Archives of Gerontology and Geriatrics 84 (2019) 103892

Contents lists available at ScienceDirect

Archives of Gerontology and Geriatrics

journal homepage: www.elsevier.com/locate/archger

A comparison of preferences of elderly patients for end-of-life period and their relatives' perceptions in Thailand

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ARTICLE INFO

Keywords:
Advance care planning
End-of-life care
Good death
Palliative care

ABSTRACT

Background: Goal of palliative care is to experience a good death. Understanding the perceptions of elderly patients and their relatives about this issue should provide healthcare professionals with practical guidance in order to achieve this goal.

Objectives: To determine and compare the perceptions of elderly patients and relatives regarding wishes during their end-of-life(EOL) period.

Methods: This was a cross-sectional study conducted at Siriraj and Srinagarind Hospital in Thailand from September 2017 to February 2018. A questionnaire was given to elderly patients and the relatives of them. The patients were asked to respond to the questions as though they were terminally-ill patients, and relatives were asked to imagine how elderly people would respond to the questions.

Results: We recruited 608 elderly patients and 607 relatives. The most important issue in both groups was*"receiving the full truth about their illnesses"*. The perceptions of the patients and relatives differed significantly in 8/13 areas covered in the questionnaire. Independent factors associated with preference for home death were elderly from Khon Kaen (adjusted odds ratio (AOR) 2.6;95%CI 1.7,4.1), previous self-employed/general work compared to individuals who did not work (AOR 0.5;95%CI 0.3,0.9), low educational level (AOR 2.3;95%CI 1.3,4.0), low income (AOR 1.7;95%CI 1.1,2.5), greater family size (AOR 1.7;95%CI 1.1,2.6) and dissatisfaction in life (AOR 2.5;95%CI 1.1,5.4).

Conclusion: Receiving the full truth about their illnesses was the most important issue for participants in both groups. The major differences between the two groups had to do with autonomy. Factors influencing place of death were location of patients, previous occupation, educational level, family income, family size and dissatisfaction in life.

1. Introduction

Human life expectancy has been continuingly increasing as a result of advances in medical technology, and every country in the world is experiencing growth in the number and proportion of older adults in its population. Healthcare has, consequently, become more sophisticated, as many advanced treatments could prolong the lives of older adults with terminal illnesses have been developed. However, these treatments often do not improve quality of life (Kelley, 2013; Morrison, 2013). This dilemma makes the decisions that healthcare providers, elderly patients, and the relatives of elderly patients have to make more complicated (Kelley, 2013; Morrison, 2013). Terminal illnesses in older adults usually result from degenerative changes and cardio-metabolic abnormalities, such as chronic renal failure, hypertension, and cancer, which can lead older adults to be more dependent or unable to make decisions during their end-of-life period (Detering, Hancock, Reade, & Silvester, 2010; Morrison, 2013). A former study conducted in Canada, for example, found that dying patients and their families had significant

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https://doi.org/10.1016/j.archger.2019.05.017
Received 21 December 2018; Received in revised form 19 May 2019; Accepted 27 May 2019
Available online 28 May 2019

needs that were not being met (Gallagher & Krawczyk, 2013).

However, these needs vary based on the cultural backgrounds of the patients and other situational factors. For example, one study found that Japanese participants considered medical treatment, maintaining a good relationship with physicians, and being to be respected as an individual to be the most important factors that determine a "good death," whereas Thai participants who lived in the central part of Thailand felt that environmental comfort, religious and spiritual comfort were the most important (Ando, Somchit, Miyashita, & Jamjan, 2016). A study in northern Thailand emphasized the relationship between ethics and place. The good death in this context was having home death while dying in the hospital was immoral (Stonington, 2012). The studies in other regions of Thailand are limited. Another study found that about a third of end-stage elderly patients in France wanted to receive thorough information about their care and 77% of them wanted to be informed if they were in critical condition. The primary surrogates for making decisions for most patients in that study were family members (73%) and family physicians (28%) (Paillaud et al., 2007). A study in northern Thailand found that most (57.2%) of patients designated their physician as their surrogate decision maker in end-of-life care, followed by their relatives (28.3%), and both their relatives and physician (14.5%). However, in cases of cardiopulmonary resuscitation, the greatest percentage of patients (44.1%) designated both a family member and a physician as surrogates, followed by a family member alone (33.6%), and their physician alone (22.4%) (Sittisombut & Inthong, 2009).

