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Differentiating frailty in older people using the Swedish ambulance service: A retrospective audit

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Abstract
The elderly population in Sweden is increasing. This will lead to an increased need for healthcare resources and put extra demands on healthcare professionals. Consequently, ambulance personnel will be faced with the challenge of meeting extra demands from increasing numbers of older people with complex and atypical clinical presentations. Therefore we highlight that great problems exist for ambulance personnel to understand and meet these patients' care needs. Using a caring science approach, we apply the patient's perspective, and the aim of this study is to identify and illuminate the conditions that affect elderly people assessed with the assessment category ''general affected health condition''. Thus, we have analyzed the characteristics belonging to this specific condition. The method is a retrospective audit, involving a qualitative content analysis of a total of 88 emergency service records. The conclusion is that by using caring science, the concept of frailty which is based on a comprehensive understanding of human life can clarify the state of ''general affected health condition'', as either illness or ill-health. This offers a new assessment category and outlines care and treatment that strengthen and support the health and wellbeing of the individual elderly person. Furthermore,

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the concept of frailty ought to be included in ''The International Statistical Classification of Diseases and Related Health Problems'' (ICD-10).

Introduction

This paper presents the first findings of a larger study within Emergency Medical Services (EMS) in Sweden with the overall aim of identifying, prioritizing and triaging older patients to an optimal level of healthcare, focusing on patient safety and wellbeing (Vicente, 2008). To be able to provide for the elderly patients' help needs, in the context of pre-hospital emergency care, we have to identify and interpret characteristics of the patient behind the assessment category ''general affected health condition''. Therefore we apply the patient's perspective based on the caring science approach defined as follow:

> 'The essential goal of caring is health. It is the aim of caring to support and strengthen the individual patient's health processes, and it is the aim of caring science to create such knowledge that renders such care possible' (Dahlberg and Segesten, 2010, p. 101).

If implemented in practice, it is hoped that the research will result in improvements in care and treatment for these vulnerable patients, who ambulance personnel have difficulties in assessing.

Background

Elderly people needing care

The elderly population is increasing in Sweden, and by the year 2060 the number of persons above the age of 65 will have increased to 56% of the population (Board of Health and Welfare, 2005). This will lead to an increased need for healthcare resources and put greater demands on healthcare professionals both in-hospital and pre-hospital. The challenges are to satisfy the patients' need for security and to provide the best possible care (Benner-Forsberg et al., 2008; Samaras et al., 2010).

In order to provide optimal care for the elderly, knowledge and understanding of age-specific disorders and confusional states are required (Aminzadeh and Dalziel, 2002; Fagerberg and Jonhagen, 2002) as well as of the aging process, all of which are specific to the individual. Consequently, it is important that the healthcare professionals create opportunities for the elderly to live a qualitatively good life despite increasing health needs (Ljungquist et al., 1995; Nygren et al., 2007).

Common to the underlying reasons why elderly people call the Emergency Medical Dispatch (EMD) Centre is that they have a feeling that something is wrong with their body, i.e. the body is not functioning normally. A person suffering from a disease may use different approaches (Jacobsen, 2000). However, the disease itself creates an experience of illness that affects everyday life, and life itself becomes limited. This can induce existential thoughts about one's own death coming closer. The older person is forced to seek help and enter into a dependency relationship with healthcare professionals. This is difficult when a person is struggling to maintain her/his freedom, autonomy and independence (Strandberg et al., 2002). Calling the EMD Centre and acknowledging one's own dependence on receiving help occurs when people no longer have control over their own situation (Ahl et al., 2005, 2006).

Caring assessment based on mutual interaction and medical guidelines

A caring relationship between the ambulance personnel and the patient is characterized by both parts being active and willing to enter into an agreement (Wireklint Sundström and Dahlberg, 2011). Therefore, it is the ambulance personnel's responsibility to allow mutual interaction and to apply medical guidelines with openness to individual nuances. If they adopt this attitude, they will perceive the patient as a unique human being and the patient will notice more than one professional role concerning the specialist ambulance nurse, the registered nurse or the paramedic. It is in such mutual interaction that the ambulance personnel come in contact with the patient's vulnerability and suffering (Holmberg and Fagerberg, 2010).

