ACTA ONCOLOGICA
2020, VOL. 59, NO. 6, 620–627
https://doi.org/10.1080/0284186X.2020.1736335

ORIGINAL ARTICLE

Inequity in palliative care service full utilisation among patients with advanced cancer: a retrospective Cohort study

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ABSTRACT

Background: Advanced cancer patients often die in hospital after receiving needless, aggressive treatment. Although palliative care improves symptom management, barriers to accessing palliative care services affect its utilisation, and such disparities challenge the equitable provision of palliative care. This study aimed to identify which factors are associated with inequitable palliative care service utilisation among advanced cancer patients by applying the Andersen Behavioural Model of Health Services Use.

Material and methods: This was a retrospective cohort study using administrative healthcare data. A total of 13,656 patients residing in the Lazio region of Italy, who died of an advanced cancer-related cause—either in hospital or in a specialised palliative care facility—during the period of 2012–2016 were included in the study. Potential predictors of specialised palliative service utilisation were explored by grouping the following factors: predisposing factors (i.e., individuals' characteristics), enabling factors (i.e., systemic/structural factors) and need factors (i.e., type/severity of illness).

Results: The logistic hierarchical regression showed that older patients (odds ratio [OR] = 1.45; <0.0001) of Caucasian ethnicity (OR = 4.17; 0.02), with a solid tumour (OR = 1.87; <0.0001) and with a longer survival time (OR = 2.09; <0.0001) were more likely to be enrolled in a palliative care service. Patients who lived farther from a specialised palliative care facility (OR = 0.13; <0.0001) and in an urban area (OR = 0.58; <0.0001) were less likely to be enrolled.

Conclusion: This study found that socio-demographic (age, ethnicity), clinical (type of tumour, survival time) and organisational (area of residence, distance from service) factors affect the utilisation of specialised palliative care services. The fact that service utilisation is not only a function of patients' needs but also of other aspects demonstrates the presence of inequity in access to palliative care among advanced cancer patients.

ARTICLE HISTORY
Received 21 November 2019
Accepted 25 February 2020

Introduction

Equity in a healthcare system is achieved when people have the same opportunity to access the system based on their needs rather than on their social characteristics [1]. The ability of patients to access to a healthcare system can be different based on the clinic conditions they face. Specifically, for cancer patients, access to a healthcare system can be determined by multiple factors, such as socioeconomic status, ethnic disparities or diagnosis type [2], and these can result in a late referral to palliative care for advanced cancer patients.

Palliative care is recognised as a human right that should be guaranteed to all who need it. Palliative care service utilisation improves patients quality of life and patient and family satisfaction [3], and it reduces the prevalence of aggressive care with painful symptoms that cause needless suffering and the number of hospital deaths [4]. Although an estimated 40 million people are in need of palliative care, ensuring equitable access to it is a challenge faced by many countries [5].

In attempts to identify factors that might inform whether the access to such services is equitable, Andersen and colleagues developed a framework according to which individual and contextual characteristics are associated with healthcare service utilisation [6]. According to the model, characteristics are grouped into the following three categories: (1) predisposing factors (i.e., characteristics of the individual), (2) enabling factors (i.e., systemic or structural factors) and (3) need factors (i.e., type and severity of illness). Andersen's model is widely used to analyse access to different health services (such as outpatient care, primary care and mental health services) [7].

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In palliative care, this model was successfully used to describe inequity related to adult patients' age [8], to paediatric patients [9–11], to family caregivers of palliative care patients [12,13] and to cancer survivors [14]. None of these studies specifically focussed on the health determinants in advanced cancer patients.

Among predisposing factors, income, education [15] and ethnicity [16] seem to be the main factors that contribute to inequitable access to palliative care. Enabling factors have also been analysed, focussing on patients' place of residence; indeed, several studies [17,18] showed that living in rural areas could be a determinant of access to palliative care. Regarding need factors, a cancer diagnosis is one of the main determinants of access to palliative care. Specifically, patients with a solid tumour tend to have more access to palliative care services compared to those with haematological malignancies [19].

Studies about the factors determining the equitable access to palliative care usually focus on one factor at a time, and there is considerable methodological variation among them [16–19]. Moreover, the use of a well-validated theoretical framework to inform the various factors associated with patients' equitable access to palliative care is recommended [20] to gain a more comprehensive view by building on existing knowledge and facilitating hypothesis generation [21].