End-of-life decision making is also influenced by religion and spirituality, especially in non-Caucasian populations. For example, one study found that patients without religious affiliation were more likely to decline treatment for terminal illness. Another study found that elderly Buddhist Chinese patients in Singapore were 54% more likely to prefer to have their physician as their surrogate decision-maker than non-Buddhist patients. A Dutch survey reported that cancer and advanced demented patients who were Christian were more likely to refuse resuscitation than those who were not (Chakraborty et al., 2017). One study in the US reported that most terminally ill patients' preferences were constant over time with regard to having a loved one act as their surrogate, but they were less likely to rely on their physicians the longer they lived with their illnesses (Sulmasy et al., 2007). Therefore, the choice of a surrogate decision-maker should be assessed personally since it depends on cultural background, religious teachings, beliefs, and other situational factors (Chakraborty et al., 2017; Doolen & York, 2007; Rainsford et al., 2018).

Understanding the perceptions of elderly patients and their relatives should help them achieve a "good death," as what constitutes a good death is subjective and may change over time (Doolen & York, 2007; Raisio, Vartiainen, & Jekunen, 2015). There have been few studies examining the preferences of elderly patients for their end-of-life care and the perceptions of their relatives with regard to these preferences, especially in primarily Buddhist populations. In addition, the patient sample of multicenter settings in Thailand is supposed to be more representative and convincing the result. Thus, the objectives of this study were to examine and compare the preferences and perceptions of elderly patients and their relatives regarding what they feel constitutes a "good death" from 2 medical institutions in different regions of Thailand. Additionally, it is an attempt to demonstrate the factors associated with elderly patients' preferences regarding place of death.

2. Methods

2.1. Participants and settings

Elderly patients and relatives of patients were recruited from two medical schools in Thailand (Siriraj Hospital at Mahidol University in Bangkok and Srinagarind Hospital at Khon Kaen University in Khon Kaen) which are tertiary care hospitals from September 2017 to February 2018. Bangkok is located in the central region of Thailand, and Khon Kaen is located in the northeast. The inclusion criteria for the patients were that they were 60 years old or over, had Thai citizenship, and attended the outpatient clinic at the internal medicine department of either medical school. Exclusion criteria were dementia or depression severe enough to interfere with their thinking process or communication, as assessed by a team of researchers which contained specialists in internal medicine, geriatricians, and trained nurses. Assessment of potential participants used clinical judgment and standard screening tools. The inclusion criterion for the relative was the person who experienced in caring for an elderly patient such as patient's living conditions, family dynamics, work situation, and cultural background. The relative had to visit the outpatient clinic with elderly patients in the same period. The exclusion criterion was the unwillingness to participate in this study.

2.2. Materials

A questionnaire was developed based on a literature review and regarding what constitutes a "good death." The details of the questionnaire's development have been described elsewhere (Srinonprasert et al., 2014). A number of discussions were held among investigators for selecting and modifying questions appropriate to local culture. Three of the investigators are geriatricians who have had experience in taking care of elderly patients more than 10 years and one has also been teaching in palliative care in the faculty. It enquired about demographic data, health status, previous experience in end-of-life care, and opinions regarding various aspects of the end-of-life period including physical and psychological needs, autonomy issues, and closure of life affairs. The questionnaire consisted of 13 items with a five-category Likert scale from 1 to 5. The 1 to 5 scales were defined as 5 = strongly agree with the statement, 4 = agree with the statement, 3 = neutral agree with the statement, 2 = disagree with the statement, and 1 = strongly disagree with the statement. The patients were asked to imagine that if they were in their last three months of life, how much they would agree with each of the 13 items. They were then asked to rank the items on the questionnaire by importance. The relatives of elderly patients were given the same questionnaire and asked to answer based on how they expected an elderly patient would think about each statement.

2.3. Procedure

The potential participants were asked to complete the questionnaire by a team of researchers. The patients who were willing to participate in this study would then response to the survey.

Anonymity was assured, and no incentives were offered. The completed questionnaires were then sent back to the researchers at the outpatient clinic in the same period of participation in this study.

Approval from Siriraj hospital and the Khon Kaen University Institutional Review Board was obtained. The Khon Kaen University Ethics Committee determined that the project could be exempted. The requirement for informed consent was, thus, waived.

