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The content and documentation of health check-ups in occupational health care

Leena Uronen[1], Jaakko Hartiala[2] and Sanna Salantera[3]

Abstract

The purpose of this study was to describe the content and structure of documentation of health check-ups in occupational health care. A two phase study with the Delphi-group technique was used. Participants were a purposive sample of 20 occupational health nurses. Measurements: Semi structured interviews were conducted and a questionnaire for second round which was based on the interviews. Principally the occupational health nurses did not have a clear uniform opinion of the content areas of the health check-ups. It was noticeable that counseling was not mentioned as a content area of the health check up. Occupational health nurses considered the present documentation system extremely heterogeneous. The most important issue to be improved is the documentation of the health plan and summary. A structured body of documentation with the combination of free text would clarify the content of documentation of health check-ups in occupational health care. Also it would ease the evaluating of the effectiveness of the care given.

Keywords: Occupational health services, documentation, occupational health nurses

1 Introduction

Occupational health care promotes employee's health, working ability and safety at work. In Finland, occupational health care has been mandatory and regulated by a special law for several decades. One major activity of occupational health care is health check-ups, primarily performed by specially trained occupational health nurses and regulated by national guidelines. Occupational health care should follow the guidelines of "Good Occupational Health Care Practice", which defines the general principles of organizing, implementing and developing occupational health care as provided in the Act. [1,3,4]

[1]University of Turku, Department of Nursing Science. e-mail:lauron@utu.fi
[2]University of Turku, Department of Nursing Science.
[3]University of Turku, Department of Nursing Science.

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Occupational health nurses promote health mainly through health check-ups and a preventive approach. Finland has about 2.5 million working-age people [1,4]. Approximately one million health check-ups are made every year in Finnish occupational health care. [1,2,3] Health check-ups focus on imminent factors of work ability and try to identify, remove and control the risk factors at work. [1,4] The aims of these check-ups are presented in Table 1 [3]. These best practises are defined by every state in the EU and are based on evidence-based health care. [5]. The target group and content for health check-ups is planned according to workplace-specific risks and needs [3,4,5].

Table 1: The aims of health check-ups.

According to the "Good Occupational Health Care Practice in Occupational Health Care", the aims of health check-ups are as follows [2]:
1) Prevention of work-related diseases and their symptoms - to prevent the employee from falling ill because of the exposure at work 2) Promotion of the employees' health and work ability - to follow the employee's work ability, to chart the employee's life-style choices and to encourage him or her to choose health-promoting habits, and to survey the employee's health resources - to detect, as early as possible, potential changes in health, the onset of diseases and an indication of problems in coping, and the threat of lowered work ability - to assess work ability or its restrictions - to follow up the work capacity with chronic illnesses - to determine the need for treatment or for medical or vocational rehabilitation 3) Promotion of a well-functioning work community and a healthy and safe work environment - to investigate an employee's attitude toward safe working habits and protective measures

Health care uses a continuous patient documentation system, which is currently in digital form. In this document, all the information concerning patient care has been collected by different working groups [9]. Today, nurses document nursing care partly in a structured form, but most of the documentation is free-text (narrative) documentation [10,11,12]. Nursing documentation does not command confidence in other professional groups because the documentation has not been systematic. It is said to be inconsistent in structure and content. Other professional groups insist that the nurse's free-text documentation has contained many repetitions and has been heterogeneous, and it uses too many words [13,14]. Nursing documentation should establish the rational and critical thinking behind decisions and interventions while providing written evidence of the progress [15]. However, both nurses and doctors have been satisfied with the structured part of the documentation. Structured documentation in this case has also had a positive effect on job satisfaction [16,17,18,19,20]. The identification of the content areas and interventions in nursing is the first step to making nursing visible in different practical areas. A standardized nursing terminology improves the nursing documentation [10,14,16,21,22].

The purpose of this study was to find out how nurses perceive the content of health check-ups in occupational health care and to utilize this knowledge in order to define how

occupational health check-up is documented. An attempt was also made to define how the content should be documented according the nurses.
The research questions were the following:
1) What are the content areas of the health check-up in occupational health care?
2) How should the content areas of the health check-up be documented according to occupational health nurses?

