.

Figure No.2: Represents the gender variables of individuals in this study.



Interpretation:

The study's participant demographics revealed a notable gender imbalance, with a significantly higher proportion of female participants. Women comprised 58.8% of the total study population, whereas men accounted for 41.2%.

Table No. 2: Pre- & Post-test evaluation of individuals according to ESAS tool.

SYMPTOMS	SCORES	PRE-TEST (no. of individuals)	POST-TEST (no. of individuals)
MILD	0-20	0	0
MODERATE	21-40	6	28
SEVERE	41-60	40	23
VERY SEVERE	61-90	5	0

Interpretation:

Pre-Intervention: The majority of individuals i.e, 78.4% fall into the severe category, indicating a high level of distress. 11.8% of individuals fall in moderate category. Followed by 9.8% in very severe category indicating extreme distress. No individual reported mild symptoms suggesting that the population studied is experiencing significant symptom burden.

Post-Intervention: The majority of individuals i.e, 54.9% fall into the moderate category, indicating some discomfort. 45.1% of individuals fall in severe category suggesting higher level of discomfort. Notably no individuals report Very severe symptoms or Mild symptoms.

Changes in Symptoms Severity:

- The proportion of patients with severe symptoms decreased by 33.3% (from 78.4% to 45.1%).
- The proportion of patients with moderate symptoms increased by 43.1% (from 11.8% to 54.9%).
- The proportion of patients with very severe symptoms decreased by 9.8% (from 9.8% to 0%)

Overall, the results suggest a significant shift towards milder symptoms, with a substantial decrease in severe and very severe symptoms, and a corresponding increase in moderate symptoms.

Table No.3: Comparison of Pre- & Post-treatment values of ESAS tool.

	PRE	POST	p-value	t-value
ESAS TOOL	49.490±7.330	40.62 ±51	<0.0001	14.50

Interpretation:

The significant decrease in mean scores (pre-test: 49.49 vs. post-test: 40.62) indicates a substantial improvement in symptoms or outcomes. The highly significant p-value (< 0.0001) suggests that the observed difference is unlikely due to chance. The large t-value (14.50) further supports the presence of a significant effect.

Overall, these results suggest that the intervention or treatment was highly effective in improving symptoms or outcomes.

Table No.4: Comparison of Pre- & Post-treatment value of EORTC QLQ C15 PAL Questionnaire.

	PRE	POST	p-value	t-value
EORTC QLQ C15 PAL Questionnaire	48.87±4.286	51.11 ± 3.44	<0.0001	5.086

Interpretation:

The results show a statistically significant increase in scores from pre-test to post-test, as indicated by the p-value of less than 0.0001. This suggests that the intervention or treatment had a highly significant positive effect. The t-value (5.086) indicates a statistically significant.

4. DISCUSSION

The results of this study demonstrate a significant reduction in physical discomfort among patients receiving structured physiotherapy interventions in palliative care settings. This finding is consistent with previous studies that have shown physiotherapy to be effective in reducing pain, fatigue, and other symptoms in patients with advanced illnesses [12].

In palliative care settings, age is often correlated with the prevalence and severity of advanced illnesses and conditions. The presence of multiple comorbidities and frailty in older adults further complicates symptom management and necessitates comprehensive care approaches. Physiotherapy plays a crucial role in improving the quality of life for palliative care patients by, reducing pain, and coping unique challenges, including social isolation, caregiver burden, and decision-making capacity issues. Thus, goals of care discussions and advanced care planning become essential to align medical interventions with patient preferences. While age is not the sole determinant of palliative care needs, it significantly influences disease burden, care approaches, and outcomes. Understanding this correlation helps in tailoring palliative care strategies to improve comfort and quality of life for aging individuals with advanced illnesses.