2.4. Statistical analysis

Demographic data were analyzed using descriptive statistics and presented as percentage, mean, and standard deviation. If the distribution of these data did not conform to normal distribution, medians and inter-quartile ranges were used instead. Comparison of perceptions between the elderly patients and relatives of elderly patients regarding ethical issues during the end-of-life period were analyzed using univariate analysis. Responses that indicated agreement with the statements were collapsed into two categories (responses of strongly agree (5 points) and agree (4 points) with the statement), while the rest (response of neutral (3 points), disagree (2 points), and strongly disagree (1 point) with the statement) were classified as disagreeing. A p-

Table 1
Baseline data of study populations.

Characteristics	Older adults N = 608		Relatives N = 607	
Age (years), median (IQR1,3)	71	(66,77)	50	(42,59)
Gender, n(%)				
- Female	328	(54)	446	(74)
- Male	279	(46)	157	(26)
Religion, n(%)				
- Buddhist	583	(98)	580	(97.5)
- Christian	8	(1.3)	9	(1.5)
- Muslim	3	(0.5)	5	(0.8)
- Other	1	(0.2)	1	(0.2)
Occupation, n(%)	Previous occupation		Current occupation	
- None	145	(24.9)	99	(17)
- Government officer/ state enterprise	269	(46.1)	241	(41.5)
- Agriculture	75	(12.9)	44	(7.6)
- Self-employed, general work	94	(16.1)	197	(33.9)
Marital status (%)				
- Single	81	(13.5)	202	(33.8)
- Married	493	(81.2)	350	(58.5)
- Divorced/separated	28	(4.7)	46	(7.7)
Years of formal educational				
- ≤ 6 year	246	(40.6)	76	(12.8)
- > 6 year	360	(59.4)	520	(87.2)
Family income per month (baht), n(%)				
- ≤ 30,000	361	(61.2)	334	(56.5)
- > 30000	229	(38.8)	257	(43.5)
Family size (person), n(%)				
- < 3	217	(35.9)	163	(27.2)
- ≥ 3	387	(64.1)	436	(72.8)
Underlying diseases, n(%)				
- DM	166	(72.7)		
- HT	370	(60.9)		
- DLD	214	(35.2)		
- IHD	45	(7.4)		
- CVA	39	(6.4)		
- CRF	41	(6.7)		
- MSK	129	(21.2)		
- COPD/asthma	33	(5.4)		
- Malignancy	22	(3.6)		
History of hospital admission, n(%)	420	(69.2)	277	(46.5)
In good health, n(%)	199	(32.9)	485	(40.2)
Life satisfaction, n(%)	545	(89.8)	551	(91.3)
Prior experience seeing someone die, n(%)	468	(77.1)	418	(69.3)
Prior experience caring for someone at the end-of-life, n(%)	358	(59)	310	(51.4)
Self-rated bADLs, n(%)				
- Eating	591	(97.4)		
- Dressing	582	(95.9)		
- Bathing	581	(95.7)		
- Double continence	588	(96.9)		
- Walking	580	(95.6)		

Note: IQR; inter-quartile range, DM; diabetes mellitus, HT; hypertension, IHD; ischemic heart disease, CVA; cerebrovascular accident, CRF; chronic renal failure, COPD; chronic obstructive pulmonary disease, MSK; musculoskeletal disease, bADL; basic activities of daily living, number and percentages of responses in each issue presented statistics of available data.

value < 0.05 was considered to indicate statistically significant differences. Risk ratio (RR) was used to demonstrate the magnitude of associations. Univariate analysis and stepwise backward multiple regression were used to analyze the factors associated with place of death in view of elderly patients' wishes. A p-value < 0.05 was considered to indicate statistically significant differences. Unadjusted, adjusted odds ratios (OR), and their 95% confidence intervals (CI) were reported to denote the strength of association. All data analysis was carried out using STATA version10.0 (StataCorp, College Station, Texas).

3. Results

There were 608 elderly patients (352 from Siriraj Hospital [57.9%] and 256 from Srinagarind Hospital [42.1%]) and 607 relatives of elderly patients (353 from Siriraj Hospital [58.2%] and 254 from Srinagarind Hospital [41.8%]) enrolled in this study. The baseline characteristics of all participants are shown in Table 1. The median ages of the patients and relatives were 71 and 50 years, respectively. The majority of participants were women (54% in the elderly patient group and 74% in the relative group). Buddhism was the most common religion in both groups. The patients mainly lived with their family who helped support them and were independent with regard to self-care. About 70% of the patients had experience of non-elective hospital admission, and only one-third rated themselves as being in a good health. However, most stated that they were satisfied with their lives (89.8%). The majority of patients had prior experience watching or caring for someone at the end of life (77.1% and 59%, respectively). Only 40.2% of the relatives of the elderly patients rated themselves being in good health, and about 70% of them had prior experience seeing someone die, but only about half of them (51.4%) had ever cared for a dying person.

