

## Analysis of Patients Hospitalised in the Comprehensive Palliative Care Service- 1-Year Experience

*Kapsamlı Palyatif Bakım Servisinde Yatan Hastaların Analizi-1 Yıllık Deneyim*

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### Abstract

**Background:** It was aimed to evaluate the patients who were admitted to Samsun Training Research Hospital (STRH), palliative care service (PCS) since it was started to be admitted by family-medicine clinic.

**Materials and Methods:** Cross-sectional, retrospective study consisted of all PC-patients admitted to STRH-PCS between 01/12/2019-01/12/2020. Gender, age, occupation, blood type, diagnosis, where we were consulted from, how many days of received, how many hospitalizations were made, number of deaths, reason for hospitalization, requests for imaging, specific interventional procedures etc. was collected with the help of automation-system and analyzed in SPSS.

**Results:** The mean age of the participants in the study was 76.3±12.9 years, and the female ratio was 51.3%. The majority of the people's blood groups were found to be A Rh+ with 36.9%. The average hospitalization period of the individuals was 12.0±10.4 days, and it was determined that the most hospitalizations were made in winter with 46.7%. While 62.8% of the individuals were discharged from the hospital, it was determined that 21.7% of them died. It was determined that nearly half of the patients were hospitalized due to nutritional deficiencies. The primary diagnosis distributions of the individuals Lung-cancer (15.8%), Cerebrovasculer disease (CVD) (14.8%) and Alzheimer's disease (14.1%),

**Conclusion:** More consultation was requested from the emergency department and intensive care departments, and patients who were asked to have direct radiography as an imaging need died more.

**Keywords:** Palliative care, Family practice, Holistic health

### ÖZ

**Amaç:** Bu çalışmada, aile hekimliği kliniğince yürütülmeye başlandığı zamandan itibaren Samsun Eğitim ve Araştırma Hastanesi (SEAH) Palyatif Bakım Servisi'ne (PBS) yatan hastaları değerlendirmek amaçlanmıştır

**Gereç ve Yöntem:** Kesitsel, retrospektif dizayndaki çalışmanın evrenini SEAH PBS'ne 01 Aralık 2019- 01 Aralık 2020 tarihlerinde yatışı yapılan tüm PB hastaları oluşturmuştur. Cinsiyet, yaş, meslek, kan grubu, tanı, nereden konsülte edildiği, kaç gün kabul edildiği, kaç yatış yapıldığı, ölüm sayısı, yatış nedeni, görüntüleme istekleri, spesifik girişimsel işlemler vb. otomasyon sistemi yardımıyla toplandı ve SPSS'de analiz edildi.

**Bulgular:** Çalışmaya katılanların yaş ortalaması 76,3±12,9 yıl ve kadın oranı %51,3 idi. Kişilerin kan gruplarının %36,9 ile çoğunluğunun A Rh+ olduğu tespit edildi. Bireylerin ortalama yatış süresi 12,0±10,4 gün olup, en fazla yatışın %46,7 ile kış aylarında yapıldığı belirlendi. Bireylerin %62,8'i hastaneden taburcu edilirken, %21,7'sinin hayatını kaybettiği belirlendi. Hastaların yarıya yakınının beslenme yetersizliği nedeniyle hastaneye yatırıldığı tespit edildi. Kişilerin ilk 3 sıradaki primer tanı dağılımları sırayla Akciğer kanseri (%15,8), Serebrovasküler olay (SVO) (%14,8) ve Alzheimer hastalığı (%14,1) olduğu saptandı..

**Sonuç:** Acil departmanı ve yoğun bakım departmanlarından daha fazla konsültasyon istendiği, görüntüleme ihtiyacı olarak direkt grafi istenen hastaların daha fazla vefat ettiği saptanmıştır.

**Anahtar Kelimeler:** Palyatif bakım, Aile hekimliği, Bütüncül sağlık

- Integrating family medicine and palliative care a service experience shared.
- Consultations and hospital units were analyzed.
- Reasons for hospitalization and associated factors of diseases analyzed.