Therefore, the aim of this study was to describe which factors, based on the Andersen Behavioural Model of Health Services Use, determine an inequitable access to palliative care of advanced cancer patients.

Methods

Study design, data source and setting

This is a retrospective cohort study that used two sources of data: (1) hospital data retrieved from the Italian Hospital Discharge Register and (2) palliative care data retrieved as entered by each specialised palliative care service in its electronic database. Specifically, in Italy specialised palliative care service regards the provision of palliative care by both residential care (hospice) and home settings [22]. The study was conducted in the Lazio region, which is the second most populous region of Italy. In this region, cancer was shown to be the second cause of death (about 17,000) and trends in cancer deaths have been stable over the last three years [23]. This research was written according to Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) recommendations [24].

The Italian Hospital Discharge Register is a country-wide administrative health database made available by the Italian Ministry of Health for research purposes. The register contains standardised electronic data including sociodemographic and clinical information, procedures, and admission and discharge information. The register is complete for most patients because physicians are required to provide data on all patients discharged from a hospital. For the purposes of this study, only data from the Lazio region of Italy were used.

Data collection from palliative care centres differs from that compiled in the Italian Hospital Discharge Register because, in the Lazio region, while the register is a centrally standardised database, palliative care data are not standardised nor centralised; as such, each specialised palliative centre collates its information differently. In addition, in the Lazio region, primary palliative care provision (i.e., care that is delivered outside the specialist palliative care service and that should be provided by general practitioners, and by hospital and nursing home staff) [25] is still rare [22]. Consequently, patients receive palliative care services mainly through specialised palliative care programmes, either at home or in a hospice, only after their condition has deteriorated.

During the study period, the number of specialised palliative care services increased in the Lazio territory to a total of 24 in 2016 [22]. Data from the specialised palliative care centres were collected by two members of the research team (MDN, AM) from centres that collected all the information required for the study; as such, these palliative care data were derived solely from 3 of the 24 specialised palliative care services of the Lazio region because these were the only services to include all of the data needed for analysis.

Study sample

The study sample included individuals who met the following criteria: (1) were residents of the Lazio region, (2) died of a cancer-related cause either in hospital or in a specialised palliative care centre in the Lazio region between January 2012 and December 2016, (3) were $\geq$ 18 years old and (4) had an electronic record containing all the data required for the study.

The total eligible sample included 17,522 patients. Among those, 3,866 individuals were removed because of missing information about gender ($n = 50$), age ($n = 51$), education ($n = 2,699$), citizenship ($n = 182$), ethnicity ($n = 2634$), area of residence ($n = 53$), distance to closest specialised palliative care service ($n = 53$) or survival time ($n = 477$). The final sample included 13,656 individuals. To minimise selection bias, our sample included patients who died of a cancer-related cause. We chose this sample mainly because they represent the most common palliative care target population.

Each patient record was assigned an anonymous identifier by the research team. The study was approved by the Ethics Committee of Campus Bio-Medico University (Protocol 07/17 OSS ComEt CBM).

Measurement

The Andersen Behavioural Model of Health Service Use [26] was used to select independent variables as it is effective in predicting health system inequity by analysing service utilisation.

Since numerous studies [27,28] showed that the Andersen model effectively predicts health service utilisation by using only individual characteristics, we focussed our attention on variables relating to the individual characteristics of the population classified as predisposing enabling and need factors [26].

Considering that survival time in a specialised palliative care setting is a good indicator of a timely referral to the service [29] and it is often associated with less aggressive treatments (i.e., use of chemotherapy, ED visit, intensive care admission) [30], the comparison between Andersen's factors by patients' survival time was also analysed.

Independent variables (predisposing characteristics, enabling factors and clinical needs)

The independent variables were grouped by the individual characteristics outlined by the Andersen model: (1) sociodemographic predisposing characteristics, (2) enabling resources that facilitate or impede the use of services and (3) clinical needs that lay people or healthcare providers recognise as requiring medical treatment.

The predisposing characteristics considered in this study included gender [31], age [31,32], education [32], citizenship and ethnicity [33,34]. Gender was dichotomised as male versus female. Age was categorised into four groups (i.e., those $\leq$ 66, 67–75, 76–82 and $\geq$ 83 years old), and the reference group in the statistical analysis was the group of individuals aged $\leq$ 66 years. Level of education was also divided into four categories (i.e., primary, secondary, high school and university level), and university level was used as the reference group. Ethnicity and citizenship were grouped into two categories each: Caucasian versus other, and Italian versus foreign, respectively.