3.1. The end-of-life preferences of elderly patients and the perceptions of relatives regarding those preferences

The preferences of elderly patients regarding palliative care during their end-of-life period and the perceptions of relatives about those preferences were compared using univariate analysis and are shown in Table 2. There were eight out of 13 areas in which the differences between the two groups were statistically significant. Higher proportions of patients and relatives stressed the importance of *"receiving the full truth about their illnesses," "naming a surrogate healthcare decision maker in advance," "not being a physical or psychological burden to family," "completing unfinished business," and "not receiving treatments to prolong life when chances of survival are low."* The areas that a greater proportion of relatives highlighted as being vital were *"being respected; not being treated only for diseases but also having their spiritual needs met," "having their love ones around when needed," and "having religious rituals conducted at the end of life"*.

The three most important issues according to the patients (558 responses) were *"receiving the full truth about their illnesses"* (163 respondents; 29.2%), followed by *"passing away at home"* (79 respondents; 14.2%), and *"relief from uncomfor*table *symptoms such as pain and shortness of breath"* (55 respondents; 9.9%). The relatives (521 responses) expected that elderly patients would emphasize *"receiving the full truth about their illnesses"* (109 respondents; 19.8%), followed by *"having their love ones around when needed"* (83 respondents; 15.1%), and *"relief from uncomfor*table *symptoms such as pain and shortness of breath"* (75 respondents; 13.6%).

3.2. Factors associated with preference of elderly patients at the end-of life period regarding desire for a home death

Univariate analysis of factors associated with preference of elderly patients at the end-of life period regarding desire for a home death is shown in Table 3. Stepwise regression analysis was applied to investigate factors associated with wishing to pass away at home among elderly patients, it showed that elderly patients from Khon Kaen, six years or lower of education, lower income, small family size, being dissatisfied with life, and type of previous occupation were independent factors (Table 4).

Table 2
Comparison of the preferences of elderly patients regarding palliative care during their end-of-life period and the perceptions of their relatives about those preferences using univariate analysis.

Statements	Older adult wishes	Relatives' perception of older adults' wishes	Risk ratio (95%CI)	p-value
1.They/I wish to receive the full truth about their/my illnesses	572 (95.5%)	513 (85.8%)	2.2 (1.6,3.1)	0.00*
2.They/I want their/my family to know the full truth about their illnesses	558 (93.9.%)	567 (95%)	0.9 (0.7,1.1)	0.44
3.They/I wish to be involved in decisions about their/my treatment	538 (90.6%)	598 (88.3%)	1.1 (0.9,1.4)	0.20
4. They/I want to name a surrogate in advance to make healthcare decisions for when they are/I am not capable of doing so	512 (86.2%)	550 (92%)	0.8 (0.7,0.9)	0.001*
5. They/I want relief from uncomfortable symptoms such as pain and shortness of breath	581 (97.5%)	575 (96.3)	1.2 (0.8,1.8)	0.24
6.They/I wish to be respected, not being treated only for diseases but have spiritual needs met	568 (95.5%)	584 (97.7%)	0.8 (0.6,0.9)	0.04*
7.They/I wish to have their/my loved ones around when needed	548 (92.6%)	586(97.8%)	0.6 (0.5,0.7)	0.00*
8.They/I do not want to be a physical or psychological burden to their/my family	575 (87.1%)	411 (69.2%)	1.9 (1.6,2.4)	0.00*
9.They/I want to complete unfinished business, be prepared to die, and say goodbye to family and friends	524 (88.2%)	487 (81.6%)	1.3 (1.01,1.6)	0.001*
10.They/I do not want to receive treatments to prolong their/my life when the chances of surviving are slim	489 (81.9%)	388 (65.2%)	1.6 (1.4,1.9)	0.00*
11.They/I wish to have religious rituals conducted at the end of their/my life	431 (72.4%)	477 (79.8%)	0.8 (0.7,0.9)	0.003*
12.They/I wish to be mentally aware in the last hour of their/my life	522 (87.6%)	511 (85.6%)	1.01 (0.9,1.3)	0.31
13.They/I wish to pass away at home	350 (59.2%)	383 (64.4%)	0.9 (0.8,1.01)	0.06*

Note: *p-value was significant at $p < 0.05$, CI; confidence interval.

