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FLEMISH PALLIATIVE-CARE NURSES' ATTITUDES TO PALLIATIVE SEDATION

RESULTS OF A QUANTITATIVE STUDY

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Abstract

Palliative sedation is an option of last resort to control refractory suffering. In order to better understand palliative-care nurses' attitudes to palliative sedation, an anonymous questionnaire was sent to all nurses (589) employed in palliative care in Flanders (Belgium). In all, 70.5% of the nurses (*n*=415) responded. A large majority did not agree that euthanasia is preferable to palliative sedation, were against non-voluntary euthanasia in the case of a deeply and continuously sedated patient and considered it generally better not to administer artificial floods or fluids to such a patient. Two clusters were found: 58.5% belonged to the cluster of advocates of deep and continuous sedation and 41.5% belonged to the cluster of nurses restricting the application of deep and continuous sedation. These differences notwithstanding, overall the attitudes of the nurses are in accordance with the practice and policy of palliative sedation in Flemish palliative-care units.

Key words

Attitudes, nurses, palliative sedation, Belgium

Introduction

Despite advances in pain and symptom management, sometimes at the end of a protracted disease such as cancer symptoms can turn out to be uncontrollable. In such cases, the palliative-care team may use palliative sedation to control refractory suffering as an option of last resort (1, 2). Palliative sedation is "the intentional administration of sedative drugs in dosages and combinations required to reduce the consciousness of a terminal patient as much as necessary to adequately relieve one or more refractory symptoms" (3-6). There can be different levels of palliative sedation depending on the way in which it is used (intermittent and acute) and the dosages administered (mild/light and deep) (7, 8).

In the literature regarding this topic, there is no agreement regarding the frequency of palliative sedation in terminal patients. These variations may not only be due to the different contexts in which the studies were undertaken, but also to varying levels of knowledge about palliative sedation among those who completed the questionnaires, and furthermore, to differences in definitions, research aims and methodology (9). For instance, in Flanders, the Dutch-speaking region of Belgium, in 2007 Chambaere *et al.* estimated the incidence of "continuous deep sedation until death" at 14.5% of all deaths on the basis of a death-certificate study (10). A much lower frequency of palliative sedation was observed by Claessens *et al.* who found in a prospective longitudinal descriptive study covering the period September 2004 to April 2005 that only 7.5% of patients admitted to Flemish palliative-care units had received palliative sedation (8).

Palliative sedation continues to be a much debated ethical topic. Recently, this became once again clear in the manifold and diverse reactions in the American Journal of Bioethics to the article of Raus *et al.*, who had argued that continuous sedation at the end of life is not always a preferable alternative to physician-assisted suicide (11). A decision to sedate a patient suffering from refractory symptoms in palliative care is never easy and involves the

making of difficult ethical decisions as the treatment affects the patient's capacity to act, feel, think and interact with people. Such decisions may also have an impact on the professional caregivers, and especially the nurses, who have been caring daily for the terminal patient. When a decision to sedate a patient is taken, nurses are generally actively involved in informing the patients and their relatives about palliative sedation, in the administration of the sedative drugs, in the regular assessment of the condition of the patient, and in the total care for the sedated person (12, 13). Such experiences confront nurses with the ethical complexity of palliative sedation. Studies have shown that nurses experience that ethical problems are entangled with deep and continuous palliative sedation (13-15). It has also been observed that involvement in the administration of palliative sedation can be a source of emotional burden for nurses (16, 17). These facts illustrate that it is important to gain more insight into the attitudes of nurses to palliative sedation and into factors that may influence their attitudes.