To make a caring assessment of the elderly patient, ambulance personnel not only have to assess the patient's physiological status but also to be open to the patient's lived experiences. The challenge to the ambulance personnel is not to separate the patient's body from lived experiences. Therefore, the assessment includes the whole patient, i.e. the patient's experience of the situation in relation to the clinical assessment. Gadamer, referring to Aristotle, wrote that the soul is nothing other than the body's life (Gadamer, 1996).

In a caring encounter, the patient and the healthcare professionals are dependent on both giving and receiving. Healthcare professionals are dependent on the patients to communicate their ill-health and disease manifestations, and in turn they provide good quality treatment. They must make interpretations based on patients' verbal communication, emotional status and physical presentation. On the other hand, the healthcare professional has to apply her/his power in the care situation based on knowledge and empathy, which means assuming the responsibility for both the patient and the situation. In a constructive interdependence, this power will be used to let the other person be autonomous, i.e. be able to decide over her/his own life (Strandberg et al., 2002).

However, according to Toombs (1993), there can be a difference in the understanding perspective between the ambulance personnel and patients and the distance between them can be great. To make an adequate assessment of the elderly patient is difficult, because he/she may have atypical signs and symptoms. It requires solid medical expertise, clinical experience and the assistance of the patients providing their perspective on their ill-health to

determine the patient's condition and healthcare needs (Gunnarsson and Warren Stomberg, 2009).

Furthermore, a caring assessment also includes applying national medical guidelines, with sensitivity to the fact that the patients' suffering and needs vary. These guidelines are both general and specific and may include protocols for current procedures and treatment for specific symptoms and diagnosis groups, organized in different assessment categories. There are also customized treatment strategies for younger and older patients. When the ambulance personnel identify a patient's medical condition as ''general affected health condition'', they do so because no other assessment category can possibly be applied. This means that the patient's condition and care needs are unclear and unspecific.

Against this background and from a caring science approach, the aim of this study is to identify and illuminate conditions that affect older people assessed with the assessment category ''general affected health condition''. The research question was as follows:

- What characterizes these patients' condition and care needs?

Method

The research has been carried out using the caring science approach, which has the patient in focus with the general aim of describing care that strengthens and supports health (Dahlberg and Segesten, 2010) and further, which recognises the patient's suffering (Morse, 2001) as a motivation for care. The main focus of the caring science approach is that care will be based on a comprehensive understanding of human life, i.e. the elderly patients' need for help and care. Consequently, the patient is the foremost expert on her-/himself, her/his suffering and wellbeing and further on her/his life (Dahlberg et al., 2009) and therefore the healthcare professionals have to have an openness and flexible response to patients' experiences.

In this study, we intend to describe patients' experiences based on the ambulance personnel's documentation in EMS records, i.e. the experiences that the patients have communicated in different ways. The caring scientific approach is especially important in the EMS because all pre-hospital emergency care is characterized by an acute medical perspective, primarily focusing on measurable and objective parameters (Ahl et al., 2005; Wireklint Sundström and Dahlberg, 2011).

Settings and sample

In Sweden, there are approximately 9 million inhabitants, of which 2 million live in the capital, Stockholm. The EMS in the Stockholm area has almost 139,000 patient transports per year. The study was carried out in 2006 at one of four EMS contractors in Stockholm. The selected contractor is contracted to provide EMS in the city of Stockholm, which represents 40.6% of all EMS assignments in the Stockholm area.

The EMS in Stockholm classifies its patients by using 144 identified medical conditions based on symptoms; one of these is the assessment category ''general affected health condition''. All ambulance personnel follow national medical guidelines and requirements for documentation in the EMS electronic Patient Care Record (ePCR) system.

The EMS in Sweden includes a range of different ambulance personnel such as specialist ambulance nurses, ordinary registered nurses and paramedics. Since 2005, all ambulance transports are staffed by at least one registered nurse (Suserud, 2005).

Data collection

Data was collected from a total of 1106 EMS records from year 2006 regarding all patients fulfilling the assessment category ''general affected health condition''. These records were documented by registered nurses.