The enabling factors were residence area [32,34] and distance from the closest specialist palliative care service [32,34]. Assuming that service availability is dependent on patients' geographical area of residence, this variable was dichotomised as urban versus rural areas, as defined by the Italian Ministry of Agriculture Food and Forestry [35]. The distance between patients' homes and closest palliative care centres was divided into two categories (i.e., <20 km and ≥20 km).

The clinical need measures that are potentially associated with the utilisation of specialised palliative services include diagnosis [31,32,34] and survival time. The latter was calculated from patients' referral to the service (either hospital or specialised palliative care) until their death [36]. We considered the survival time as a proxy of need by assuming that a shorter survival time was related to a more serious patients' condition.

Diagnoses were categorised into two groups (i.e., solid tumours versus haematological cancers) and referral-to-death time was dichotomised as survival time ≥15 (less serious condition) days versus <15 days (more serious condition).

Dependent variable

The dependent variable was healthcare service full utilisation, which occurred either in a specialised palliative care service or in hospital. Because we were interested in patients who accessed and concluded their care within the services (specialised palliative care or hospital) the utilisation was measured by whether the patients had accessed and died within them, defined as 'full utilisation'. In Italy, specialised palliative care services offer integrated services (consultation, home and residential care), so death within these services could have happened either at home or in hospice.

Statistical analysis

Means and frequency distributions were used to describe the characteristics of the sample. Differences between patients who died in palliative care facilities compared to those who died in hospital were tested using the chi-square test and Student's *t*-test when referring to categorical and continuous variables, respectively.

To determine predictors of full utilisation in hospital versus specialised palliative care services, predisposing, enabling and need factors were entered as predictors in a three-stage hierarchical logistic regression. Following the Andersen model, predisposing, enabling and need variables were entered in blocks one, two and three of the regressions. The logistic regression can be expressed as $\log(P1/P0) = \beta0 + \beta1\ X1 + \beta2\ X2 + \beta3\ X3 + \epsilon$, where P1 is the probability of death in specialised palliative care services, P0 is the probability of death in hospital, X1is predisposing factors, X2 is enabling factors, X3 is need factors, ß are the model coefficients and ϵ is the error term. Odds ratios (ORs) with 95% confidence intervals (CI) were generated in the multivariate logistic regression analyses. The analyses were completed using IBM SPSS software version 21.0.

Results

Participants

Data were collected from 13,656 patients with advanced cancer who met the inclusion criteria (Table 1). A higher percentage of patients with haematological cancers were found to have died in hospital than of patients with solid tumour cancers ($p < .001$). The majority of the sample was female, both in hospital (57.5%) and in specialised palliative care services (54.5%). Patients who died in specialised palliative care centres were significantly older and less educated than were those who died in hospital ($p < .001$). Almost all patients in the sample were Italian citizens of Caucasian ethnicity, and two-thirds lived in urban areas. Almost all patients who died in specialised palliative care facilities (95.3%) lived closer than 20 km from the facility ($p < .001$). The average survival time in specialised palliative care services was more than double the survival time of those who remained in hospital ($p < .001$).

Factors related to the full utilisation of specialised palliative care services

The results of the three-stage hierarchical logistic regression analysis (Table 2) indicated that some of the predisposing, enabling and need factors are associated with specialised palliative care service full utilisation.

Table 1. Participants Characteristics ($n = 13656$).