Physiotherapy plays a crucial role in enhancing physical comfort, psychological well-being, and overall quality of life (QOL) for patients in palliative care. Studies suggest that physiotherapy interventions, such as pain-relief techniques, gentle exercise, and mobility training, can significantly reduce musculoskeletal discomfort and improve functional independence [13]. Additionally, physiotherapy interventions such as guided breathing exercises and relaxation techniques contribute to psychological well-being by alleviating anxiety, depression, and distress commonly experienced by palliative care patients [14]. By improving mobility and reducing physical symptoms, physiotherapy enables patients to engage in meaningful activities, thereby enhancing their overall sense of well-being and dignity in the final stages of life [15].

The rehabilitation protocol proved effective in alleviating physical discomfort, enhancing psychological well-being, and improving overall quality of life (QOL). The structured breathing and ROM exercises alleviated muscle stiffness, enhanced joint mobility, and improved circulation, leading to reduced pain and discomfort. Strengthening exercises contributed to improved muscle endurance, joint stability, and functional strength, facilitating enhanced movement efficiency and physical resilience.

The inclusion of relaxation techniques, such as Jacobson's progressive muscle relaxation, played a crucial role in mitigating stress, anxiety, and muscular tension. This, in turn, led to improved sleep quality and overall psychological well-being. The gradual increase in ambulation and balance training not only enhanced endurance and mobility confidence but also reduced fall risk and promoted greater independence in daily activities.

Furthermore, the aerobic training component significantly contributed to cardiovascular health by improving circulation, increasing lung capacity, and enhancing overall energy levels. The structured nature of the rehabilitation plan established a sense of routine, empowering participants to take control of their recovery process. The progressive and adaptive approach ensured sustained improvements in both physical and psychological health, ultimately leading to an enhanced quality of life and greater participation in daily activities.

The tailored physiotherapy interventions used in this study addressed the specific physical needs of each patient, which may have contributed to the observed reduction in physical discomfort. This is supported by a study by McNeely et al. [16], which found that individualized exercise programs improved physical function and reduced symptoms in patients with cancer.

In addition to physical benefits, the structured physiotherapy interventions used in this study also had a positive impact on psychological well-being. This is consistent with previous research that has shown exercise and physical activity to have antidepressant and anxiolytic effects (Harris et al., 2006; Schmitz et al., 2010) [17]. The mechanisms underlying the psychological benefits of physiotherapy in palliative care are complex and multifaceted. However, it is likely that the social support and interaction provided by physiotherapists, as well as the sense of control and empowerment that comes from engaging in physical activity, contribute to the observed improvements in psychological well-being.

Thus, the integrated rehabilitation approach provided a comprehensive strategy addressing both physical and psychological recovery, fostering long-term well-being and functional independence.

Also, the results of this study have important implications for the integration of physiotherapy into palliative care services. Healthcare providers should consider incorporating structured physiotherapy interventions into routine care to address the complex physical and psychological needs of patients with advanced illnesses.

5. CONCLUSION

This study demonstrates the efficacy of a structured physiotherapy protocol in alleviating physical discomfort and enhancing psychological well-being in patients receiving palliative care. The findings suggest that tailored physiotherapy interventions

can significantly reduce symptom burden, while improving mood, anxiety, and overall quality of life. The results of this study have important implications for the integration of physiotherapy into palliative care services. By incorporating structured physiotherapy protocols into routine care, healthcare providers can better address the complex physical and psychological needs of patients with advanced illnesses.

Future research should focus on exploring the long-term effects of physiotherapy interventions in palliative care, as well as investigating the feasibility and effectiveness of implementing these protocols in diverse clinical settings. Ultimately, this study contributes to the growing body of evidence supporting the value of physiotherapy in palliative care, and highlights the importance of interdisciplinary collaboration in optimizing patient outcomes.

6. LIMITATIONS

While this study provides valuable insights into the benefits of structured physiotherapy protocols in palliative care, it is not without limitations. Future studies should aim to address these limitations, such as the small sample size and lack of control group.

7. ACKNOWLEDGEMENT

The authors would like to acknowledge the guidance and constant support of Dr. G Varadharajulu, Dean, Krishna College of Physiotherapy, KVV, Karad and Mr. Mahendra Alate for helping in statistical analysis.

