CHAPTER 8
General Discussion and conclusions

The overall aim of this thesis was twofold. First, to assess whether the RDMA guideline for palliative sedation in the Netherlands is being followed, and secondly to evaluate the possibility of clinical monitoring of the depth of palliative sedation by palliative care nurses. This final chapter evaluates the main findings of previous chapters in relation to other studies and the guideline and gives suggestions for further research.

8.1 Practice of palliative sedation in concurrence with the RDMA guideline?

Respondents from our retrospective studies described a practice largely in accordance with the RDMA guideline. Overall they felt that palliative sedation was mainly used for severely suffering in the dying phase. Although the decisive indications were in most cases severe physical symptoms, non-physical symptoms did contribute to some extent to the clinical picture. In the majority of the cases, patients and relatives were involved in the decision-making. The respondents indicated in almost all cases that the patients' symptoms were adequately relieved by the use sedation, that the relatives were satisfied with the course of sedation and that the quality of dying of the patient was good.

These findings confirms that pain, dyspnoea and delirium are the most frequently mentioned symptoms, a result that has been described in previous research.[1,2] In addition to these symptoms, it is noteworthy that physical exhaustion was mentioned frequently to be an important indication, especially when the respondents mentioned more than one decisive indication. This can be explained by the fact that fatigue was most frequently mentioned by the respondents to be a symptom before the start of the sedation. It is known that fatigue has physical, mental and motivational aspects and has a high prevalence in advanced cancer patients.[3] Furthermore results from previous studies showed that fatigue had a large impact on patients' quality of life and emphasized that it is often difficult to treat.[4-6] Our findings may suggest that along with the three symptoms mentioned earlier, fatigue can become refractory to treatment, and thus become an indication for palliative sedation.

8.2 Different experiences of the practice of palliative sedation

Results from our studies showed that nurses have different experiences with respect to the decision-making of palliative sedation in comparison with physicians. Less often they did mention the possibility of the use of continuous sedation first. More often nurses thought that patients and families were involved in the decision-making rather than merely informed, less often felt pressured by patients and relatives to carry out continuous sedation, more often thought that the intention of the sedation was to hasten the patient's death, and less often mentioned that a physician was present at the start of the sedation.

So how should those differences be interpreted? It could well be that these differences are related to the different roles that physicians and nurses have in the practice of continuous sedation. Nurses usually have more daily contact with the patient and the family and are responsible for daily nursing activities, which might explain why nurses more frequently report than physicians mentioned that they or the patient bring up the possibility of the use of continuous sedation first, and more frequently indicated that the patient and the relatives were involved in the decision-making rather than merely informed. It might also explain

why nurses compared to physicians more often reported pain as the most important reason for the start of sedation and why they more frequently reported about patients' feelings of anxiety: during daily care, pain and anxiety might be better recognizable. Physicians on the other hand are in the end responsible for the medical decision-making.

Whereas the medical domain of the physicians deals with disease or medical condition, a nursing domain more often deals with human response to actual or potential health problems and life processes. In chapter three the MTA nurses[7] experienced that tasks they had performed border between these two domains. A substantial number of MTA nurses in the study reported to take independent decisions concerning the dosage of medication. Although most of the times the GP was available if necessary, this does raises questions with respect to the nurses' responsibilities and juridical protection within the scope of palliative sedation. The fact that some respondents reported that there were no arrangements made regarding informing one and another on the sedation policy, and moreover some felt insufficiently informed by the GP, shows that improvements could be made in this area. In line with the North American Nursing Diagnosis Association (NANDA) approach),[8] nurses should address the physicians on their shared responsibility with regard to coordination of and consistent reporting about the sedation process, as part of their nursing responsibilities. This would make it necessary for nurses to be adequately informed with regard to aspects concerning decision-making about palliative sedation in order to serve as an extra control for fulfilment of key criteria for administration of palliative sedation.

Lastly, nurses often participate at a later stage in the care process than physicians. Physicians are usually involved from the (diagnostic) start on, whereas nurses are usually involved from the moment that patients need assistance with daily care or (medical) treatment. This may explain why nurses associate palliative sedation more frequently with the intention of hastening death. It is documented that most illnesses follow typical trajectories. It is possible that nurses cannot always take stock of the illness trajectory at the moment they enter the care process. So the decision to start palliative sedation could come up rather unexpectedly for some nurses in situations where, fitting in with advance care planning, physicians may have informed patients and relatives earlier in the care process about continuous sedation.

8.3 A favourable outcome for patients during palliative sedation

One could argue that from a caretakers point of view a favourable course of palliative sedation is achieved if there is an adequate alleviation of symptoms and absence of adverse events. In essence this means ensuring that the last days in a patients' life proceed uneventful and with a good quality of life.

The results from chapter four indicate that a favourable outcome of palliative sedation tends to be associated with a (relatively) short time to reach the required depth of sedation. In addition a clear primary indication and a stable course of benzodiazepines and opioids seems to be more prevalent amongst patients that had a favourable course, which may suggest that these cases tend to be more 'straight forward'.