A stratified randomized sampling was made. First the 1106 records were divided according to month and date. Next step was to select 10 records randomly from each month (Krippendorff, 2004; Polit and Beck, 2008). Inclusion criteria were:

- Elderly patients ($\geqslant$65 years).
- Transported by ambulance with electronic Patient Care Record (ePCR).

This randomization process generated 120 records, from which 32 were excluded because the transports were between hospitals, leaving a total of 88 records for the qualitative content analysis.

Since the documentation in EMS records should be considered as relatively poor it became the deciding factor for using method content analysis, instead of other qualitative methods that require a greater variety in the original data.

Ethical considerations

The study was approved by the Regional Ethic Committee in Stockholm, Sweden (Reg. No. 2008/1167-31).

Data analysis

A qualitative content analysis with application of Elo and Kyngäs (2008) framework was performed on the EMS records.

Inductive analysis was chosen to describe the content. To increase reliability, the text was initially analyzed independently by the first three authors (VV, BWS and ME). Continuing the analysis process, the research group discussed the findings, this being an awareness effort to keep the balance between the researchers' pre-understanding and their openness to the content. Further analysis was then performed until consensus was reached.

The analysis processes are represented as three main phases: preparation, organization and reporting. The first phase was to prepare the EMS records. The free text was examined in order to get an idea of whether the content was sufficient to constitute data for analysis. Text that was not relevant on the basis of the study purpose, such as ''Phone number to the district/primary nurse'' or ''AP-dose integrated'', was excluded. The aim was to become

immersed in the data, by reading through the free text several times.

The second phase was to organize the qualitative data, including three steps: open coding, creating categories and abstraction. The aim of the analysis was to answer the questions ''what'' and ''how'' in relation to the question, i.e. what characterizes the patients' condition and care needs?

Open coding involved making notes and creating headings in the text while reading. The headings described different aspects of the content and were collected on coding sheets. The coding resulted in a kind of new thinking regarding the content, which led to the identification of similarities and differences.

The codes were condensed and then grouped into subcategories and generic categories and further into a main category. The categories were formulated based on a caring science approach. The main category is the latent content and the most abstract understanding of the research question. Checks were made to ensure that the contents had not been corrupted or lost their central importance through abstraction, by picking up the codes in the original contexts of the EMS records.

The third phase was the conceptual map shown in Fig. 1.

Results

Two generic categories were found to underpin the condition ''general affected health condition'', initially identified as: inability to manage one's everyday life and inability to orientate oneself in time and space. The categories are presented below by their sub-categories and illustrated by quotations. These two generic categories make up the main category. Progressive weakness and increased dependence leads to overturning a controlled and functioning life.

Inability to manage one's everyday life

Elderly patients seek care because life in some way has become more difficult and everyday life becomes impossible to manage without additional support. Often it is someone else who has called the EMD Centre, e.g. relatives or primary care professionals. This means that the need for care and assistance is not always self-experienced. The generic category is illustrated by the sub-categories: age weakness, lack of nutrition, inactivity and suffering from a disease.

Age weakness

The documentation shows that age weakness indicates a person who is tired and weak and no longer manages the ordinary activities of daily living. Aging may initially be experienced as a minor problem, such as not being able to handle one's own personal hygiene. It may be described as: ''*can't cope with her personal hygiene*''. When the aging body no longer has enough strength, weakness becomes an obstacle for everyday living. In another care situation, with a very tired 85-year-old man, the ambulance personnel could not identify any underlying cause of disease or any other problem — apart from old age — to explain his feebleness. The man was described by the following summary statement: ''*Man born in 1921 feeble and weak/he is generally tired and has no strength, denies pain*''.