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Received: 10 March 2024

Accepted: 19 May 2024

Cite as: GOKTEPE.M.E. et al. Analysis of Patients Hospitalised in the Comprehensive Palliative Care Service- 1-Year Experience. IJCMBS 2024;4(2):62-8 doi.org/10.5281/zenodo.11187739

## Introduction

According to the World Health Organization (WHO) definition, palliative care is an approach to improve the quality of life of patients and their relatives who face a life-threatening disease and is a care that aims at early detection and treatment of physical, psychosocial and spiritual problems, especially pain (1, 2).

The most common end-of-life complaints and findings in palliative cancer patients are pain, malnutrition, nausea, weakness, shortness of breath, internal distress, confusion and pressure sores. In order to achieve quality and continuous care in case management, many professionals such as family physicians, specific branch specialists, nurses, dieticians, psychologists, spiritual support specialists, physiotherapists and sociologists should work together and clinical guidelines and care protocols should be used (3,4,5).

The goal should always be maximum benefit with minimum investigation and treatment. Palliative care does not aim to accelerate or postpone death and has many benefits in cancer patients. Integrating the psychosocial aspects of patient care into physical care, supporting patients to lead an active life as much as possible until the last moment, providing support to patients' relatives to cope with their own grief processes during and after the disease process, using a team approach to meet the needs of patients and their relatives, including grief counseling when necessary, improving quality of life, and positively affecting the disease process are just a few of these (6). There are a wide variety of palliative care practices in the world. Worldwide Hospice Palliative Care Alliance (WHPCA) stated that palliative care services are provided in 3 of 5 continents (7). There are various palliative care practices around the world. Palliative care services have entered a rapid development process in developed countries such as the Scandinavian countries, the UK and Canada since the early 1990s (8). Palliative care is not intended to hasten or postpone death but has many benefits for cancer patients. Integrating psychosocial aspects of patient care into physical care, supporting patients to lead an active life as much as possible until the end, providing support to patients' relatives to cope with their own grief processes during and after the disease process, using a team approach to meet the needs of patients and their relatives, including grief counseling when necessary, improving quality of life, and positively affecting the disease process are just a few of these. In this study, we aimed to evaluate the patients hospitalized in the comprehensive palliative care service of Samsun Training and Research Hospital (STRH) since the beginning of its implementation by the family medicine clinic.

## Materials and Methods

This study was cross-sectional, retrospective and analytical in design. The beds allocated for palliative care in the Comprehensive Palliative Care Service of Samsun Training and Research Hospital. The sample of the study consists of 304 patients admitted to the palliative care service for palliative care between December 1, 2019 and December 1, 2020. All palliative care patients who were hospitalized will be included. Without sharing the private information of the patients, gender, age, blood group, diagnosis, from where they were consulted, how many times consultation requests were made by us, how many days of service they received, how many times they were hospitalized, in which seasons they were hospitalized, the number of deaths, the number of discharges, the number of transfers, where the transfers were to, the specific interventional procedures performed, from which province and district they were hospitalized, information was collected with the help of the automation system

## Statistical Analysis

Descriptive measures: mean and standard deviation, minimum-maximum values were presented. Chi-square test was used to compare the analytically expressed data, statistical analyses were evaluated using SPSS version 19 package program. (IBM Corp. Released 2010. IBM SPSS Statistics for Windows, Version 19.0. Armonk, NY: IBM Corp.) The conformity of the data to normal distribution was checked by Kolmogorov-Smirnov test. Chi-square or Fisher's exact test was used to compare the distributions between age groups The significance level was taken as  $p < 0.05$ . Volunteers were included in the study as male and female and over 18 years of age. Ethical approval: written permission was obtained from the following institution for the study Health Sciences University Samsun Training and Research Hospital Non-Interventional Clinical Research Ethics Committee GOKA/2021/3/2 decision by 13.02.2021 date. Since this study was retrospective, informed patient consent statement was not collected.