4. Discussion

Previous research has found that religious belief affects the end-of-life decisions of terminally-ill patients and their families (Chakraborty et al., 2017). As the majority of the participants in this study were Buddhist, their responses could indicate the influence of a Buddhist worldview on medical decision-making. Buddhism believes that suffering is inherent to everyone. Buddhist doctrines may lead individuals to a more insightful understanding of incurable illnesses and offer them the way to focus their minds whilst dealing with physical and psychological symptoms at the end-of-life period. Therefore, palliative care could benefit from Buddhist insights in the form of sympathetic care and relating death to life (Masel, Schur, & Watzke, 2012).

The overall results of this study suggest that elderly Thai patients understood palliative care concepts, as more than 70% of them agreed with palliative-related statements, with the exception of the 13th item (*"wishing to pass away at home"*). There is a possible demographic explanation for this (S. Stonington, 2011; S. D. Stonington, 2012). Previous studies have shown that patients living in rural areas tend to prefer to pass away at home as home death is related to a better rebirth according to Buddhist belief. Many of these patients also wish to be cared for by their family, neighbors, and friends (S. Stonington, 2011; S. D. Stonington, 2012). However, for patients living in urban areas like those in this study, palliative care at home can be difficult due to factors such as the low level of support for home palliative care provided by the public health system and weaker family networks (Reviewed & Stoltenberg, 2016). The preferences of urban residents have, thus, shifted toward dying in a hospital. This is consistent with a former survey regarding the wishes of elderly patients in Bangkok (Srinonprasert et al., 2014).

In addition, the findings of this study support a prior systematic review of religious beliefs among elderly Thai patients, which found that patients placed the highest importance on knowing the full truth about their illnesses (Chakraborty et al., 2017; Srinonprasert et al., 2014). The possible reason for this result is older adults favored their family and physicians to be involved in the decision making regarding their illnesses. It is consistent with the prior report of northern Thai patients with terminal illnesses, they desired physicians and relatives for making decisions regarding end-of-life care (Sittisombut & Inthong, 2009). This finding supports the former report that Asian patients preferred family to be involved in the decision making while African Americans were more likely to decide for themselves whether or not to receive life support (Sittisombut & Inthong, 2009).

The relatives of patients in this study ranked two palliative care concepts as being of lower priority: "*not receiving treatments to prolong life" and "passing away at home."* The participants low ranking of the former statement (*"not receiving treatments to prolong life")* corresponds with the findings of the Bereaved Family Survey that family members usually underestimate the importance of this issue to elderly patients (Wong & O'Hare, 2017). That survey also showed that patients with terminal illness from end-organ failure, such as end-stage renal disease and cardiopulmonary failure, frailty, or other serious conditions where they were unlikely to make medical decision during that time, were more likely to die in the intensive care unit than undergo palliative care consultation compared to patients with cancer or dementia (Wong & O'Hare, 2017). These patients also tended to undergo intensive procedures including cardiopulmonary resuscitation, mechanical ventilation, and artificial nutrition (Wong & O'Hare, 2017). This could be the result of an improvement in medical technology, clinical medicine, and health care delivery that assists in prolonging life but shifting advanced patients from the concept of "good death" (Raisio et al., 2015; Wong & O'Hare, 2017). The latter statement that relatives of patients rated as being of lower priority (*"passing away at home")* might be explained by similar reason of those described above for the elderly that palliative care at home might be difficult for them to manage (Reviewed & Stoltenberg, 2016).

This is the first study from Southeast Asia that compares the perceptions of elderly patients and their relatives regarding their wishes during their end-of-life period. Family under-estimated the importance of five of the 13 items on the questionnaire and over-estimated that of three. These findings support prior reports that have shown that issues related to autonomy were of critical importance to elderly patients. For

Table 3
Factors associated with elderly patients answering that they would prefer to pass away at home using univariate regression analysis.

