



Research by McPherson and Addington-Hall¹⁰ demonstrated that informal caregivers are a valuable source of information concerning patients' anxiety because they know the patients' character and preferences before they became ill. Informal caregivers may play an important role in clarifying preferences and needs of the patient to realize suitable support,¹¹ especially in the final weeks of life since patients often are too frail to communicate about their concerns.¹⁰ Very few studies have been published about the experiences of informal caregivers of patients with advanced cancer with anxiety and about their role in the recognition and treatment of those patients.

The aim of this study was to explore anxiety in patients with advanced cancer during end of life from the perspective of their informal caregivers to facilitate the development of interventions which adequately support anxious patients with advanced cancer to maintain the quality of their remaining life.

METHODS

Design

We performed a prospective, explorative qualitative interview study using framework analysis.¹²

Sampling and Recruitment

Informal caregivers of patients having advanced cancer, irrespective of type, admitted to a single hospice in the Netherlands with a life expectancy of less than 3 months were eligible. Patients had to be alive at the time of the interview to avoid recall bias. Informal caregivers were defined as "persons who are close to the patient according to the patient, regardless of whether they are spouses, relatives, adult children or friends." Patients were asked to identify their informal caregivers during the intake at admission. Participants were included if older than 18 years and able to communicate in Dutch. Consecutive sampling was applied, meaning that all identified informal caregivers present at admission were asked to participate in the study, irrespective of whether the patient was assessed to be anxious or not. Sampling continued until code saturation, meaning no additional issues were identified and the codebook began to stabilize.¹³ Verbal and written information was provided by hospice nurses concerning the content, goal, and design of the study, expectations in case of participation and information concerning confidentiality of data, voluntary participation, and aftercare. The interviewer (J.M.D.) scheduled an appointment after agreement for participation.

Ethical Aspects

This study was approved by the medical ethical board of the University Medical Centre Utrecht and determined to be outside the scope of the Medical Research

Involving Human subjects Act (protocol number 16-805/C, December 28, 2016). The study was executed according to the principles of the Declaration of Helsinki and the Guidelines of Good Clinical Practice.^{14,15} The handling of data complied with the Dutch Personal Data Protection Act. Before the interview, written informed consent was obtained from all participants.

Data Collection

Semistructured, face-to-face interviews with informal caregivers were conducted by a trained qualitative interviewer (J.M.D.) (January 2017-July 2017). During the interviews, the patient was not present to prevent influencing the response of the informal caregiver. The interviewer had no professional relationship with the participants. The interview guide (Table 1) was developed based on clinical expertise (J.M.D., D.Z., S.C.C.M.T., and M.C.K.) and literature.^{3,9,10} The 5 interview topics were presence and severity of anxiety, expressions, sources, impact, and needs of patients, as experienced by their informal caregivers. The severity of the patient's anxiety was scored on a 0 to 10 numeric scale (0, no anxiety, to 10, extreme anxiety). Two pilot interviews, also included in the final analysis, were conducted to test the interview guide and to reflect on the interview style. Minor changes were made in the interview guide to clarify some questions. Informal caregivers' age, sex, relationship with the patient, and level of participation in daily care were collected before the interview. Interviews were audio-recorded and transcribed verbatim and field notes were made directly afterward. The interviews and analysis were conducted in Dutch. The translation was performed by the authors and checked by a translation agency.

Analysis

The 5 main interview topics were the starting point of the analysis and formed the themes for the preconceived framework in which relevant coded fragments were placed. The transcripts were independently coded and placed into the framework by 2 researchers (J.M.D. and D.Z.). Discrepancies were discussed until consensus was reached. During this process, 1 theme (influencing factors) was added. Some of the themes were divided in subthemes. Nvivo (v11, QRS International) was used to structure and analyze data.

RESULTS

Of the invited eligible informal caregivers of 20 patients, 14 informal caregivers of 12 patients agreed to participate. Two informal caregivers could not be interviewed because the patient had passed away before the scheduled interview. Six informal caregivers did not participate because they felt burdened to be interviewed. Twelve interviews were conducted, including 2 interviews with 2 informal

**TABLE 1** Interview Guide

Topic	Topic Questions
Introduction	– General introduction – Anxiety is common in patients with an incurable disease, but not always recognized, talked about, or acted upon. To make sure we are on the same page with regard to the concept of anxiety, what do you see as anxiety?
Presence	Can you tell me if you experience or experienced anxiety in the patient?
Sources	What do you think is the source of the patient's anxiety?
Signal	How do you know/feel that the patient is feeling anxious?
Severity	How frequently do you experience anxiety in the patient? To what extent do you think the patient is feeling anxious? (per day/week, continuously, or ups and downs) How severe/intense would you describe the patients' anxiety? (mild-moderate-severe/1–10)
Influencing factors	Which are factors or influence patients' anxiety?
Impact	Which consequences does this anxiety have for the patient? What consequences does the anxiety of the patient have for you as an informal caregiver?
Needs	What do you think the patient needs to prevent/reduce/stabilize his anxiety?
Conclusion	Reflection on the interview Express appreciation
Field notes	<i>Make notes directly after the interview took place (atmosphere, how was the interview, what was the role of the researcher, surroundings, striking expressions, remarkable findings etc.)</i>