## Results

A total of 304 patients were included in the study. The mean age of those included in the study was  $76.3 \pm 12.9$  years and the female sex ratio was 51.3% (n:156). The majority of the blood groups were A Rh+ (36.9%) and O Rh+ (31.2%). The mean duration of hospitalization was  $12.0 \pm 10.4$  (median: 9) days and it was found that most

hospitalizations were made in winter months. While 62.8% of the patients were discharged from the hospital, 21.7% of the patients died. Direct radiography was performed in 49.3% (n: 150) of the patients and the average number of radiographs was 2.5. It was found that the majority of the patients resided in Samsun province (93.1%) (n:283) and 72.4% (n:207) of the patients residing in Samsun province lived in the central districts. While the reason for hospitalization of almost half of the people was nutritional deficiency, respiratory palliation and wound site care were found to be the other high frequency reasons. The distribution of the primary diagnoses in the provinces in the order of the 3 primary diagnoses were Lung cancer (15.8%, n: 48), CVD (14.8%, n: 45) and Alzheimer's disease (14.1%, n: 43). Specialized interventional procedures were performed in 24.3% (n: 74) of the patients and the most common interventional procedure was PEG opening. The vast majority of the patients were hospitalized by the outpatient or outpatient clinic. Among those who were hospitalized, the mean hospitalization was 1.2±0.5. The majority of the patients were hospitalized from the emergency medicine outpatient clinic. The mean number of consultations made to us was 0.8±0.7 and the mean number of consultations made by us was 9.3±8.2 (median:7) (Table 1).

**Table 1. Descriptive characteristics of the participants**

Age, Mean± SD	76.3±12.9*	Hospitalization Season, n (%)		City, n (%)	
				Samsun	283 (93.1)
Sex, n (%)		Autumn	66 (21.7)	Other	21 (6.9)
Male	148 (48.7)	Winter	142(46.7)	District, n (%)	
Female	156 (51.3)	Spring	20 (6.6)	Center	207 (72.4)
Age Group, n (%)		Summer	76 (25)	Periphery	79 (27.6)
18-64	52 (17.1)	Discharge Form, n (%)		Reason for Hospitalization n (%)	
65-74	73 (24)	Transfer to Another Service	7 (2.3)	Pain palliation	25 (8.2)
75-84	86 (28.3)	Discharged from Hospital	191 (62.8)	Lack of Nutrition	154 (50.7)
Over 85	93 (30.6)	External Referral	1 (0.3)	Respiratory Deficiency	40 (13.2)
Hospitalization Day, Mean± SD	12± 10.4	Transfer to Intensive Care	7 (2.3)	Wound Site Care	40 (13.2)
Blood Type, n (%)		Death	66 (21.7)	Other	45 (14.8)
A Rh+	97 (36.9)	Radiology, n (%)		Primary Diagnosis n (%)	
A Rh -	18 (6.8)	Direct radiography	150 (49.3)	Gastrointestinal Cancer	53 (17.4)
B Rh+	23 (8.7)	Tomography	48 (15.8)	Respiratory Tract Cancers	53 (17.4)
B Rh-	4 (1.5)	MR	19 (6.3)	Other Cancers	39 (12.8)
AB Rh+	21 (8)	USG/ECO	96 (31.6)	Alzheimer-Parkinson-Dementia	62 (20.4)
AB Rh-	6 (2.3)			Cerebrovascular Diseases	45 (14.8)
		Frequency of radiological examinations requested, Mean± SD			
0 Rh+	82 (31.2)	Direct radiography	2.5 ± 2.4	Other Diagnoses	52 (17.1)
0 Rh-	12 (4.6)	Tomography	2.0± 1.6		
		MRI	1.2 ± 0.5		
		USG/ECO	1.9 ± 1.4		