Factors	Prefer to die at home	Prefer not to die at home	Unadjusted OR	(95%CI)	p-value
Research site, n(%)					
- Siriraj hospital, Bangkok	149 (44.4)	187 (55.6)	1	–	–
- Srinagarind hospital, Khon Kaen	201 (78.8)	54 (21.2)	4.7	(3.2,6.7)	0.00*
Age (years), median (IQR1,3)	71 (66,77)	70 (65,75)	1.02	(1.0,1.1)	0.12
Gender, n(%)					
- Female	205 (64.1)	115 (35.9)	1	–	–
- Male	144 (53.3)	126 (46.7)	0.6	(0.5,0.9)	0.00*
Religion, n(%)					
- Buddhist	337 (59.3)	231 (40.7)	1	–	–
- Christian	4 (50)	4 (50)	0.7		0.59
- Muslim	3 (100)	0	1	(0.2,2.8)	–
- Other	1 (100)	0	1	–	–
Previous occupation, n(%)					
- None	112 (78.9)	30 (21.1)	1	–	–
- Government officer/state enterprise	117 (44.8)	144 (55.2)	0.2	(0.1,0.3)	0.00*
- Agriculture	62 (84.9)	11 (15.1)	1.5	(0.7,3.2)	0.28
- Self-employed, general work	47 (50.5)	46 (49.5)	0.3	(0.2,0.5)	0.00*
Marital status, n(%)					
- Single	40 (50)	40 (50)	1	–	–
- Married	294 (61)	188 (39)	1.5	(0.9,2.5)	0.07
- Divorced/separated	13 (52)	12 (48)	1.1	(0.4,2.7)	0.86
Years of formal educational					
- ≤ 6 year	187 (78.2)	52 (21.8)	4.2	(2.9,6.1)	0.00*
- > 6 year	161 (46)	189 (54)	1	–	–
Family income per month (baht), n(%)					
- ≤ 30,000	245 (69.4)	108 (30.6)	2.9	(2.0,4.1)	0.00*
- > 30000	98 (44.1)	124 (55.9)	1	–	–
Family size, n(%)					
- < 3	106 (50.5)	104 (49.5)	1	–	–
- ≥ 3	242 (63.9)	137 (36.1)	1.7	(1.2,2.4)	0.002*
Underlying disease, n(%)					
- DM	103 (62.4)	62 (37.6)	1.2	(0.8,1.7)	0.32
- HT	214 (58.3)	153 (41.7)	0.9	(0.6,1.3)	0.56
- DLD	116 (54.7)	96 (45.3)	0.7	(0.5,1.1)	0.10
- IHD	28 (63.6)	16 (36.4)	1.2	(0.6,2.3)	0.53
- CVA	26 (68.4)	12 (31.6)	1.5	(0.8,3.1)	0.23
- CRF	25 (61)	19 (39)	1.1	(0.6,2.1)	0.81
- COPD/asthma	19 (57.6)	14 (47.4)	0.9	(0.5,1.9)	0.84
- Malignancy	11 (50)	11 (50)	0.7	(0.3,1.6)	0.37
History of hospital admission, n(%)	244 (59.5)	166 (40.5)	1.0	(0.7,1.5)	0.83
In good health, n(%)	110 (57.3)	82 (42.7)	0.9	(0.6,1.3)	0.52
Not satisfied with life, n(%)	45 (75)	15 (25)	2.2	(1.2,4.1)	0.01*
Prior experience seeing someone die, n(%)	278 (60.8)	179 (39.2)	1.3	(0.9,2.0)	0.14
Prior experience caring for someone at the end-of-life, n(%)	208 (60.1)	138 (39.9)	1.1	(0.8,1.5)	0.53

Note: IQR; inter-quartile range, * p-value was significant at $p < 0.05$, CI; confidence interval DM; diabetes mellitus, HT; hypertension, IHD; ischemic heart disease, CVA; cerebrovascular accident, CRF; chronic renal failure, COPD; chronic obstructive pulmonary disease, number and percentages of responses in each issue presented statistics of available data.

example, they strongly desired to receive the full truth about their illnesses. However, the difference between patients' preferences and their relatives' expectations were highest in this area (RR of 2.2), followed by naming a surrogate decision-maker (RR of 1.9) (Paillaud et al., 2007; Sulmasy et al., 2007). Moreover, they placed greater importance on the closure of life affairs and receiving physical and psychological support than the relatives expected.