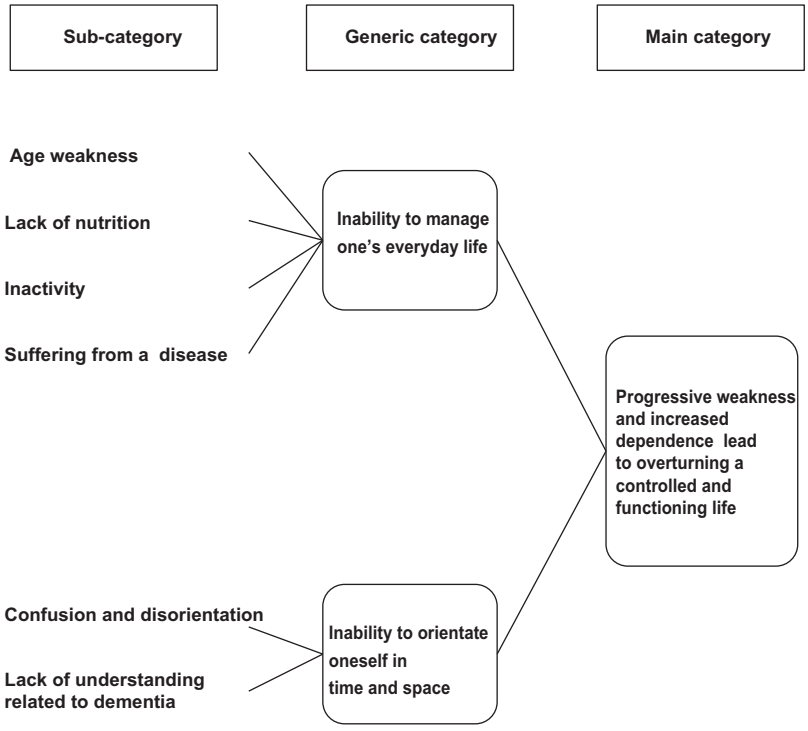

Fig. 1 Sub-categories and generic categories describing the main category based on the EMS records.

When age weakness defeats the willingness to face the challenges of daily living, the person chooses to sleep. A 78-year-old woman was described as follows:

Got help from primary care staff to get out of bed and they helped her with her morning activities, but she went to bed again because she felt fatigued. She just wanted to go to sleep again and has been in bed all day.

Lack of nutrition

The elderly person's situation has also been described in relation to eating and drinking. This is shown in the documentation that describes a 75-year-old man with lack of nutrition as follows:

Is thin, has probably not eaten for a long time, and can't cope with his food intake. Now has difficulty managing at home, has no primary care input.

A person's health condition deteriorates because of poor nutrition over a long period of time. The reasons that a person does not eat and drink vary, such as loss of appetite, nausea or refusal to drink without reason. A 101-year-old woman, who despite primary care assistance failed to ingest any food, is described as follows:

Lives in an apartment and has home care. The last few days, she has experienced nausea, pain in the diaphragm, is tired, eating and drinking poorly. According to the patient her toilet habits are normal. Has not vomited but seems a bit dehydrated.

Inactivity

One factor that has been identified is that when the body no longer has strength this leads to inactivity: ''*sleeps a lot, his legs won't support him today*''. Sometimes there is difficulty in standing without assistance. A 79-year-old man, who gets help from his wife to stand up, was described as follows:

No primary care input. He walks with a walking frame. Is tired, feeble, weak and decrepit since Thursday. His legs won't support him today. Sleeps a lot. Eats and drinks well. Has had pain for the past two days in his left elbow, denies trauma. Pain at rest, made worse by movement.

The reasons for inactivity can be many, for example pain, which is expressed as follows: ''*Can't move his legs, complaining about back pain*''. The documentation shows that the human body's inability to move leads to limited contact with the outside world. Furthermore, pain limits the possibility of movement and is detrimental for the elderly person. If the pain persists or worsens, it will increase the suffering. As an example, the following was written about an 83-year-old man who had fallen several times:

He has had problems coping alone at home for the past week, has fallen several times. Claims to have pain throughout the whole body. Is unstable, feeble and weak. Has not eaten properly. According to his granddaughter, this man refused to seek treatment.

Suffering from a disease

The documentation shows that disease can have devastating consequences for the already fragile elderly person. It can lead to their getting 'tipped over the edge' and going from being independent to being dependent on emergency assistance. This is expressed in two ways as ''*doesn't feel well, probably related to an infection*'' and ''*the chronic disease is worse*''.

