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What an ambulance nurse needs to know: A content analysis of curricula in the specialist nursing programme in prehospital emergency care

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ABSTRACT

In Sweden, ambulances must be staffed by at least one registered nurse. Twelve universities offer education in ambulance nursing. There is no national curriculum for detailed course content and there is a lack of knowledge about the educational content that deals with the ambulance nurse practical professional work. The aim of this study was to describe the content in course curricula for ambulance nurses. A descriptive qualitative research design with summative content analysis was used. Data were generated from 49 courses in nursing and medical science. The result shows that the course content can be described as medical, nursing and contextual knowledge with a certain imbalance with largest focus on medical knowledge. There is least focus on nursing, the registered nurses' main profession. This study clarifies how the content in the education for ambulance nurses in Sweden looks today but there are reasons to discuss the content distribution.

1. Introduction

Ambulance based care in Europe has developed from being a transport organization to being a qualified health care resource with highly trained personnel who perform specialized nursing care, advanced medical assessments, and administer treatment outside the hospital. The ambulance personnel must be able to gather relevant information from the patient, relatives, and witnesses in order to assess the patient's need for care and transport (Suserud, 2005). Today there is no universal system regarding staffing or training for working in ambulance care in Europe. Some countries have systems with training on a basic level with emergency medical technicians (EMT); others have chosen the paramedic system as seen in North America and the United Kingdom. In addition, physicians and/or registered nurses (RN) can be used in some countries as a complement in specific emergency conditions (Garcia-Castrillo Riesgo and Garcia Merino, 2003; van Schuppen and Bierens, 2011; WHO, 2008).

Sweden has, together with a few other countries such as Finland, the Netherlands, and Belgium, for example, decided to staff ambulances with RNs. Only a few studies describe the role of nurses in the ambulance and what they bring to patient care. van Schuppen and Bierens (2011) have compared competencies among ambulance nurses and physicians in the Netherlands. They conclude that 98% of the diagnostic competencies can be provided by both professions, but competencies for therapeutic and clinical judgment are inferior among nurses. Fischer et al. (2010) demonstrated that higher qualification, more training, and experience in emergency care increased survival after out-of-hospital cardiac arrest and improved a patient's status in some specific disease conditions. There are ongoing discussions concerning what level of medical competence is appropriate in ambulance services, but none about RNs and what their specific knowledge may add in patient care. On the other hand, there is an ongoing debate whether non-physicians in ambulance services have adequate knowledge and skills for certain technical skills, such as tracheal intubation (Lossius et al., 2012; Raatiniemi et al., 2013).

The Swedish National Board of Welfare has decided that each ambulance should have personnel trained to administer drugs (SOSFS, 2009, 10). The effect of this is that ambulances must be staffed by at least one RN. This regulation was taken into effect

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despite a lack of knowledge of what competencies are required in ambulance care. In 1997, the first version of an education in ambulance nursing was designed and then transferred to the program for specialist nursing in prehospital emergency care, comprising 60 credits (ECTS) in 2001 (Riksföreningen för ambulanssjuksköterskor och Svensk sjuksköterskeförening, 2012). Today, 12 universities offer this postgraduate education in Sweden. The education programme is regulated by the Swedish Higher Education Authority and provides a professional degree, a protected occupational title of ambulance nurse. Most of the universities could also provide a master's degree in nursing sciences.

According to the only policy document available, the Swedish Higher Education Act (SFS, 2006, 1053), specific goals to achieve a degree as an ambulance nurse are to '*demonstrate the ability to assess the somatic or mental status and immediate needs of sick or injured individuals and also demonstrate the ability to undertake the interventions required for patients in widely differing circumstances*' and to '*demonstrate the ability to apply his or her specialist knowledge in connection with major accidents and catastrophes*' (see Appendix). However, there is no guidance on how these learning objectives shall be achieved, nor is there any specific description of skills or requirements for detailed course content. This leads to each university creating a model based on its own interpretation. Moreover, the relationship between the educational content and clinical need has not been evaluated.

2. Aim

The aim of this study was to describe the educational content concerning professional practice as presented in the curricula for the specialist nursing program in prehospital emergency care in Sweden.

3. Method

3.1. Study design

A descriptive qualitative research design with summative content analysis described by Hsieh and Shannon (2005) was used to identify, analyze, and describe content in the course curriculum for specialist nursing in prehospital emergency care in Sweden. In the summative content analysis, the text is analyzed by identifying and quantifying keywords in order to understand the use in the current context (Hsieh and Shannon, 2005). The keywords are interpreted and sorted based on affinity, thus forming subcategories and categories. Finally, the keywords are counted to show the distribution within categories. This method was chosen since the selected text was not narrative, but mainly consisted of lists of words and sentences.

3.2. Data collection

Data were generated from curricula for courses in specialist nursing programmes in prehospital emergency care, openly accessible on the corresponding university websites during the spring term of 2012. Text was included from curricula in nursing and medical sciences, in addition to course content describing theoretical skills and related theory concerning ambulance care. Curricula for master's thesis as well as course content concerning theoretical knowledge in scientific theory and method were excluded.

3.3. Ethical considerations

Data are extracted from publicly accessible curricula. The collected content in the curricula was put together without any opportunity to identify which university it was derived from. The current study does not deal with personal data covered by the Ethics Act, and an ethical review was waived by the Ethical Board (Diary number 2013/1164-31/5).

3.4. Data analysis

Each university organizes its educational content into courses. Each course had its own curriculum, with a section that described the specific content of the course. The data analysis began with reading the section of course content several times and then identifying and quantifying words or sentences in order to understand the use of these words in context. This was also done to gain an understanding of the usefulness, layout, appearance and word content. The reading showed that the material was not a narrated text, but rather contained lists of sentences with content and/or single descriptive words in bulleted lists (see examples in Table 1). The second step was to consolidate and group each section with sentences or descriptions by the course curriculum affinity that represents a unit of analysis. These units were entered into Excel documents. The third step was to search for, and identify, the presence of keywords. The grouping of content was read through again,

Table 1
Example of different types of units of analysis and identification of keywords.

Units of analysis	Keyword
The content of the course focuses on caring judgement based on requirements in the Emergency Medical Service (EMS) and the ambulance nurse's approach and ethical considerations. The course also covers specific drugs in ambulance care based on pharmacokinetics and pharmacodynamics. Further ambulance equipment, communication and information systems are processed. The course also includes healthcare hygiene, work environment, ergonomics, and emergency driving.	- Caring judgement in the EMS - Ambulance nurse's approach - Ambulance nurse's ethical considerations - Leadership - Drugs based on pharmacokinetics - Drugs based on pharmacodynamics - Ambulance equipment - Ambulance communication systems - Healthcare hygiene - Work environment - Ergonomics - Emergency driving
• Pathophysiology and pharmacology with a focus on respiratory, circulatory, nervous system and elimination • Medical procedures related to the failure or impending failure of vital functions • Healthcare hygiene • Medical technology and security • Laws and regulations relevant to the field	- Pathophysiology - Pharmacology - Medical procedures - Failure of vital functions - Healthcare hygiene - Medical technology and security - Laws and regulations