Research site of elderly patients, previous occupation, level of education, family income, family size and dissatisfaction in life were independent factors associated with a home as the preferred place of death. The possible explanation regarding location of elderly patients which was the most impact of wishing to pass away at home based on the highest adjusted odds ratio might be from the ethnographic data which are the data from qualitative research project where the intent is to provide a detailed, in-depth description of everyday life and practice of native people. The Thai native people tend to feel that it is ethical to withdraw life support at homes but unethical to do it in the hospitals (S. D. Stonington, 2012). Their traditional beliefs are influenced by Buddhist spirituality since home death is related to the quality of rebirth. They believe that it is moral to die at home under the care of the family, a network of neighbors and friends whereas hospitals appear powerful place for saving lives (S. Stonington, 2011; Stonington, 2012). Hospitalized Thai patients at the very end-of-life times are frequently urged home by ambulance to withdraw life support in the more ethical place (Stonington, 2011; Stonington, 2012). Research site was identified as one of the independent factors. This result supports the previous study that sociodemographic factors affecting the place of death (Gisquet, Julliard, & Geoffroy-Perez, 2016). Urban lifestyles like Bangkok make palliative care at home becomes more difficult because of several reasons including low-level support of public health system for palliative care at home and weakened family network (Reviewed & Stoltenberg, 2016). Urban individuals' wishes then shifted their preferences to die in hospitals. This result was consistent with the study of wishes at the end-of-life period of elderly patients in Bangkok, Thailand (Srinonprasert et al., 2014). The studies in Germany, France and Canada also found that living in a rural area was a significant factor favoring home death compared with dying in the hospital or extended care (Escobar Pinzon et al., 2011; Gisquet et al., 2016; Jayaraman & Joseph, 2013).

The previous occupation as self-employed/general work declined the preference for home death compared to individuals who did not work. The reason might be from the fact that the person who did not work might have stronger family solidarities and wanted to keep their

Table 4
Factors associated with elderly patients answering that they would prefer to pass away at home using stepwise regression analysis.

Factors	Adjusted OR	(95% CI)	p-value
Research site			
- Siriraj hospital, Bangkok	1	–	–
- Srinagarind hospital, Khon Kaen	2.6	(1.7,4.1)	0.00*
Previous occupation			
- None	1	–	–
- Government officer/state enterprise	0.6	(0.3,1.0)	0.05
- Agriculture	–	–	–
- Self-employed, general work	0.5	(0.3,0.9)	0.02*
Years of formal educational (years)			
- ≤ 6	2.3	(1.3,4.0)	0.003*
- > 6	1	–	–
Family income per month (baht)			
- ≤ 30,000	1.7	(1.1,2.5)	0.02*
- > 30,000	1	–	–
Family size (person)			
- < 3	1	–	–
- ≥ 3	1.7	(1.1,2.6)	0.01*
Not satisfied with life	2.5	(1.1,5.4)	0.02*

* p-value < 0.05.

autonomy until the end of their lives whereas the other's perception was shaped up by social change (Fukui, Yoshiuchi, Fujita, Sawai, & Watanabe, 2011; Gisquet et al., 2016). Lower levels of education showed preferences of dying at home greater than the other. This finding could be explained by the cognitive resources regarding attitudes and belief about the place of death, they were influenced by traditional belief as explained earlier (Stonington, 2011; Stonington, 2012). However, the results were contradicted with prior reports in France and Germany that a higher level of education was associated with home death. The possible explanation is there is a better support of health system for palliative care in France while in Thailand, the system has not been established well (Escobar Pinzon et al., 2011; Gisquet et al., 2016). For example, Srinagarind Hospital, Khon Kaen is the center for palliative care services and education in the northeastern part of Thailand. Currently, there are two models of continuing hospital-to-home palliative care including hospital-based palliative care and integrated community-based palliative care. Volunteer-supported palliative care is limited in this area where in the southern part, there are 3 models available but there are main obstacles including limiting the use of analgesics, compartmentalization without coordination, lack of knowledge and skills, and insufficiency and workload of palliative care personnel, and shortage of medical equipment (Nilmanat, Udchumpisai, Potjamanpong, & Niyomthai, 2019).

Lower financial status was another related factor of preference to die at home. Again, this finding was opposite to the results in France where people with high economic status preferred to die at home because they had more resources to engage in arrangement their deaths and they had family physicians that could discuss closer regarding their wishes about the place of death (Gisquet et al., 2016). Similar reason for the difference could be explained by the inadequate support of health care system for palliative care in Thailand, individuals with higher living status preferred to receive suitable and comfortable end-of-life care so the hospital was their preferable location. For elderly patients who lived with more family members, it was also a factor influencing the preference of home death. The result was consistent with the studies in Japan and Germany which found that having caregiver, social support, having a nonworking relative were factors favoring home death compared with dying in hospital (Escobar Pinzon et al., 2011; Ohmachi et al., 2015). Self-rated dissatisfaction in life was another associated factor. Possible explanation of this finding is usual Thai's belief considers home as a sacred and contains familiar things that put peaceful moment of death for them (Stonington, 2011). Thus, displeasured person leans to die at peaceful place like home.