The attitudes of palliative-care nurses may be influenced by various factors, such as gender, age, amount of experience with the care of dying patients, and religion or world view. In earlier studies, these factors have been found to influence nurses' attitudes to treatment decisions in advanced disease and euthanasia in particular (18). Especially the influence of religion and world view on nurses' attitudes to euthanasia, i.e. "the intentional administration of lethal drugs in order to painlessly terminate the life of a patient suffering from an incurable condition deemed unbearable" (3, 4, 19), has been attested in the literature (20, 21). The above mentioned factors may influence the attitudes of palliative-care nurses to palliative sedation as well. A concrete indication for the possible influence of religion and world view on these attitudes can be derived from a study by Seale who assessed the association between religion and medical decisions at the end of life. He observed that physicians who had indicated to be non-religious were more likely to have administered "continuous deep sedation until death" (22). This observation is in line with the earlier finding of Curlin *et al.*

who noted that highly religious physicians were more likely to disapprove of "terminal sedation", which was defined as "sedation to unconsciousness in dying patients" (23). On this basis, we could indeed expect nurses' attitudes to palliative sedation to be influenced by religion or world view as well. However, Inghelbrecht *et al.* noted a more diverse influence of religion on Flemish nurses' attitudes to "bringing the patient into a coma until death". The researchers inquired after the nurses' religious affiliation and the importance they attributed to "religion/philosophy of life in their professional attitudes towards end-of-life decisions" with a "possible or certain life-shortening effect". There was no effect of religious affiliation and importance of religion on the nurses' answers to the statement "Bringing the patient into a coma until death is an optimal dying process, especially if this is the only way to bring the patient's suffering under control." However, there was an effect of importance of religion on the nurses' answers to the statement "I would in no case be prepared to administer the drugs to bring the patient into a coma until death." Nurses stating that their religion was important, were more often in agreement with the above statement (24).

Aim of the Study

We intended to study nurses' attitudes to palliative sedation and assess the influence of demographic variables including religion and world view on these attitudes. We decided to focus on the ethical attitudes of *palliative-care* nurses. Their attitudes are of particular interest. Not only are palliative-care nurses more likely to be confronted with patients in need of palliative sedation but due to palliative-care education and training they can also be expected to be knowledgeable about this issue. For these reasons, the attitudes of palliative-care nurses to palliative sedation may differ from those of nurses working in other settings. Available studies on palliative-care nurses and palliative sedation are either small-scale involving only a limited number of palliative-care nurses (13-15) or are focused on the

emotional burden caused by palliative sedation (17). There have been no large-scale quantitative studies of palliative-care nurses' ethical attitudes to palliative sedation. Therefore we opted to undertake a quantitative study of these attitudes.

To this purpose, we used data from a survey conducted in 2006 by the Interdisciplinary Centre for the Study of Religion and World View (Katholieke Universiteit Leuven) and the Flemish Palliative Care Federation. In this survey, Flemish palliative-care nurses were requested to indicate their opinion on a large number of statements regarding treatment decisions in advanced disease, including palliative sedation. Only recently, in December 2010, the Flemish Palliative Care Federation issued its guideline on palliative sedation (25). While assessing the data it has to be taken into consideration they were collected before the issuing of the guideline.

Method

In the middle of May 2006, an anonymous self-administered questionnaire was sent to all nurses (n=589) working in Flemish palliative care. The Flemish Palliative Care Federation had provided the addresses of the nurses. Since the researchers did not know the nurses' names but only the number of nurses working in each medical institution, each institution received a package containing a questionnaire for every registered palliative-care nurse as well as an accompanying letter requesting that there be a distribution of the questionnaires among the palliative-care nurses. Earlier, the questionnaire had been presented for evaluation to a team of palliative-care experts and sociologists. The questionnaire had also received approval from the Flemish Palliative Care Federation and its ethics steering group.

The questionnaire consisted of three parts. In the first part, the nurses were requested to provide demographic information, including gender, age and years of experience in palliative care. In the second part, the respondents were asked to provide information

concerning their religion or world view. The third part of the questionnaire consisted of a list of attitudinal statements on which the respondents had to give their opinion using a five point Likert scale. Ten statements dealt with palliative sedation. To avoid confusion over the meaning of terms, definitions of palliative sedation, voluntary and non-voluntary euthanasia were given in the questionnaire. To complete the questionnaire approximately thirty to forty minutes were needed. Together with the questionnaires the nurses received stamped return envelopes to mail back completed questionnaires. In the beginning of June, a follow-up mailing reminding the nurses about the questionnaires was sent to all of the nurses. At the end of June, a third mailing was sent again to all of the nurses. All nurses received a second reminder. The cut-off date for responses was 31 August 2006. 415 nurses (70.5%) returned completed questionnaires.