**Table 1. Descriptive characteristics of the participants (continued)**

Admitted to services, n(%)	
Outpatient	8 (2.6)
Handover	119 (39.1)
Home health services	53 (17.4)

Polyclinic	124 (40.8)
<b>How many hospitalizations Mean±SD</b>	1.2 ± 0.4
<b>Where the patient was admitted, n(%)</b>	
Emergency Medicine Department	120 (39.5)
Intensive Care	94 (30.9)
Internal Clinics	31 (10.2)
Surgical Clinics	6 (2)
Home Health Services	53 (17.4)
<b>How many times have we been consulted, Mean±SD (Median)</b>	0.8 ± 0.7 (1)
<b>How many times have we consulted? Mean±SD, (Median)</b>	9.3 ± 8.2 (7)

PCS is a multidisciplinary clinic that works with a wide range of procedures and serves all types of patient groups and diseases. Our main findings also show results in this direction.

The statistical analysis revealed no significant relationship between season distribution and hospitalization location (**Table 3**). According to chi-square analysis, a statistically significant difference in mortality rates was found between individuals who required direct radiography and those who did not ( $p < 0.001$ ) (**Table 4**). The statistical analysis showed that there was no significant difference in the distribution of blood groups between males and females. The prognosis of patients did not show any statistically significant relationship with their blood groups, as found by the statistical analysis. The statistical analysis found that patients who died most frequently had a primary diagnosis of respiratory cancers and there was a significant difference between this group and others. Besides, the emergency medicine department or intensive care unit was statistically significantly more likely to request consultation than other units (**Table 6**). As a result of the statistical analysis, no statistically significant difference was detected between age groups in terms of life prognosis (**Table 2**). It was determined that the people who died were most frequently diagnosed with respiratory cancers and there was a statistically significant difference between the groups (**Table 5**).

**Table 2. Comparison of prognosis distributions between age groups and comparison of hospitalization durations between age groups analysis**

Age, n (%)	Discharge or Referral	Exitus	Total	P
18-64	39 (16.4)	13 (19.7)	52 (17.1)	0.246
65-74	53 (22.3)	20 (30.3)	73 (24.0)	
75-84	67 (28.2)	19 (28.8)	86 (28.3)	
Over 85	79 (33.2)	14 (21.2)	93 (30.6)	

\*Chi-square

**Table 3. Examination of the relationship between the season of hospitalization and the distribution of reasons for hospitalization**

Reasons for hospitalization, n (%)	Season				P
	Autumn	Winter	Spring	Summer	
Pain palliation	6 (24)	7 (28)	3 (12)	9 (36)	0.242
Lack of nutrition	31 (20.1)	71 (46.1)	17 (11)	35 (22.7)	
Lack of respiration	9 (22.5)	23(57.5)	2 (5)	6 (15)	
Wound site care	5 (12.5)	14 (35)	4 (10)	17 (42.5)	
Other	8(17.8)	21(46.7)	3(6.7)	13(28.9)	

\*Chi-square

**Table 4. Examination of the relationship between prognosis in patients with and without the need for direct radiography**

Prognosis, n (%)	Direct radiography		P
	No	Yes	
Discharge or Referral	134 (87)	104 (69.3)	0.001
Death	20 (13)	46 (30.7)	

\*Chi-square

**Table 5. Examination of the relationship between primary diagnosis and mortality status**

Diagnosis, n (%)	Exitus		P
	No	Yes	
Gastrointestinal cancer	38 (16)	15 (22.7)	0.041
Respiratory cancers	37 (15.5)	16 (24.2)	
Other cancers	28 (11.8)	11 (16.7)	
Alzheimer-Parkinson-Dementia	49 (20.6)	13 (19.7)	
Cerebrovascular diseases	38 (16)	7 (10.6)	
Other diagnoses	48 (20.2)	4 (6.1)	