Weakness can appear if the elderly person acquires an infection such as pneumonia or urinary tract infection. The feeling of illness can appear suddenly or evolve gradually over a long period of time. The disease can be experienced as a disturbance in the body and cause a feeling of threat to the whole of one's existence, i.e. suffering from a disease can cause one to experience that life itself is disappearing. This was documented by the ambulance personnel as follows:

Male born-16 living alone in an apartment has security alarm and primary care input. //Has now affected general health condition. Is coughing up blood and has increased dyspnea over the last month. Now having difficulty in taking care of himself. He walked on his own to the ambulance stretcher.

Chronic disease is incurable and usually has a slow progression. Suffering becomes more evident when the disease becomes part of a person's everyday life. Many times it means that they have to live a life filled with pain and limitations and increased suffering. This is expressed as: ''*chronic disease deterioration*''. This is when the disease takes over, when the elderly person can no longer manage their activities of daily living and must finally seek medical care. A care situation with an 81-year-old woman with chronic medical conditions exposed the following:

The whole body is stiff because of her Parkinson. Because of progression of her disease she is unable to stand upright. The husband can't help his wife anymore. Has apparently been sitting in the same place since yesterday. Leans heavily to the left.

Inability to orientate oneself in time and space

When older people experience confusion they lose their bearings in life and in their surroundings. This makes them vulnerable, when they may not understand what is best for them and may not see their own need for help. The generic category is illustrated by a sub-category: confusion and disorientation and lack of understanding related to dementia.

Confusion and disorientation

A state of confusion may appear in different ways, the older person may seem outwardly functioning one moment and then may the next moment seem totally irrational. Older people with confusion may lack the ability to care for themselves as they usually do, and this creates disorder in life and difficulties in seeing themselves in context. This may cause an inability to help themselves, forcing them into unintentional isolation. In a care situation with an 89-year-old woman with home care, the documentation shows the following:

Can't take care of herself at home. Is confused and eats poorly. Dizziness. Misunderstanding with primary care personnel, they haven't visited her daily, as they should have done.

Relatives or carers of the confused person play a very important role and function in supporting the person's needs. Their task is to reduce disorder but also to create order in the disorientated person's daily life. A woman aged 96, who had fallen during the night revealed the following:

Primary care personnel explain that she is very confused, more than before. The patient walks with support to the ambulance stretcher, complaining about stiffness in the lower back, but declares that she has had it previously. Otherwise, very confused, not orientated. No signs of brain damage from the fall.

Lack of understanding related to dementia

Persons suffering from dementia often have difficulty in seeing their own need for help, and they remain helpless and vulnerable. They consistently do not fight for their own existence. They also lose the capacity to maintain the most basic functions of life, such as eating and drinking. The sensation of hunger is experienced, but the patient with dementia does not know how or what they must do to satisfy their hunger. When an 84-year-old woman was treated, the following was written:

Has dementia. Has become worse in her general condition. Has not been eating or drinking these last few days. The patient sits on the bed and looks around and doesn't answer any questions.

Progressive weakness and increased dependence lead to overturning a controlled and functioning life

Ill-health and disease put the elderly person in changing life situations, which are characterized by the fact that earlier levels of support are not sufficient anymore in relation to new care needs. Growing weakness and frailty can limit daily living because the person's self-care becomes inadequate, and this in turn leads to increased dependence. The condition becomes unmanageable and at worst it can threaten life itself. This causes chaos and overturns a controlled and functioning life. The person with progressive weakness and with increased dependency has to adapt to new circumstances and find new ways to access life.

Discussion

Methodological considerations and limitations

The data was gathered from the ePCR. This selection offers the major benefit of a large volume of original data, which is the basis for variation in the following qualitative analysis (Krippendorff, 2004). The first author, who selected the EMS records, works as an ambulance nurse and is experienced in collecting data from the ePCR.

In spite of this, we must be aware that it is a challenge to capture the patients' condition from a caring science perspective because the data relies on the ambulance personnel's abilities to understand and interpret the patients' conditions. Furthermore, since this documentation in EMS records should be considered as relatively poor, these circumstances can be seen as limitations to the study's design.