In order to gain a more systematic insight into the nurses' attitudes to palliative sedation, we decided to perform a latent class analysis on the nurses' opinions on the ten statements regarding palliative sedation. This analysis would allow us to divide the nurses into different attitudinal clusters or groups, each of them containing nurses with similar attitudes to palliative sedation. To assess the effect of demographic variables on the palliative-sedation clusters we used the Pearson chi-square and Kruksal-Wallis tests. To evaluate the effect of religion and world view on the palliative-sedation clusters, we compared these clusters with religious or ideological clusters using the Pearson chi-square test. The religious or ideological clusters were obtained by performing a latent-class analysis on the nurses' answers to the questions regarding their religion and world view in the second part of the questionnaire. This analysis has been described elsewhere (26). Five religious or ideological clusters were found: atheists/agnostics (66 nurses, 18.3%), 'doubters' (64 nurses, 17.8%), church-going respondents (106 nurses, 29.4%), religious but not church-going respondents (64 nurses, 17.8%), and devout church-going respondents (60 nurses, 16.7%). For the

statistical analysis R 2.4.1 was used (www.r-project.org). For the latent-class analysis the poLCA-package was utilized (27, 28).

Results

Forty-nine nurses (11.8%) were male and 366 (88.2%) were female. The mean age was 43.6 (std. dev. 8.9). The mean number of years of professional experience in palliative care was 5.9 (std. dev. 3.5, ten no response). The answers to the questions enquiring about attitudes towards palliative sedation have been given in table one.

Table 1: Attitudes to palliative sedation

Statement regarding palliative sedation	*n*	*%*	*Freq*
1. [Voluntary] euthanasia guarantees a humane end of life in a much better way than palliative sedation. Therefore, according to me, [voluntary] euthanasia should be preferred to palliative sedation.	410		
1. Strongly disagree		31,0	127
2. Disagree		44,6	183
3. Neither agree/ nor disagree		19,0	78
4. Agree		2,9	12
5. Strongly agree		2,4	10
2. According to me, palliative sedation renders [voluntary] euthanasia superfluous.	409		
1. Strongly disagree		15,4	63
2. Disagree		46,9	192
3. Neither agree/ nor disagree		16,6	68
4. Agree		15,9	65
5. Strongly agree		5,1	21
3. It often happens that physicians pretend practicing palliative sedation, but are in fact intentionally shortening a patient's life ('slow euthanasia').	410		
1. Strongly disagree		6,6	27
2. Disagree		29,8	122
3. Neither agree/ nor disagree		33,9	139
4. Agree		26,1	107
5. Strongly agree		3,7	15
4. According to me deep and simultaneously continuous sedation is only justified in the case of patients with very limited life expectancy (as a rule less than one week).	410		
1. Strongly disagree		3,4	14
2. Disagree		26,1	107
3. Neither agree/ nor disagree		19,0	78
4. Agree		42,0	172
5. Strongly agree		9,5	39
5. In my opinion, as a rule artificial nutrition and hydration is not a proper treatment in the case of a deep and simultaneously continuous sedation.	407		
1. Strongly disagree		0	0
2. Disagree		1,5	6
3. Neither agree/ nor disagree		4,4	18
4. Agree		46,2	188
5. Strongly agree		47,9	195
6. According to me, deep and continuous sedation is only justified in the case of patients who have requested this treatment explicitly or who have explicitly agreed with this treatment.	408		
1. Strongly disagree		1,0	4
2. Disagree		17,6	72