	Specialised Palliative Care Full Utilisation ($N = 1231$)		Hospital Utilisation ($N = 12425$)		
	N	%	N	%	*p*-value
Cancer type					<.001
Respiratory and digestive systems	673	54.7	6077	48.9	
Lymphatic and haematopoietic tissue	120	9.7	2120	17.1	
Genitourinary organs	196	15.9	958	7.7	
Brain	68	5.5	724	5.8	
Bone, connective tissue, skin, and breast	94	7.6	424	3.4	
Unknown origin	54	4.4	1786	14.4	
Others	26	2.1	336	2.7	
Gender					.42
Male	560	45.5	5279	42.5	
Female	671	54.5	7146	57.5	
Age					<.001
Mean age (SD)	75.2 (12.31)		71.2 (13.74)		
<67	279	22.7	3941	31.7	
67–75	242	19.7	3095	24.9	
76–82	325	26.4	2782	22.4	
≥83	385	31.3	2607	21.0	
Education					<.001
Elementary/None	625	50.8	4697	37.8	
Secondary	292	23.7	3859	31.1	
High school	243	19.7	3050	24.5	
University	71	5.8	819	6.6	
Citizenship					.21
Italian	1209	98.2	12083	97.2	
Albanian	0	0.0	22	0.2	
Romanian	8	0.6	85	0.7	
North African	3	0.2	43	0.3	
Others	11	0.9	192	1.5	
Ethnicity					.5
Caucasian	1229	99.8	12312	98.8	
African	2	0.2	71	0.6	
Asiatic	0	0.0	42	0.3	
Area of residence					.24
Urban	827	67.2	8142	65.5	
Rural	404	32.8	4283	34.5	
Distance to closest specialised palliative service					<.001
<20km	1173	95.3	9922	79.9	
≥20km	58	4.7	2503	20.1	
Survival Time					<.001
Mean survival time (SD)	38.9 (60.36)		16.7 (18.03)		
≤7	346	28.1	4332	34.9	
8–14 Days	195	15.8	2866	23.1	
≥15 Days	690	56.1	5227	42.1	

Legend: SD, standard deviation.

Block 1 demonstrated the prediction of place of death according to predisposing factors. In this block, age, ethnicity and educational level were significant predictors. Older individuals were significantly more likely than were those less than 66 years old to die in specialised palliative care centres. Those aged 83 years and older were the most likely to die in palliative care centres (OR: 1.79; 95% CI: 1.51–2.12). Caucasians were five times more likely to die in specialised palliative care centres than were non-Caucasians (OR: 4.91; 95% CI: 1.42–16.92). Patients who had the lowest education level were 30% more likely to use specialised palliative care services than were those with higher levels of education (OR: 1.31; 95% CI: 1.01–1.7).

In block 2, enabling factors were added to the model, and age, ethnicity and educational level remained significant, while among the enabling factors, area of residence (OR: 0.58; 95% CI: 0.51–0.66) and distance from the closest specialised palliative care centre (OR: 0.13; 95% CI: 0.10–0.18) were both significant predictors. Those living in an urban area tended to use fewer specialised palliative care services than did those who lived in a rural area. Also, individuals who lived further from a specialised palliative care centre more commonly died in hospital.

Finally, in block 3, with the exception of education level, the previously identified significant predicators remained significant. The need factors entered in block 3 were both significant. Patients with solid tumours were more likely to die in specialised palliative care facilities than were those with haematological malignancies (OR: 1.87; 95% CI: 1.66–2.11). Moreover, a longer survival time before dying—considered a proxy of need—more than doubled the likelihood of the full utilisation of a specialised palliative care service (OR: 2.09; 95% CI: 1.72–2.55).

Table 3 demonstrates patients' survival time within specialised palliative care services based on predisposing, enabling and need factors. There were significant differences in

Table 2. Factors related to specialised palliative service full utilisation versus hospital utilisation.

	Predisposing			Enabling			Need		
Variables (*n* = 13656)	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
	Block 1			Block 2			Block 3		
Gender									
Male Vs Female	0.92	(0.81–1.03)	.16	0.91	(0.81–1.03)	.13	0.92	(0.81–1.03)	.15
Age Class									
67–75 Vs ≤66	1.04	(0.87–1.25)	.64	1.04	(0.87–1.25)	.65	1.04	(0.87–1.25)	.67
76–82 Vs ≤66	1.48	(1.24–1.76)	<.0001	1.46	(1.22–1.74)	<.0001	1.45	(1.21–1.73)	<.0001
≥83 Vs ≤66	1.79	(1.51–2.12)	<.0001	1.79	(1.51–2.13)	<.0001	1.81	(1.52–2.16)	<.0001
Ethnicity									
Caucasian Vs others	4.91	(1.42–16.92)	.01	4.26	(1.23–14.77)	.02	4.17	(1.20–14.50)	.02
Education									
Elementary Vs University	1.31	(1.01–1.70)	.04	1.31	(1.01–1.70)	.04	1.29	(0.99–1.68)	.06
Secondary Vs University	0.85	(0.65–1.12)	.24	0.85	(0.65–1.12)	.24	0.84	(0.64–1.11)	.22
High Vs University	0.93	(0.70–1.22)	.56	0.92	(0.70–1.22)	.56	0.92	(0.70–1.22)	.57
Citizenship									
Italian Vs Foreign	0.83	(0.51–1.34)	.45	0.86	(0.53–1.39)	.54	0.86	(0.53–1.40)	.55
Area of Residence									
Urban Vs Rural	–			0.58	(0.51–0.66)	<.0001	0.58	(0.50–0.66)	<.0001
Distance to Closest Specialised Palliative Service									
≥20 Km Vs <20 Km	–			0.13	(0.10–0.18)	<.0001	0.13	(0.10–0.17)	<.0001
Type of Cancer									
Solid Tumour Vs Haematological Cancer	–			–			1.87	(1.66–2.11)	<.0001
Survival Time									
≥15 Days Vs <15 Days	–			–			2.09	(1.72–2.55)	<.0001