Discussion of the findings

This study found from a caring science approach, that the characteristics of the ''general affected health condition'' can be understood as referring to a patient with frailty. Since the patient's condition and care needs are unclear and unspecific, the concept of frailty could clarify the characteristics which typify this specific condition and therefore be of great help for ambulance personnel to understand and meet the patient's need of care. These findings open up for a nuanced picture of elderly people and their needs for prehospital emergency care, further treatment and rehabilitation to the optimal level of healthcare.

There are a number of conceptual and operational definitions of frailty (Bortz, 2010, 2002; Campbell and Buchner, 1997; Fried et al., 2004, 2001; Gobbens et al., 2010; Lally and Crome, 2007; Winograd et al., 1991). Gobbens et al. (2009, p. 85) define frailty as follow:

'Frailty is a dynamic state affecting an individual who experiences losses in one or more domains of human functioning (physical, psychological, social) that are caused by the influence of a range of variables and which increase the risk of adverse outcomes.'

These elderly patients are high consumers of healthcare and are in great need of help. Aminzadeh and Dalziel (2002) noted that 33—55% of patients 65 years and older arrive at the ED by ambulance and the equivalent figures for Stockholm, Sweden, are 53% (Vicente, 2008). Consequently, and based on the present results, we emphasize that many older patients in need of EMS probably suffer from frailty and thus must be treated and cared for in relation to weakened/impaired health. We also underline that this result does not imply that all elderly people suffer from frailty. Nevertheless, frailty is a common condition among the elderly population (Morley et al., 2006). They argue that frailty is a complex condition not included in ''The International Statistical Classification of Diseases and Related Health Problems'' (ICD-10). Furthermore, frailty is not a diagnosis; it is more of a clinical concept.

According to Lally and Crome (2007), older people who experience frailty often experience times when they cannot manage their daily living activities and have reduced capacity to withstand environmental stress. Factors contributing to frailty are identified both in the theoretical and empirical literature, often associated with lost strength, illness and increasing age. These factors in turn lead to weakness which is the major contributor to frailty according to our findings and corroborated by Levers et al. (2006). In what direction and how the sub-categories in this study are related to each other is not possible to determine or identify. However, the present result shows that the patient's condition can be understood as weakness, i.e. as a health-related problem. Consequently, not being able to carry out activities of daily

living, regardless of the reasons, can be devastating for elderly people.

We argue that a first step towards giving optimal care is to clarify this complex condition (Johannisson, 2006; Dahlberg and Segesten, 2010). Concepts, e.g. in the form of diagnosis, are the basis for specific treatment, further investigation strategies, and advice on lifestyle. Without a formulated diagnosis it can be difficult for the person experiencing either illness or ill-health to be able to claim their rights to get help and support from relatives, healthcare professionals and society. Finally, this result reflects the intertwined relation between caring science and medical science (Elmqvist et al., 2010).

Clinical implications and further research

The results show that it is possible to interpret and understand the elderly people behind the condition ''general affected health condition''. It is particularly important to implement this new knowledge in pre-hospital emergency care, against the background of the situation for many of the elderly who are really healthy, enjoying good quality of life and functioning well when far on in years, even into their 90's. Therefore, in order to be able to distinguish those who are not as fortunate and as healthy, the ambulance personnel ought to ask questions about patients' access to life. Such a question could be if the patient can manage the daily living as usual. And further, how she/he have been able to carry through smaller and bigger life projects?

The EMS in Sweden, staffed with registered nurses, should be able to make advanced assessments and give appropriate treatment to elderly patients. Further studies are needed on elderly patients' outcomes, including questions on their own experiences of pre-hospital emergency care.

Conclusion

By using caring science, based on a comprehensive understanding of human life, the concept of frailty can clarify the state of ''general affected health condition'', as either illness or ill-health. This offers a new assessment category and outlines care and treatment that strengthen and support the health and wellbeing of the individual elderly person. Furthermore, the concept of frailty ought to be included in ''The International Statistical Classification of Diseases and Related Health Problems'' (ICD-10). We thereby nuance the suffering of older people and make it possible for their specific needs to receive the best possible care.

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