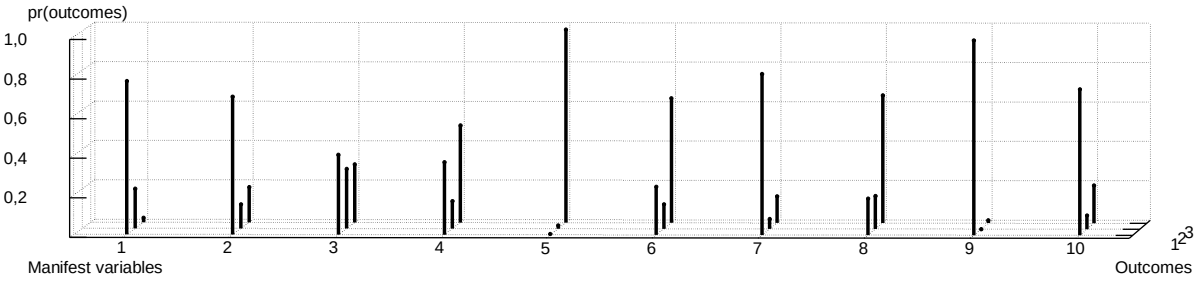
	3. Neither agree/ nor disagree		15,9	65
	4. Agree		38,2	156
	5. Strongly agree		27,2	111
7.	When, in the case of a deep and continuous sedation that lasts longer than expected, the patient's family indicates that waiting for death has become unbearable and demands that 'something' is done, then, in my opinion, active ending of life is ethically justified.	407		
	1. Strongly disagree		29,0	118
	2. Disagree		45,9	187
	3. Neither agree/ nor disagree		12,0	49
	4. Agree		10,6	43
	5. Strongly agree		2,5	10
8.	In my opinion palliative sedation can only be administered safely when a specialised palliative care team is involved in the decision making process.	409		
	1. Strongly disagree		0,5	2
	2. Disagree		11,5	47
	3. Neither agree/ nor disagree		15,6	64
	4. Agree		51,8	212
	5. Strongly agree		20,5	84
9.	According to me, as a rule continuous sedation can only be administered when intermittent sedation (in which the patient is made to regain consciousness at set timings) does not give solace as expected.	406		
	1. Strongly disagree		11,8	48
	2. Disagree		47,8	194
	3. Neither agree/ nor disagree		21,2	86
	4. Agree		16,7	68
	5. Strongly agree		2,5	10
10.	According to me, as a rule continuous sedation can only be administered when mild or light sedation does not give solace as expected.	405		
	1. Strongly disagree		8,1	33
	2. Disagree		37,0	150
	3. Neither agree/ nor disagree		17,8	72
	4. Agree		32,1	130
	5. Strongly agree		4,9	20

As a group Flemish palliative nurses did not support the statement that euthanasia would be more humane than palliative sedation. In all, 75.6% of the nurses disagreed or strongly disagreed with that statement. Still, only one-fifth was convinced that due to palliative sedation there is no need for euthanasia. In all, 74.9% were convinced that euthanasia requests by the family of a patient in deep and continuous sedation should be rejected. Most nurses (94.1%) agreed or strongly agreed that in cases of deep and simultaneously continuous sedation artificial hydration or nutrition should not be given. More than 60% were of the opinion that permission of the patient should be required before administering deep and continuous sedation. More than half of the nurses thought that deep and simultaneously continuous sedation should only be administered when life expectancy is very limited. But nurses were divided as to whether deep sedation can be administered immediately or whether it has to be preceded by mild sedation. On the other hand, nearly 60%

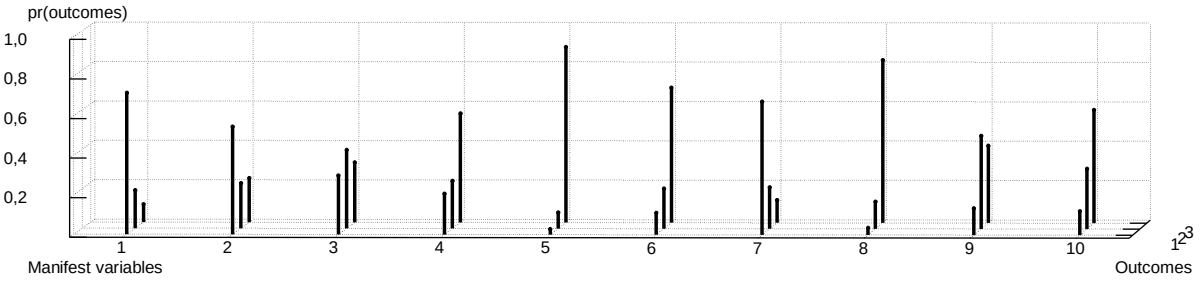
did not consider it necessary to first attempt to control refractory symptoms with intermittent sedation before administering continuous sedation.