The results of this report could be applied in combination with those of a previous study, which found that the preferences of terminally ill patients for their end-of-life period were generally stable over time with respect to their loved ones and physicians (Sulmasy et al., 2007). Improving the quality of care for dying patients and their families should not just be aimed at treating specific illnesses. It should also involve broader issues such as providing them with complete information about their care, early identification of surrogate individuals for decision-making, discovering patients' unmet needs, and having discussions with patients about their place of death before their illnesses progress to the point that they are unable to communicate their wishes (Tenzek & Depner, 2017). Regional health policy should consider related factors influencing the preference of home death when establishing particular palliative care home services as differences in cultural contexts could affect the preference of individuals. However, implementing advanced care planning is not an easy task, even in Western countries (Endacott et al., 2016; Srinonprasert et al., 2014). Moreover, it is especially challenging for healthcare providers to accomplish this in parts of Asia, where open discussion about death can be sensitive or even offensive (Ho et al., 2013; Srinonprasert et al., 2014; Tenzek & Depner, 2017). This kind of planning, however, could help family members better understand elderly patients' wishes and assist them in achieving the goal of a good death.

There are some limitations to this study. First, the patients were not terminally ill, meaning that neither they nor their relatives were in a position where they had to make these kinds of immediate decisions. Therefore, their real-world preferences with regard to these end-of-life decisions might differ from those they indicated in this study. Second, the perception of relatives of patients might have differed from those of the patients because they were not compared on an individual basis. However, the results provide an overall picture of the differences between elderly patients' wishes for their end-of-life period and the perceptions of their relatives regarding their wishes. A study should be designed to directly compare these preferences and perceptions on an individual level in order to better understand the wishes of terminally ill patients. Third, the questionnaire used in this study was developed in a population of Buddhists and its validity and reliability were not addressed, its application in other religions might be limited. Last, some factors that influencing place of death in previous reports did not measure in this study such as specific diseases at end-of-life period; for example, cancer, stroke, dementia and respiratory system diseases (Beng et al., 2009; Escobar Pinzon et al., 2011). Further studies are required to get more understanding of the preferences of elderly patients at the terminal stage of their lives.

5. Conclusions

In this study, the majority of elderly Thai patients and their relatives understood the key concepts involved in the notion of a "good death." Receiving the full truth about their illnesses was the most important issue for both elderly patients and their relatives. Patients' preferences concerning their place of death have changed, in that they have come to rate dying in the hospital has been more desirable than dying at home. There were significant discrepancies among elderly patients' wishes and the perceptions of family members regarding these preferences. The greatest differences between the two groups were related to issues of autonomy, where there was a higher proportion of patients who wanted to know the truth about their conditions than relatives who expected patients would prefer this. Independent factors associated that affected the place of death were the location of elderly patients, previous occupation, level of education, family income, family size and dissatisfaction in life. There need to be more effective procedures implemented for healthcare teams, elderly patients, and family members of elderly patients regarding end-of-life care.

Authors' contributions

Dr Varalak Srinonprasert contributed to the study design, concept of this work, interpretation of data, and approval for final version of the article. Dr Srivieng Pairojkul, Dr Jarin Chindaprasirt, and Prof. Verajit Chotmongkol contributed to the concept of this study and approval for the final version of the article. Dr. Manchumad Manjavong, Dr Sawadee Kaiyakit, Dr Thitikorn Juntararuangtong, Dr Kongpob Yongrattanakit, and Dr Thunchanok Kuichanuan contributed to acquisition of data, and Dr Panita Limpawattana contributed to the study design, analysis and interpretation of data, writing drafted manuscript and approval the version to be published.

Competing interests

The authors declare no potential conflicts of interest with respect to the authorship

Acknowledgements

This manuscript was funded by the Neuroscience Research and Development Group, Khon Kaen University, Thailand (grant no. 004 / 2560). We would like to acknowledge Dr Dylan Southard (Research Affairs, Faculty of Medicine, Khon Kaen University, Thailand) for editing the manuscript. The authors also would like to thank the Sleep Apnea Research Group, Khon Kaen University, Khon Kaen, Thailand.

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