\*Chi-square

**Table 6. Examination of the relationship between consultation request and place of hospitalization**

Departments, n (%)	Consultation Request		P
	No	Yes	
Emergency medicine department	40 (35.1)	80 (42.1)	0.001
Intensive care	15 (13.2)	79 (41.6)	
Internal clinics	13 (11.4)	18 (9.5)	
Surgical clinics	0 (0)	6 (3.2)	
Home health services	46 (40.4)	7 (3.7)	

\*Chi-square

## Discussion

We shared the first regular PCS data since the day it was managed by the family medicine clinic in Samsun. In the study conducted by Benli et al. on the coordinated work of home health services and palliative service, the mean age of the patients was 74.93±14.61 years, 42.95% were male and 57.04% were female, while in this study woman avarege more than Benli's et al. work (9). As expected, PCS data, which is expected to serve the older age group, served more patients of the female gender due to the higher life expectancy of women in Turkey (10). Data from both studies confirm this information. In a study conducted by Pektaş et al. the mean duration of hospitalization in the palliative care unit was 11.2±13.3 (Lowest: 1, Highest: 94) days (11). The results again overlap with the literature and are in accordance with the rapid circulation required for ideal care. Pektaş et al. 55% of the patients were referred to another department or hospital, 33% were discharged and 11% died, whereas in this study 62.8% of the patients were discharged from the hospital and 21.7% died (11). The reason for this difference may be that it is a socio-culturally different city, and patients may want to spend their last period in the hospital rather than at home. In a study by Al-Jamal et al. the ex-rate was 52.9% and the

discharge rate was 40%. The fact that the study hospital is a foundation hospital, or a private institution changes the statistics. In this study, it was aimed to discharge patients with adequate care in an effective time by targeting 20 days of care as Al-Jamal et al. did. The fact that the patient population did not consist only of cancer patients may have caused the death rate to be lower than the death rate of Al-Jamal et al. (12).

The reason for hospitalization of nearly half of the individuals was nutritional deficiency, while respiratory palliation and wound site care were found to be the other most frequent reasons. In a study by Yürüyen et al. the most common reason for hospitalization was oral intake disorder with 35% (13). In the study by Benli et al. the most common reason for hospitalization was determined as malnutrition. In the study by Al-jamal et al. oral intake disorder was the most common symptom expressed by patients during hospitalization with 35%. Studies conducted in different centers show that nutritional deficiency is a major problem in patients hospitalized with PCS and the physician and his/her team should be knowledgeable about this issue and provide effective care to the patient and his/her relatives. While many diseases and their symptoms are intertwined and specialized and expensive interventions can be performed in the branch branch for the management of each of them, a holistic perspective has built a clinical functioning that saves unnecessary costs with patient and effective expenditure. A systematic review by Mathew et al. emphasized the cost benefit of palliative care. The top 3 primary diagnoses were lung cancer (15.8%), CVD (14.8%) and Alzheimer's disease (14.1%). Regarding both genders, lung cancer is the most common cancer in the world. CVD is a common disease with many risk factors such as heart diseases, diabetes mellitus, hyperlipidemia, smoking and alcohol (14). Management of each disease group by family physicians can reduce the risk and reduce the occupancy of PCS beds due to preventable risk factors.

Gastrointestinal system tumors, cases with brain metastases, Alzheimer's, dementia, Parkinson's, etc. are destructive processes that contribute to the patient's need for PEG opening (15). In the study of Ozturk and his colleagues, the most common tumor in the palliative service is gastrointestinal system tumors. (16) In this study, it was found that 24.3% of the individuals underwent a specific interventional procedure and the most common interventional procedure was PEG opening. In a review by Çakır et al., it is pointed out that the risk of pressure ulcers in patients hospitalized in palliative care is higher than in the normal population and increases with age. (17). In this process, the facilities of the tertiary care were mobilized for the patients by offering VAC treatment, which is one of the special treatments of pressure ulcers. 8 patients (2.5%) underwent VAC treatment. In PCS, from wound biopsy to foot amputation, a wide range of problems were dealt with. While a wound biopsy was performed for a case of suspected malignancy with incomplete diagnostic workup and dermatology was involved, another case of foot amputation demonstrates how close the surgical approach is.