In order to divide the nurses into different attitudinal groups regarding palliative sedation, a latent class analysis was fitted, treating the manifest variables as nominal data. To reduce the number of parameters, the answer categories one (strongly disagree) and two (disagree) were recoded to one (disagree), answer category three (neither agree/ nor disagree) was recoded to two (neutral), and answer categories four (agree) and five (strongly agree) were recoded to three (agree). Each model with two to six latent clusters was fitted 500 times. The model with the best Bayesian information criterion (BIC) was selected. The final conditional item response probabilities for each of the clusters of the retained model can be found in the plots below. The numbers on the horizontal axis refer to the items on the questionnaire as mentioned in table one. The numbers one to three on the right hand side of the plot refer to the recoded answer categories. One is “disagree”. Two is “neutral”. Three is “agree”. On the basis of these plots the dominant characteristics of each cluster of respondents can be determined. The plots show whether members of each of the clusters were more likely to agree (three), disagree (one) or neither agree nor disagree (two) with each of the ten statements.

Cluster 1: advocates of deep and continuous sedation



Cluster 2: nurses restricting the application of deep and continuous sedation



Two clusters were found. 58.5% (n=231) of those nurses whose cluster membership could be determined belonged to the first cluster. 41.5% of the nurses (n=164) were members of the second cluster. Both clusters mainly differed in issues pertaining to deep sedation and continuous sedation. The average member of the first cluster thought that deep and continuous sedation is only justified in the case of patients with very limited life expectancy. Yet, many nurses in this cluster were of a different opinion regarding this issue. The vast majority of the members of the first cluster argued against the proposition that as a rule intermittent sedation and light sedation should precede continuous and deep sedation respectively. Therefore, we have labelled this cluster the cluster of the advocates of deep and continuous sedation. The average nurse belonging to the second cluster was convinced that deep and simultaneously continuous sedation is only justified in the case of patients with very limited life expectancy. A substantial part of the nurses in this cluster thought that intermittent sedation is required before continuous sedation. Yet, almost as many respondents were in doubt regarding this requirement of intermittent sedation. The average member of the second cluster was of the opinion that light sedation should be administered before proceeding to deep sedation. Members of the second clusters are called nurses restricting the application of deep and continuous sedation.

When the clusters are compared with the demographic variables gender, religion and world view, age, and years of experience in palliative care, no significant differences are found (table 2).

Table 2: Effect of demographic variables on clusters

	Cluster 1 (n = 231) Advocates of deep sedation	*Cluster 2 (n = 164) Respondents restricting the application of deep sedation*	*Test statistic*
Gender			$\chi^2_1 = 0.8$, $P = 0.4$[1]
Male	13% (31)	10% (17)	
Female	87% (200)	90% (147)	
Religion and world view			$\chi^2_4 = 8.5$, p = 0.075[1]
Atheists/agnostics	22% (44)	14% (20)	
'Doubters'	15% (30)	24% (34)	
Church-going	28% (57)	31% (44)	
Religious but not church-going	20% (41)	15% (21)	
Devout church-going	14% (29)	17% (25)	
Age	45 (37, 51)	45 (36, 50)	$F_{1,392} = 1$, $P = 0.3$[2]
Years of experience	6 (4, 7)	5 (3, 7)	$F_{2,383} = 0.3$, $P = 0.6$[2]

Numbers after percents are frequencies. For age and years of experience the median (interquartile range) is given. Tests used: [1]Pearson test; [2]Kruskal-Wallis test