Patients that were being sedated lighter on the other hand, as reflected in the ability to take food and fluids after the start of sedation in the nurses' sample, tend to be associated with a less favourable course of sedation. It is possible that the respondent misclassified the type of sedation in their cases (e.g. receiving intermittent sedation instead of continuous sedation), but it is remarkable that we found a higher frequency of patients being able to take fluids or food - which should be refrained from according to the RDMA guidelines[9] - during the course of sedation in the group with a less favourable course of the nurses' sample.

It remains subject of future study to determine the actual clinical value of these indications, but in the meantime these findings may provide the clinician with a perspective with regard to the probable outcome.

8.4 Proportionality of palliative sedation

8.4.1 Reviewing the literature

In order to ascertain that palliative sedation is performed in a proportional manner, it is strongly advised to perform interim evaluations (e.g. adequate monitoring) and other decision-making processes with the focus on relieving the patient's suffering by maintaining or adjusting the doses and/or type of medication in order to create a tranquil and tolerable situation. In the review described in chapter 6 we found a limited amount of studies reporting on any form of monitoring during palliative sedation. Mostly, the authors mentioned monitoring refractory symptoms (pain, fatigue or delirium) or the level of awareness to control the level of sedation. A minority of the studies reported the use of observational scales to monitor the effect of palliative sedation. Within the studies it is generally agreed upon that the quality of palliative sedation will improve when adequate monitoring of the effect is performed,[9-11] yet actual assessment of parameters of the effect is limited. In its turn this will make it rather difficult to monitor the course in an objective and uniform manner. This is remarkable as good management of symptoms in the terminal phase is one of the main concerns of patients and their families and should be the major aim of the sedation.

8.4.2 Nurses views on depth of sedation

The majority of the nurses we have interviewed define palliative sedation as deep sedation, but when it comes down to the actual goal of palliative sedation they differed in their opinions. Moreover they show differing opinion on the required depth of sedation that is sufficient to reach this deeper form of sedation. This lack in uniformity could lead to different amounts of sedation given to patients.

Many nurses find it unacceptable for a patient to respond to stimuli, or wake up during palliative sedation and a substantial group of these nurses consider the deep form of sedation as the most important goal for palliative sedation. This feeling could well influence the depth of sedation because these nurses could be more inclined to propose extra sedation to prevent these events from occurring.

On the other hand there is a group of nurses that consider symptom relief as the most important goal, especially when considering the value of maintaining consciousness for a patient. This could well be explained by the fact that physicians in general make the decision

on the depth of sedation,[12] but also by the fact that the nurses usually feel responsible for the comfort of the patient during the sedation process.

The nurses that do consider a more superficial form sedation for the palliative sedation mentioned that few patients prefer this type of sedation. Considering the fact that earlier studies showed that the wish for palliative sedation is often mentioned first to nurses by patients or relatives,[13] this raises the question if these views could influence the content of information given to patients or family when discussing options for relief.

8.4.3 Actual assessment of the depth of sedation during palliate sedation

In this thesis we put a focus on assessing the depth of sedation during palliative sedation. The scales evaluated in our prospective study were constructed in the intensive care unit and may differ or hypothetical ground from those in palliative sedation (i.e. compliance with mechanical ventilation and tracheal stimulation). Therefore, assessing sedation with an observer-based scale should be directed to only one construct (that is the level of consciousness (light through deep)). Our results suggest that the use of RASS and/or KNMG scales can provide a measurable estimate of the level of consciousness in palliative sedation.

None withstanding these results it remains equally important to find suitable scales that can aid in assessing the refractory symptoms during palliative sedation. If we take into account the most frequently mentioned symptoms pain, dyspnoea and delirium[9] the next step would be to find suitable scales assessing these symptoms and validate them in a palliative setting.

For monitoring pain we feel that adapting the Pain Assessment in Advanced Dementia (PAINAD) scale as developed by Lane et al. & Warder et al.[14,15] is warranted. Being an observatory tool used on older patients with difficulties expressing themselves there are several agreements with a palliative setting that make it well worth the effort to make it suitable for a palliative setting.

Recently an American study held by Campbell et al[16, 17] reported on the Respiratory Distress Observation Scale (RDOS), a scale used on patients in a PCU who were unable to self report dyspnoea. The first results depict a clinical utility to measure and trend respiratory distress and response to treatment. Moreover it looks like it is sensitive to detect changes over time and measure response to treatment.

Due to the complex nature of a delirium[18] finding a suitable scale that can be used to diagnose this symptom is precarious. Researchers from a Dutch study[19] evaluating the Delirium Observation Screening (DOS) Scale,[20] showed that this observational scale was able to measure severity of delirium. However their results were taken on a sample from hospitalized elderly mostly with fractures, so it is somewhat limited in its agreement with a palliative setting. Future studies should try to adapt this scale and develop it into a more suitable scale tailored to the palliative setting.