OR: Odds ratio; CI: Confidence Interval.

Table 3. Survival time in specialised palliative services as a function of predisposing, enabling and need factors (*N* = 1231).

	Survival time					
	Mean (SD)[a]	*p* Value[a]	≤ 7 days[b] *n* (%)	8–14 days[b] *n* (%)	≥ 15 days[b] *n* (%)	*p* Value[b]
Gender		<.005				.05
Male	34.3 (48.3)		208 (31.0)	101 (15.1)	362 (53.9)	
Female	44.4 (71.8)		138 (24.6)	94 (16.9)	328 (58.6)	
Age		<.006				<.02
≤66	29.0 (62.6)		89 (31.9)	52 (18.6)	138 (49.5)	
67–75	37.1 (58.7)		82 (33.9)	31 (12.8)	129 (53.3)	
76–82	41.1 (60.2)		79 (24.3)	49 (15.1)	197 (6.6)	
≥83	45.3 (59.1)		96 (24.9)	63 (16.4)	226 (58.7)	
Education		.06				.7
Elementary	41.0 (66.7)		173 (27.7)	91 (14.6)	361 (57.8)	
Secondary	37.1 (57.6)		83 (28.4)	55 (18.8)	154 (52.7)	
High	35.3 (46.6)		70 (28.8)	36 (14.8)	137 (56.4)	
University	39.8 (54.4)		20 (28.2)	13 (18.3)	38 (53.5)	
Citizenship		.15				.66
Italian	39.2 (60.8)		340 (28.1)	190 (15.7)	679 (56.2)	
Foreign	20.6 (25.8)		6 (27.3)	5 (22.7)	11 (5.0)	
Area of residence		.84				.66
Urban	39.2 (56.5)		227 (27.4)	129 (15.6)	471 (57.0)	
Rural	38.4 (67.6)		119 (29.5)	66 (16.3)	219 (54.2)	
Distance to closest specialised palliative service		.52				.08
>20 Km	43.9 (58.2)		9 (15.5)	12 (20.7)	37 (63.8)	
<20 Km	38.7 (60.5)		337 (28.7)	183 (15.6)	653 (55.7)	
Neoplastic disease		.83				.61
Solid	39.0 (61.5)		314 (28.3)	179 (16.1)	618 (55.6)	
Haematological	37.8 (48.9)		32 (26.7)	16 (13.3)	72 (6.0)	

SD: standard deviation.

[a] Comparison of Survival time using *t*-test or ANOVA.

[b] Comparison of Survival time categories (≤7 days, 8–14 days, ≥15 day) using chi-square.

the mean survival time between women and men and survival time among age groups. Specifically, women spent more time in specialised palliative care services than did men, and patients older than 76 spent more time in palliative care services than did those younger than 76. However, no other significant differences were found.

Discussion

The aim of this study was to describe which factors, based on the Andersen Behavioural Model of Health Services Use, determined an inequitable access to palliative care of advanced cancer patients. Factors from all individual characteristics of the Andersen Behavioural Model of Health Service Use (predisposing, enabling and need factors) were found to be significantly associated with a higher probability of specialised palliative service full utilisation. This indicated that sociodemographic and healthcare organisational factors drove access to service, determining inequitable utilisation.