caregivers. The interviews took place in the hospice, except for 2 interviews that were at the informal caregiver's workplace and home, respectively. Demographic characteristics are depicted in Table 2. Median age was 55.5 years, and 64% were women. Most informal caregivers were children (n = 7) or spouse (n = 3) (57%) and were in contact with the patient daily or several times a day. The mean duration of the interviews was 43 minutes (range, 25-60 minutes). After 10 interviews, code saturation was reached. Two more interviews were conducted to confirm code saturation.

Presence and Severity of Anxiety

Almost all informal caregivers indicated that they experienced or presumed that the patient had anxiety on a daily basis, especially at late-night hours and lonely moments. Some stated that patients were accepting their death and, as a result, seemed less anxious than earlier in the disease trajectory. Informal caregivers rated the current level of the patients' anxiety at a median score of 6.5 (range, 3-8). Several informal caregivers thought that the patient protected them by expressing less anxiety than they actually experienced.

She does not want it to be obvious for me. [...], that's the other side of the story. She does not want me to worry or something like that. But no, I know it's there. (Informal caregiver 5, daughter, aged 52)

Expressions of Anxiety

Informal caregivers indicated a variety of expressions they interpreted as anxiety of the patient. Verbal expressions, literally or interpreted as such, were often mentioned.

Anxiety was also recognized through nonverbal expressions. Facial expressions and emotions like crying, irritation, or insecure behavior were named frequently. Furthermore, restlessness, hostility, avoidance and withdrawal, being absent-minded, acting harshly toward others, and not wanting to talk about sensitive topics were identified as expressions of anxiety. Small gestures such as twisting a ring on a finger, putting a hand to the forehead, or clinging to people and objects and keeping control in an extreme way, for example, over their medication, were also interpreted as expressions of anxiety. Informal caregivers indicated that they were able to identify anxiety by the expressions mentioned above as they had been involved intensively for a long time and had a close and meaningful relationship.

I am a caregiver who [...] has been involved very intensively [...]. So I can put it in the context of the whole process of the disease, which is why I can give these answers. (Informal caregiver 14, partner, aged 66)

TABLE 2 Sociodemographic Data of the Informal Caregivers (N = 14)

Age, y	Median (Range)	55.5 (33-73)
Sex, n (%)	Female	9 (64.3)
	Male	5 (35.7)
Religion, n (%)	No religion	12 (85.7)
	Catholic	2 (14.3)
Origin, n (%)	Dutch	13 (92.9)
	Eastern-European	1 (7.1)
Relationship to patient, n (%)	Spouse	3 (21.4)
	Daughter	5 (35.7)
	Son	2 (14.3)
	Brother	1 (7.1)
	Daughter-in-law	1 (7.1)
	Sister-in-law	1 (7.1)
	Friend	1 (7.1)
Living with patient before admission, n (%)	Yes	3 (21.4)
	No	11 (78.6)
Participate in daily care (at the moment of interview), n (%)	Yes	4 (28.65)
	No	10 (71.4)
Frequency of participation in daily care, if applicable, n	Multiple times a day	3
	Several times a week	1
Frequency of contact with patient (by phone, e-mail, visit, etc), n (%)	Several times a day	5 (35.7)
	Daily	3 (21.4)
	Several times a week	6 (42.9)

Sources of Anxiety

“Sources” refer to what the patients were anxious about. According to the informal caregivers, physical and mental deterioration was the most important source of anxiety in patients. Patients were anxious about deterioration in general and specifically about possible consequences of deterioration, such as choking, not being of clear mind, or not being able to say goodbye consciously.

She is worried that her physical and mental condition is getting worse...and that she will not be able to recognize us anymore; that is what she is anxious about. (Informal caregiver 7, daughter, aged 34)

According to informal caregivers, these kinds of anxieties were often based on or reinforced by negative experiences in the past.

Informal caregivers specified that patients felt anxious about losing control over their body and mind, being dependent on others, and losing dignity. According to the informal caregivers, the internal values of some patients shifted as the disease progressed, and as a result, they accepted their death. For these patients, anxiety diminished as they came closer to their death.

Informal caregivers observed patients worrying about what would happen and how they were going to die.