Discussion

In 2004-2005, a prospective longitudinal descriptive study was undertaken by Claessens *et al.* who registered the characteristics of patients receiving palliative sedation in Flemish palliative-care units (7, 8). The attitudes of Flemish palliative-care nurses of the present study can be compared with the practice of palliative sedation in Flemish palliative-care units. In general, the nurses' attitudes to palliative sedation are in agreement with the practice. Overall, the attitudes are also in agreement with the palliative-sedation policy of the Flemish Palliative Care Federation as stated in its guideline on palliative sedation (25). There is agreement regarding the life expectancy of sedated patients, the administration of artificial fluids and food to sedated patients, and the involvement of patients in decisions to start palliative sedation. A first agreement between the attitudes of the nurses, the practice of palliative sedation in Flemish palliative-care units, and the palliative-sedation guideline has to do with the life expectancy of sedated patients. Over half of the nurses were of the opinion that deep

and simultaneously continuous sedation is only justified when the patient's life expectancy is very limited. Claessens *et al.* found that in Flemish palliative-care units on average palliative sedation – light or deep, intermittent or continuous – is started 2.5 days before death (8). Likewise, the palliative-sedation guideline of the Flemish Palliative Care Federation states that palliative sedation can only be administered to dying patients. The application of continuous sedation is restricted to patients with a life expectancy of a maximum of a few days (25).

A second agreement concerns the administration of artificial nutrition and hydration to sedated patients. 94.1% of the nurses did not favour the administration of artificial nutrition and hydration in cases of deep and simultaneously continuous sedation. Claessens *et al.* observed that in Flemish palliative-care units no sedated patients received artificial nutrition and only 15% were artificially hydrated. These 15% had been receiving artificial fluids before the sedation (8). In the literature, the administration of food and fluids to sedated patients is not recommended as it is considered futile and even burdensome for the patient (25, 29-31). This does not mean, however, that palliative sedation automatically implies withdrawing or withholding artificial fluids and food. When a patient is sedated to control refractory symptoms and artificial fluids and/or food are withheld or withdrawn, two different ethical decisions are taken: a decision to sedate and a decision to withhold or withdraw fluids and/or food (19, 32). The nurses, who only indicated that in most cases of palliative sedation the patient does not benefit from the administration of artificial fluids and/or food, did not contradict this perspective. The palliative-sedation guideline of the Flemish Palliative Care Federation points out that in most sedated patients artificial nutrition and hydration has no positive effects. Simultaneously the guideline stresses that palliative sedation and forgoing artificial nutrition and/or hydration are not intrinsically connected (25).

A third agreement includes the patient's involvement whenever a decision to start palliative sedation is taken. A majority of the nurses believed that deep and continuous sedation can only be given to patients who have somehow approved of the treatment. Also the palliative-sedation guideline underlines the importance of obtaining informed consent if possible (25). In Flemish palliative-care units, patients were found to be part of the decision-making process and palliative sedation was only administered after the patient had consented (8). Therefore, it is hardly surprising that a large majority of the nurses were of the opinion that euthanasia requests by relatives of patients undergoing deep continuous sedation were ethically unacceptable. The nurses' disapproval indicates the importance attributed by the nurses to the patient's involvement in decisions regarding treatment options at the end of life. Moreover, in the case of a continuously and deeply sedated patient, euthanasia would be non-voluntary. Non-voluntary euthanasia is "the intentional administration of lethal drugs in order to painlessly terminate the life of a patient suffering from an incurable condition deemed unbearable, not at this patient's request" (3, 4, 19). Belgian law only permits euthanasia at the patient's request (voluntary euthanasia) and does not allow non-voluntary euthanasia (33, 34).

This does not mean the nurses disapproved of euthanasia. Although over 75% of the nurses denied that voluntary euthanasia is preferable to palliative sedation, just one-fifth agreed that because of palliative sedation there is no need for voluntary euthanasia. In an earlier publication, it was observed that as a group Flemish palliative-care nurses did not reject voluntary euthanasia (35). The nurses seem to be of the opinion that there can be cases of refractory suffering and extreme distress in which euthanasia would be a more appropriate solution to the patient's problems than palliative sedation. Here, we could think, for instance, of a terminal patient who has enjoyed an independent life and cannot accept the prospect of being fully dependent on others while being sedated. In their attitude, the nurses may have been influenced by the Belgian legal context which permits euthanasia. In this context, the

nurses may have found it hard to think of palliative sedation as a better alternative to euthanasia in the case of patients who desire euthanasia and have fulfilled all legal requirements for euthanasia to be granted.