It was determined that the majority of people were hospitalized from the emergency medicine outpatient clinic. In the consultation analysis sent to the PCS, it is seen that applications from the emergency medicine outpatient clinic are more common. The high number of patients admitted and admitted to the emergency medicine outpatient clinic and the fact that the hospitalization criteria for palliative care are not fully known may have led to this situation (18). As a result of the statistical analysis, it was found that the unit requesting consultation was statistically significantly more likely to be the emergency medicine department or intensive care unit than the other units. This may be due to the health policies of the Republic of Turkey. Patients may not have been able to participate in the system in a certain order due to the lack of a specific referral chain, the accessibility of the application to emergency services, and the lack of deterrence of social security institution responsibilities for patients and their relatives. With the widespread use of home health services and the development of palliative care, patients can be supported in a timely manner to receive early services instead of emergency services. With the development of the hospice concept and improvements in the application system, the burden on the emergency medicine outpatient clinic can be removed. As a result of the statistical analysis, it was found that the most common people who died were those with a primary diagnosis of respiratory tract cancers and there was a statistically significant difference between the groups. When evaluated in terms of respiratory tract cancers, the importance of effective fight against preventable risk factors becomes clear once again. In particular, smoking is the primary cause of respiratory tract cancers, but smoking-induced diseases such as COPD may not play a role in both the course of the disease and the development of cancer in the future. The fact that most of the inpatients are in the city center and that there is a significant statistic in terms of mortality may be an idea for future studies in terms of air pollution.

### **Study Limitations**

This study is based on hospital archives due to its single-center, retrospective design. Due to the coronavirus

pandemic that started in December 2019, PCS could not provide service between April 2020 and June 2020. Due to the pandemic, it may have been difficult to reach the patient group due to patients and their relatives who wanted to stay at home. The reduction in the number of beds during the pandemic led to a quantitative decrease in the services provided. During the period when it was a pandemic hospital due to the pandemic, patient selection was based on stricter clinical observations and services may have been provided in response to needs and delayed needs instead of early services. These are the limitations of our study.

### Conclusion

In conclusion, in this study, hospitalizations in the first 3 diseases in patients followed up in the palliative service run by the family medicine clinic were made in a way to serve the purpose of palliative care. The bulk of patients were discovered to have come from the emergency medicine outpatient clinic. It was discovered that people who needed direct radiography died at a higher rate than those who did not need direct radiography and this difference was statistically significant. There appeared to be a statistically significant difference between the groups, with respiratory tract malignancies being the most typical initial diagnosis among the deceased. Emergency medicine or intensive care units were shown to have a statistically significantly higher likelihood of asking consultation than the other units. Due to the growing demand over the past century, palliative care services have begun to naturally evolve and integrate into the system.

**Acknowledgements:** I would like to thank my dear wife, Büşra Göktepe, for her support.

**Ethical Approval:** This study was approved by The Health Sciences University Faculty of Medicine Samsun Research and Training Non-Interventional Research Ethics Committee. (Date: 01.02.2021; Protocol Number:GOKA 2021/3/2). Since this study was retrospective, informed patient consent statement was not collected.

**Author Contributions:** Concept: M.E.G., O.Ö. Literature Review: M.E.G, O.Ö. Design: O.Ö. Data acquisition: M.E.G Analysis and interpretation: M.E.G., O.Ö. Writing manuscript: M.E.G. Critical revision of manuscript: M.E.G, O.Ö

**Conflict of Interest:** The author(s) do not have any potential conflict of interest regarding the research. Authorship and/or publication of this article.

**Financial Disclosure:** This research received no specific grant from any funding agency in the public. Commercial. or not-for-profit sectors

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