I think [...] she worries about ‘what if my body declines?’ and ‘what if I am in a lot of pain?’ or ‘what if I do not know who you are anymore?’ [...]. These are things that she finds terrible. (Informal caregiver 7, daughter, aged 34)

Informal caregivers noted that patients were anxious about end-of-life decisions and the family's acceptance of decision(s) made by the patient. Finally, 4 informal caregivers indicated that patients were anxious of letting go of their family members and did not want to leave them in grief.

Factors Influencing Anxiety

Informal caregivers indicated that mental deterioration could influence anxiety either in a positive or in a negative way. For example, an informal caregiver specified that the patient was probably less anxious because of brain metastases, which caused a flattening of emotions and resignation. Another informal caregiver felt that the patients' anxiety increased, owing to feeling drowsy after medication. Anxiety triggered by the unknown course of the disease or the overall uncertainty were also frequently mentioned.

She is not afraid to die [...] but she is afraid of the unknown. (Informal caregiver 2, daughter, aged 50)

Impact of Anxiety

Informal caregivers expressed that anxiety had an impact on all dimensions of patients' lives. They mentioned a physical impact such as sleeping problems, a psychological impact such as difficulty in controlling thoughts, and a spiritual impact such as struggling in saying goodbye. A social impact was mentioned as well, because patients' hostile or avoiding behavior had led to irritations in their relationship.

Yeah, well, you try to do your best, but you cannot always take that tension away and I find it very difficult when she is so tense. And then, when I go home and that tension stays—that is not a pleasant feeling. Informal caregiver 2, daughter, aged 50

Although it was not the focus of this study, informal caregivers emphasized the impact of the anxiety of the



patient on their own life, particularly the psychological and social dimensions. They found it hard to see the patients' anxiety and felt powerless because they could not take away the suffering. Some informal caregivers felt that they were expected to be available for 24 hours a day and hence their own lives were put on hold. The impact mainly relied on the severity of the anxiety.

Needs

Several needs of patients were identified by the informal caregivers. Some could be summarized as the need for a safe environment. First, in particular, informal caregivers claimed that the competencies and attitude of health care professionals were important, such as being familiar with the personal care plan and providing adequate and honest information. Second, the presence of people around the patient was identified as a precondition to feel safe. Third, the importance of tailored care based on the preferences and specific needs of the patient was acknowledged.

It has to be a very safe environment if you want to relieve that anxiety. (Informal caregiver 11, brother, aged 73)

The influence of the hospice atmosphere on anxiety in the patient was also mentioned. The green surroundings decreased anxiety, as did the pleasant and home-like atmosphere and the company of others. On the other hand, some informal caregivers indicated that being confronted with the death of other patients increased anxiety.

Respecting and facilitating coping strategies of the patient to prevent or alleviate anxiety were also mentioned. Distraction, for example, by watching TV and relaxation, for example, by massage, were strategies for controlling anxiety that were listed by all informal caregivers. Talking with patients not only about anxiety but also about the normal things in life was important according to many informal caregivers. Several informal caregivers pointed out that professionals had to initiate a dialogue about anxiety because patients did not do this by themselves. As mentioned, having control over daily life, body, and mind is important to cope with anxiety.

Informal caregivers discussed the patients' character in relation with how they coped with anxiety. It was also indicated that the needs regarding anxiety management depend on the personal coping strategies. Age and generation were also mentioned as influencing anxiety-related needs. Some informal caregivers stated that older patients were poorly practiced in talking about emotions like anxiety.

DISCUSSION

This is the first prospective study exploring anxiety in cancer patients facing death from the perspective of their informal caregivers.

Informal caregivers stated that anxiety was not continuously experienced by the patient. When present, it was judged as moderate to severe. This is in line with the study of Kozlov et al,¹⁶ where 47% of the caregivers of patients receiving hospice care at home scored their anxiety as 4 or higher on the Edmonton Symptom Assessment Scale. However, these caregivers were asked to retrospectively fill out the Edmonton Symptom Assessment Scale 2 to 3 weeks after the patient died. Informal caregivers identified a negative impact of anxiety on the physical, psychological, social, and spiritual dimensions of the patient and indicated a variety of verbal and nonverbal expressions of anxiety. They identified physical and mental deterioration as the most important sources of anxiety. A safe environment, the presence of loved ones and professionals, tailored care, respecting and facilitating coping strategies, talking about anxieties, and having control were identified as patients' needs regarding anxiety management.

Informal caregivers identified a broad range of sources of anxiety. Anxiety about deterioration or anxiety about the unknown was mentioned by most. This was in line with the study of Zwakman et al.¹⁷ They reported the same worries and fears in a population of advanced cancer patients who were receiving systemic and/or radiotherapy treatment with palliative intent. In the current study, only 4 of 14 informal caregivers described letting go of informal caregivers as a source of anxiety. An explanation for this could be that the topic of letting go of loved ones and daily life was too sensitive to discuss for both patient and informal caregiver. It could be a way of self-protection of either the informal caregiver or by the patient. Furthermore, cultural aspects and stage of disease could be reasons as well why separation was not a common issue for these interviewed informal caregivers.