The cluster analysis revealed that the most obvious contrasts between the palliative-care nurses' attitudes are related to the question whether intermittent sedation and light sedation should precede continuous and deep sedation respectively. Indeed, palliative sedation need not be deep in the sense that the patient is unconscious and no longer reacts to stimuli. Nor is palliative sedation necessarily continuous. It can also be administered intermittently or temporarily (7, 8). Members of the first cluster argued that intermittent sedation or light sedation should not necessarily precede continuous and deep sedation. They seem to be more open to deep and continuous sedation. As a consequence, in this group we can also observe a greater uncertainty as to whether deep and continuous sedation should be restricted to patients with very limited life expectancy. Members of the second cluster were inclined to advocate the administration of light sedation before deeply sedating a patient. Among these nurses there was also more openness for the idea that intermittent sedation should be tried before continuous sedation can be administered.

At first sight, the attitude of the nurses of the second cluster may seem to reflect a more careful approach. Indeed, in palliative sedation, the notion of proportionality is very important. The patient is sedated only as much as necessary to adequately relieve the refractory symptoms (3, 9, 19, 32). This aspect is also clearly expressed in the definition of palliative sedation that was mentioned in the introduction to this article. As per the principle of proportionality, it is however not required to try intermittent or light sedation first, before administering deep or continuous sedation. If after assessment of the patient's condition and wishes it is clear that only a deep or continuous sedation can relieve the patient's suffering, trying light or intermittent sedation is pointless. Such a situation could occur, for instance,

when a patient suffers from extreme pain or experiences acute shortness of breath. Precisely for this reason the authors of the palliative-sedation guideline of the Flemish Palliative Care Federation have taken the position that intermittent or light sedation should not always be tried first, while at the same time stressing the need of a stepwise approach that tries to guard the consciousness of the patient as much and as long as possible (25). In Flemish palliative-care units in practice at the onset palliative sedation is most often light or intermittent and gradually evolves to deep and/or continuous sedation. This gradual evolution is part of the average palliative-sedation process in which the administration of sedative drugs is continuously evaluated from the perspective of the patient's actual needs, during which it is often the case that symptoms aggravate as death approaches (7, 8). Therefore we do not tend to exaggerate the differences between the two clusters. It is probable that the results say more about their different interpretations of question 9 and 10 (e.g.: Were the nurses focusing on those cases they probably all know in which intermittent and/or mild sedation would not have helped?) than about fundamental differences in opinion.

In the present study, no association was found between the palliative-sedation clusters and the variables age, years of experience, gender, religion or world view. The attitudes of the nurses to deep continuous sedation seem to have been determined by other factors. Future research should attempt to determine these factors. The absence of an effect of the religious or ideological clusters on the palliative-sedation clusters may be explained by the earlier finding that influence of religion or world view on peoples' attitudes to a treatment decision in advanced disease is more likely when they are convinced that the treatment hastens death (36). In the literature, it has been attested that palliative sedation does not hasten death (37-43). Having palliative-care experience and expert knowledge the Flemish palliative-care nurses may have been convinced that palliative sedation generally has no life-shortening

effect. Therefore, no influence of religion or world view on their attitudes to palliative sedation has been observed.

Yet, in the surveys of Seale, Curlin *et al.* and Inghelbrecht *et al.* influence of religion on the attitudes of physicians and nurses to sedation was noted. Actually, the wordings of the items concerning sedation in their questionnaires may have made the religious respondents think that more was being meant than purely proportional palliative sedation. Seale asked the physicians: "Was the patient continuously and deeply sedated or kept in a coma before death?" (22). Curlin *et al.* requested their respondents to indicate whether they objected to "sedation to unconsciousness in dying patients" (23). Inghelbrecht *et al.* defined continuous deep sedation as "bringing the patient into a coma until death" (24). Especially given the fact that in these studies not all surveyed physicians and nurses were working in palliative care, respondents may have been inclined to think that death was at least partially brought about by a disproportionate use of sedative drugs or any other drug which caused the sedation.