Ethical consideration: The ethical approval for undertaking the proposed study has been obtained from the Institutional Ethics Committee of Krishna Vishwa Vidyapeeth (Deemed to be University), Karad, Maharashtra, India, with the letter no. KVV/IEC/01/2025 dated.

Financial support and sponsorship: Nil

Conflicts of interest: There is no conflict of interest.

REFERENCES

[1] World Health Organization (WHO). (2020: https://www.who.int/news-room/fact- sheets/detail/palliative-care,

[2] Barawid, Edward & Covarrubias, Natalia & Tribuzio, Bianca & Liao, Solomon. (2013).: The Benefits of Rehabilitation for Palliative Care Patients.. The American journal of hospice & palliative care. 32. . 10.1177/1049909113514474.

[3] Bennardi M., Diviani N., Gamondi C., et al.: Palliative care utilization in oncology and hemato-oncology: a systematic review of cognitive barriers and facilitators from the perspective of healthcare professionals, adult patients, and their families.. 10.1186/s12904- 020-00556-7

[4] Kumar, S., & Jim, A. (2010: Physical therapy in palliative care: A systematic review. American Journal of Hospice and Palliative Medicine. 27:195-202. 10.4103/0973- 1075.73670

[5] Ogundunmade BG, John DO, Chigbo NN: Ensuring quality of life in palliative care physiotherapy in developing countries. . Front Rehabil Sci. 2024 Feb. 10.3389/fresc.2024.1331885

[6] Frymark U, Hallgren L, Reisberg A: Physiotherapy in palliative care-a clinical handbook. Dostopno na: (Datum dostopa: 5. 10. 20112010212023.

[7] https://albertametis.com/app/uploads/2022/01/ESAS-Tool_V4.pdf.

[8] EORTC QLQ-C15 PAL: .

[9] Ren J, Li Z, He Y, Gao H, Li J, Tao J: Systematic review and meta-analysis of breathing exercises effects on lung function and quality of life in postoperative lung cancer patients. J Thorac Dis. 2024, 30:4295-4309.

[10] Campbell KL, Winters-Stone KM, Wiskemann J, et al.: Exercise Guidelines for Cancer Survivors: Consensus Statement from International Multidisciplinary Roundtable. Med Sci Sports Exerc. 2019, 51:2375-2390. 10.1249/MSS.0000000000002116.

[11] Rodríguez-Cañamero S, Cobo-Cuenca AI, Carmona-Torres JM, et al.: Impact of physical exercise in advanced-stage cancer patients: Systematic review and meta-analysis. Cancer Med. 2022, 11:3714-3727.

[12] Buss, T., Ross, J., & Reynolds, J. (2015: Physiotherapy in palliative care. Journal of Pain and Symptom Management. 50:431-436. 10.1016/j.jpainsymman.2015.04.008

[13] Gomes B, Higginson I J, Calanzani N, et al.: Preferences for place of death if faced with advanced cancer: A population survey in England, Flanders, Germany, Italy, the Netherlands, Portugal and Spain. Annals of Oncology. 24:2006- 2015. 10.1093/annonc/mdr602

[14] Phokontsi, Lesley,Mweetwa, Larry,Bpharm Msc Clinpharm Msc Pv Phd Pharmacology, Larry : A Systematic

Review of the Role of Physiotherapy Interventions in Palliative Care. 32:768-780. 10.20944/preprints202004.0519.v1

[15] Brugliera L., Spina A., Castellazzi P., et al.: Rehabilitation of COVID-19 patients. Journal of Rehabilitation Medicine. 52:00046. 10.2340/16501977-2678

[16] McNeely, M. L., Parliament, M. B., & Seikaly, H. (2015: Does exercise improve outcomes in patients with cancer?. Canadian Medical Association Journal. 187:793- 794. 10.1503/cmaj.150643

[17] Harris , S. E. : The impact of exercise on mental health. Journal of Clinical Psychology. 62:179-191. 10.1002/jclp.20222