Informal caregivers were able to identify specific expressions of anxiety, such as small gestures and hostile behavior, which are also found among bereaved informal caregivers.¹⁰ However, these expressions were not found in studies from the patient or health care professional perspective.² This suggests that informal caregivers have a unique perspective on anxiety, based on understanding of the patients' character, coping strategies, and possibly negative experiences in the past. This ability is helpful in identifying and understanding anxiety.¹⁰ A prerequisite of having this foreknowledge is a close and meaningful relationship with the informal caregiver during the disease process. Some physical expressions of anxiety such as pain and palpitations identified by patients were not mentioned by the informal caregivers.⁸ Probably, these were not recognized as expressions of anxiety.

As expected, the informal caregivers indicated that anxiety had an impact on all dimensions of the patients' life. Problems in the social domain were mentioned as the most impeding from the perspective of the informal caregivers,



probably because the informal caregiver is part of the social system. The anxiety of the patient also had an impact on the life of the informal caregivers. This was also found in the study of Kozlov et al.¹⁶ They reported that anxiety of the patients who received hospice care at home was associated significantly with a higher caregiver burden.

Informal caregivers stated that health care professionals should initiate a dialogue about anxiety if patients do not do this on their own. Respecting and facilitating coping strategies were mentioned as important needs, also when this includes avoiding behavior. Furthermore, being aware of patients' lack of control and searching for ways where the patient has a sense of control should be helpful, from the perspective of the informal caregiver. Overall, anxiety management should be tailored to the needs of the patient, which is recognized in the literature as well.⁶

Interpreting the results of the study, 3 new themes arise: protection, control, and safety. Protection was present in 2 ways: protection of the informal caregiver by the patient and the other way around. The behaviors of hostility, withdrawal, and avoidance of patients with anxiety may be viewed as a form of self-protection and thus as a coping strategy in a fear-avoidance cycle, as discussed by Traeger et al.⁶ Protection of the informal caregiver by the patient may influence the perception of informal caregivers concerning anxiety in patients. However, previous research has shown that informal caregivers bear this in mind and use their foreknowledge to judge anxiety in patients.¹⁰ Protection enables control, which emerged as an important theme in the analysis of the interviews of the informal caregivers. Subsequently, control enables safety, which emerged as an important need. Protection and feelings of control and safety will increase the capacity of patients to deal with anxiety. Care for anxious patients should be aimed to assist them in this process. Additional research is needed to check these assumptions.

Strengths and Limitations

This study shows that informal caregivers are able to identify and understand expressions of anxiety and can place them in the broader context of the patient. These findings are important in developing tailored interventions regarding anxiety management.

Although anxiety is a sensitive topic, especially for informal caregivers facing the imminent loss of their dearest, it was possible to perform a qualitative study in the hospice setting. Some participants discussed anxiety with the patient, to prepare for the interview, which was for some the first time to talk about anxiety. This may have influenced the results. The results were not validated by the patient.

Data saturation is likely to have been reached, and meaning saturation has been reached concerning the main topics. This study includes informal caregivers with diversity in relationships and a wide range in age. The impact of age and

culture was not explored, which could have an influence on the transferability of the findings.

Our literature review identified few relevant studies and many were published more than 5 years ago. Despite this, in our opinion, the body of knowledge derived from these studies justified a framework analysis to gain insight into the perspectives of informal caregivers concerning anxiety in patients with advanced cancer.

Conclusion and Recommendations

This study highlights the importance of the perspective of informal caregivers in the recognition of and support regarding anxiety in hospice inpatients with cancer. Therefore, informal caregivers should be involved in the care for anxious patients. Although informal caregivers can add valuable information, it remains uncertain if their perspective matches the patients' perspectives. Ultimately, the patients' experiences remains the gold standard.

This study provides insight into the anxiety of patients from the perspective of their informal caregivers. This contributes to the development of interventions regarding anxiety in advanced cancer patients in the last phase of life. Supportive interventions should focus on creating a safe environment, preserving the patients' control and autonomy, initiating conversations regarding anxiety actively, and respecting and facilitating coping strategies of patients. Because safety, control, autonomy, and coping are different for each individual patient, interventions should be tailored to the specific needs of the patient. Given the impact of anxiety on patients and informal caregivers, interventions should be aimed at both patients and informal caregivers to improve quality of life and dying, especially since anxiety of the patient is associated with a higher caregiver burden. Future research should focus on the influence of age and culture on anxiety. In addition, more research is needed about informal caregivers' own level of anxiety and how this is related to their perception of patients' anxiety. Comparing the perceptions of anxiety of patients and informal caregivers will help to explore the interaction and the meaning of the concept's protection, control, and safety in patients with advanced cancer.

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