Particularly survey participants without palliative-care experience may put palliative sedation on a par with hastening a patient's death and describe the practice as "(slow) euthanasia", a form of assisted suicide, or mercy killing in disguise (44-49). However, palliative sedation and euthanasia are technically very different. They are performed with different intentions (relieving refractory suffering versus terminating life), different actions (administering as much medication as needed to control refractory symptoms versus administering as much medication as needed to terminate life), and results (generally no hastening of death versus termination of life) (19).

The fact that no effect of the religious or ideological clusters on the palliative-sedation clusters was observed does not exclude the possibility that there might be an influence of religion and word view on particular aspects of palliative sedation. This is illustrated by the analyses of the nurses' reactions to the statement "According to me, palliative sedation

renders [voluntary] euthanasia superfluous". These answers were also included in a cluster analysis performed to divide the nurses in different attitudinal groups regarding euthanasia. Nurses who belonged to the cluster of the "(moderate) opponents of euthanasia" were more likely to agree with this statement (35). In a subsequent study, it was found that nurses of that cluster were more likely to be either "church-going respondents" or even "devout church-going respondents" (21). Thus, it is possible that church-going nurses are more inclined to consider palliative sedation a preferable alternative to euthanasia. This is a hypothesis that deserves further exploration in the future.

This study has some limitations. First, the data were collected before the issuing of the palliative-sedation guideline by the Flemish Palliative Care Federation in December 2010. It is unclear to what extent this guideline has altered the nurses' attitudes to palliative sedation and whether our data are representative of current attitudes. It is possible, for instance, that the guideline has boosted the nurses' confidence in the procedure of palliative sedation and has convinced even more nurses that light or intermittent sedation should not always be tried first.

Second, we did not assess whether the nurses had any problems with the administration of palliative sedation in the case of refractory psycho-emotional suffering. Palliative sedation is also administered to control refractory non-physical suffering, such as extreme anxiety or existential distress (50). Muller-Bush *et al.* even observed that from 1995 to 2002 the main indication for palliative sedation had shifted from refractory physical symptoms to psychological distress (51). Yet, this does not mean the use of palliative sedation to control psycho-emotional distress is seen as unproblematic by all caregivers involved. Qualitative research has shown that nurses consider the use of palliative sedation in such a context problematic because non-physical suffering is difficult to assess (14, 15). Unfortunately, this issue could not be dealt with in the present questionnaire. The questionnaire which was sent to the nurses was very long. Besides demographic questions and

items enquiring about the nurses' religion and world view, the respondents were requested to indicate their opinion regarding 69 statements about treatment decisions in advanced disease. The length of the questionnaire implied that several issues regarding these treatment decisions could not be dealt with.

Third, we did not assess whether palliative sedation hastens death according to the nurses. The fact that palliative sedation is sometimes labelled slow euthanasia could have been an argument to include items regarding the death-hastening effect of palliative sedation in the questionnaire. However, in earlier studies acceptance of the life-shortening effect of palliative sedation did not make palliative-care nurses disapprove of palliative sedation (14, 52).

Conclusion

The Flemish palliative-care nurses are of the opinion that palliative sedation can be given to control refractory suffering in patients at the very end of their life. Although voluntary euthanasia is allowed in Belgium, and euthanasia may in many cases seem like an easier way out of the suffering, the nurses do not consider euthanasia preferable to palliative sedation. Yet, neither do they think palliative sedation renders voluntary euthanasia superfluous. The most obvious differences in the nurses' attitudes were to be found in their opinions regarding the necessity of mild and intermittent sedation before the administration of deep and continuous sedation respectively. While a majority of the nurses advocated that deep or continuous sedation could be administered without trying mild or intermittent sedation first, other nurses were more inclined to restrict the application of deep and continuous sedation. These differences notwithstanding, in general the attitudes of the nurses are in accordance with the practice and policy of palliative sedation in Flemish palliative-care units.

Conflict of Interest Statement

The Authors declare that there is no conflict of interest.

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