8.5 Limitations of the studies

For this thesis data was collected using three different types of studies: two surveys (amongst MTA nurses and amongst physicians and nurses), interviews with nurses and observational data of sedation depth during sedation. However, some limitations have to be discussed in the context of this thesis.

Despite great efforts the response rates from the questionnaire study describe in *chapter 2* and *4* were moderate. A phenomena that is reported more often in comparable studies in the field of end-of life care.[21] As with most retrospective questionnaire studies, recall bias might be a problem. We have tried to minimize the risk of recall bias by asking the respondents about their last patient receiving palliative sedation, which in general was a patient who had died less than one year before the questionnaire was filled out.

Both the survey studies were conducted nationwide and included data that can be considered to be representative for the Dutch population. Nevertheless some drawbacks in the samples amongst the nurses should be taken into account.
Firstly, due to the complex organization of the Dutch Nursing Association we could not use a random sample in the nursing population. We therefore manually selected several wards in different settings with a request to participate, hereby minimizing the risk of emphasizing perspectives from a small subgroup. Secondly, we noticed the response in the survey held amongst MTA nurses was not distributed equally over the regions in the Netherlands, suggesting some caution in generalizing these results. Finally, using an online questionnaire held amongst MTA nurses it was not possible to perform a non-response analysis, so some bias may be possible amongst the respondents that did fill in the survey.

Qualitative data analysis like the interview study described in *chapter 5* has the possible disadvantage of a biased interpretation of the researcher of the contents of the interviews. It is also known that respondents are prone to give socially acceptable answers. In order to minimize this risk as much as possible we have assured a strict anonymity of the respondents and trained all of the interviewers to ensure a uniform way of collecting data.

As with every systematic literature analysis, the review describe in *chapter 6* is inclined to selection bias and interpretation bias. A sensitive search was performed, using broadly defined search criteria, it is possible that relevant articles have been missed. Considering the designs of the included studies in the review, none of the articles exceeded a level three strength of evidence as defined by Jadad et al.[22] However, limiting the inclusion to studies of good methodological quality would have provided insufficient information to meet the goal of this study.

In the prospective study describe in *chapter 7*, raters were able to perform more than one assessment per patient, which could increase the estimates in the analysis of concurrent validity. However, 52 different nurses were involved in this study, and they performed a maximum of 5 assessments per patient per day. Second, the time within paired assessments was larger than the predefined one-hour interval at 16 time points. As this could influence

the responsiveness of the inter-rater reliability analyses, sub-samples of paired assessments with a time difference less than 1 hour were evaluated (60 respectively 15 minutes). We acknowledge that there is no strong evidence to support that monitoring palliative sedation with sedation scales results in better symptom control or patient comfort or more proportional administration of palliative sedation. For this to be the case, assessment of symptom burden should be performed alongside assessment of consciousness level. This is supported by several authors whom agreed that monitoring palliative sedation is important for both guiding the proportionality and for the appropriate documentation of the procedure in medical and nursing files.[23-26]

8.6 Implications and relevance for policy and practice

Proper performance of palliative sedation is of increasing importance. With increase of age, the need for palliative care and with it the need for qualitative end of life treatment and care, the number of patients requiring palliative sedation is estimated to increase over the coming decades. The quality of palliative care and therefore the quality of the final phases of life will be helped by further qualitative improvement of symptom relief by proper performance of palliative sedation.

In general, both physicians and nurses evaluated the effect of palliative sedation positively in most cases regarding adequate symptom control by the sedation, satisfied relatives and the patients' quality of dying. If formulating an adequate treatment policy for palliative sedation, it is important that physicians and nurses communicate as timely and clearly as possible about relevant aspects of clinical situation. Combining their perspectives and expertise could eventually enhance the decision-making, resulting into a more comprehensive clinical picture.

By validating scales scoring the depth of sedation for a palliative setting we have taken the first steps to help ensure an objective tool that may help increase the comfort of the patient during palliative sedation. Although we realize that scoring depth of sedation alone is insufficient to guarantee this comfort, it will provide an easy handheld tool that can be used quickly in lower care settings (e.g home based) where monitoring often is restricted to regular visit of health care workers.

8.7 Suggestions for further research

In accordance with the team approach in palliative care as stated by the WHO,[27] it would be recommendable to take on board perspectives from the relatives when reviewing the practice of palliative sedation. Especially in a home-based setting relatives may play a significant role during the consideration and initiation of palliative sedation. Information, explanation, cooperation and evaluation with the patient's family are essential if the palliative sedation is to work to good advantage and those involved will have a meaningful farewell. Consequently, a proper use of palliative sedation could improve the quality of life of the loved ones by preventing them a painful experience of palliative sedation not properly performed.

Up till now there is no strong evidence to support that monitoring palliative sedation with sedation scales results in better symptom control or patient comfort or more proportional administration of palliative sedation. For this to be the case, assessment of symptom burden should be performed along with assessment of consciousness level. Therefore we suggest further preferably prospective research should be focused on evaluating the impact of sedation scales and (observational) instruments to assess symptom burden in achieving better symptom control and patient comfort and to guide the proportionality of palliative sedation.

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