The predisposing factors associated with a higher likelihood of full utilisation to specialised palliative care services included older age and Caucasian ethnicity. Older patients had an increased chance for the full utilisation of specialised palliative care services, in contrast with previous findings [17,37], which found that younger patients require more palliative support [38]. This might reflect the reluctance of physicians to abandon curative treatment with younger patients [39,40] and the low awareness of patients about their prognosis [41], which may hinder their decision to enrol in palliative care programmes [42]. Caucasian patients were more likely to use specialised palliative care services than were those of other ethnicities. Unfortunately, ethnic disparities represent a well-known and worrisome phenomenon in palliative care [43–45]. This may be related to the Italian admission criteria of specialised palliative services, which require the enrolment by a general or specialised physician who should certify an estimated life survival time of six months or less. The referral is more difficult for non-native patients who may face language and cultural barriers that hinder an honest discussion with health care providers resulting in misinformation on palliative care service [46]. Consequently, this palliative care service underutilisation is accompanied by greater use of hospital service by them.

Enabling factors associated with the full utilisation of specialised palliative care services included living in rural areas and living closer to palliative care centres. The higher availability of hospital beds, which mainly occurs in urban areas, was related to a higher probability of accessing and dying in hospital [17,45]. This is likely because the hospital emergency department is still considered the easiest way to access care in an acute clinical situation and in cases where families fear being unable to cope with end-of-life patients at home [37]. More effort should be spent on designing proactive home palliative care programmes [44], and institutions should provide formal caregivers when needed. Moreover, proximity to a specialised palliative care centre increases patients' chances of accessing it. This indicates a need to plan specialised palliative care service implementation based on the density and characteristics of the population, taking into consideration the barriers facing the primary care offered by general practitioners (GPs) and community nurses [47,48].

The need factors studied were both found to be significant. Suffering from a haematological disease was associated with lower specialised palliative care service utilisation, in line with the findings of other studies [19,49]. This is not surprising because such populations generally require more hospital visits, and they are more likely to receive aggressive treatment and to die in an acute clinical situation [4]. This raises important concerns about the quality of life of patients with haematological cancers and the need to enhance their access to specialised palliative care services [50].

In addition to the results gained using the Andersen model, other findings can also be drawn from this analysis. Survival time represents a proxy of illness severity and is an important indicator of the timing of referral to palliative care. Although patients' survival time in a specialised palliative care facility was found to be longer than that in hospital, specialised palliative service referral often occurred very late in the disease trajectory. The minimum period during which palliative care should be provided can be difficult to define [51]; however, if we consider the average survival time from referral to death to be 38.9 days, as shown in our findings, it is reasonable to consider this period to be insufficient to provide optimal service [52].

Age and gender were significantly different in terms of the full utilisation of specialised palliative care services. This suggests that women were referred to specialised palliative care services earlier during their illness trajectory than were men. Considering the old age of our sample, and the longer life expectancy of women, it is reasonable to think that men in heterosexual relationships have a higher possibility of being cared for by their wives or partners until symptoms worsen. Conversely, women are more likely to be widowed or living alone, with a higher need for institutionalisation [53]. Younger patients were served late by specialised palliative care services, and this may correlate with their higher probability of experiencing aggressive hospital treatment, which can delay referral to specialised palliative care services [54].

Limitations

Some limitations should be recognised in the current study. This study used administrative data and a retrospective design. Although administrative data are useful to evaluate health service use, and allow comparison over time, they do not capture information regarding the preferences of patients or caregivers. In addition, a retrospective study design is subject to potential error, data underestimation and incompleteness.

Patients who may benefit from palliative care fall under a wide spectrum of populations (e.g., patients with neurologic or respiratory disease) [55]. Our findings analyse only specialised palliative care service full utilisation by advanced cancer patients, and the situation may therefore be very different among other populations, as cancer has a more predictable disease trajectory than do other non-malignant diseases [56].

Conclusion and further research

Our study indicated that specialised palliative care service full utilisation is likely not only a function of patients' needs. It is also impacted by socio-demographic and organisational aspects that determine inequitable access to such services. The highest inequity occurs among younger people, who are even less likely to utilise a specialised palliative care service if they are members of an ethnic minority population, suffer from a haematological disease, show more healthcare needs or live in an urban area far from a specialised palliative care centre.

To achieve health equity in patients' access to specialised palliative care services, the integration of palliative services with oncology care is highly recommended, and efforts are required to enhance the support and education given to patients and their families. Furthermore, it is important to gain a more extensive knowledge of which patients require palliative care to enhance their access to palliative services.

Additional research is warranted to examine differences in the utilisation of specialised palliative care services with a focus on the unique needs of underserved populations. Furthermore, it is essential to understand the mechanisms by which disparities occur and to overcome them using innovative models.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the ENPAPI group under Grant number 3383/2016.

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