2 Methods

Both an interview method and a questionnaire were adopted in this study. The data were collected at two Finnish occupational health care centres. Data were collected in the first round by using semi-structured interviews and analyzed by content analysis. In the second round, the data were collected by a questionnaire. This questionnaire was based on the answers of the first round and distributed to the same occupational health nurses who had participated earlier.
In this study, the data were gathered using the Delphi method. The Delphi method can be characterized as a method of a constructive group conversation process. The purpose of the method is to reach the most reliable consensus, a mutual understanding of the opinion of an expert group. The key features of the Delphi method are anonymity: repetition until consensus is reached, giving feedback to the interviewees, and the approaching of the interviewees' opinions for mutual understanding. All this takes place in the expert panel [23,24,25,26,27,28].
In this study, 20 occupational health nurses were purposively invited to participate, three of whom refused. The expert panel consisted of 17 occupational health nurses from two private health care centre, who had an average of 15.4 years of work experience and who were considered as experts in their field. All the occupational health nurses had done health check-ups in their own work and were therefore considered experts at doing them. This expertise was also defined in this study with a minimum of one year's working experience in occupational health care. Quasi-anonymity and confidentiality were assured to the participants. The response rate for both Delphi rounds was 85%.
In this two-phase study, both an interview and a questionnaire were used. The first Delphi round was accomplished by semi-structured interviews in which there were both structured and open questions. The expert panel was asked to identify and comment on the functions and interventions that they carry out in health check-ups. The occupational health nurses were also asked to select how the contents of the health check-ups should be documented. The interviews took on average 60 minutes. All the interviews were carried out in the interviewees' workroom. The data of the first round were analyzed by content analysis. The terms and word combinations were grouped according to the research problems. Then they were classified to higher classes, and their frequency was calculated in the material. One researcher (L.U.) read the original material several times so that the sub-classes formed would describe the original expression as carefully and comprehensively as possible.
The second Delphi round was accomplished by a questionnaire that was based on the information gathered during the first round. An attempt was made to keep the opinions of the occupational health nurse as unchanged as possible. All of the first round questions were in the questionnaire of the second round, with the addition of one question about counselling and guidance. The questionnaire was sent to all the expert panellists who had

participated in the first round (n=17) for further evaluation. They also had the possibility to change their opinions from the first round. The questionnaire was structured using a 10-point Osgood scale, with 0 for a totally different opinion and 10 for the same opinion. Altogether there were 103 questions. Answering took on average 20 minutes. The questionnaires were returned by 14 of the 17 occupational health nurses.

The data from the second round were analyzed by SPSS 12.0, and the data from the open questions were analyzed with content specification. The consensus limit was determined at 70%. Consensus was estimated by counting the average of the questions that had been drawn up with the Osgood scale and a standard deviation and the nominal scaled questions with a percentage of frequencies. The average stands for the opinion of the group whereas the standard deviation represents the level of the unanimity of the group [26].

The ethical concerns in the Delphi method are anonymity and the rights of the participant [28].

In this study, the demands of quasi-anonymity were met. Participants knew about each other's attendance but did not know each other's answers. Before the interview, the confidentiality, purpose of the study and the interviewee's rights were explained. The expert panellists got both oral and written information on the study. The second-round questionnaire gave the participants in the study an opportunity to think about the questions independently and to answer them without the effect of the outsider. Participants completed a written consent form. The participant had the right to withdraw from the study at any stage.

3 Results

The purpose of this study was to describe the content and documentation of the health check-ups in occupational health care. The results are reported by the research question so that the results of both Delphi rounds are summarized.

3.1 Content of health check-ups

In our first research question, we presumed that nurses had a clear opinion of the content of the health check-up. However, nurses perceived the content heterogeneously. They wanted to consider the health check-up individually, taking the personal situation and problems into account. All nurses largely aimed to support the workers' health and working ability in co-operation with the employer. The content areas of health check-ups are reported in Table 1. According to the nurses, the most important areas were: exposure to work-related hazards, body mass index (BMI), and information about working community, work wellbeing and mental workload. The respondents perceived that the first objective of the health check-up was the identification of the symptoms of work-related illnesses concerning work-related hazards. For this purpose, the occupational health nurses considered it important to identify health dangers and hazards at the work place. Nurses experienced that they must have information about industrial safety matters. All nurses (n=17) estimated the client's physical working conditions and exposure to work-related hazards. Nurses mentioned exposures to work-related hazards such as noise, dust, chemicals, work positions, ergonomics and temperature.

All the nurses assessed the aim of maintaining and promoting work capacity to be the most important when doing health check-ups. The personal experience of wellbeing was emphasized by all the nurses. Nurses perceived it important to obtain the customer's own estimations of the present health. Determining health habits and counselling for a healthier life were mentioned by all the nurses. By health habits, the occupational health nurses meant physical education, nutrition, sleeping, smoking and drinking, and they realized them by measuring body mass index (BMI), waist girth and blood pressure. Nurses also inquired about vaccinations. Some of the nurses mentioned social life, life situation and hobbies as being important. Some nurses (n=7) paid attention to spousal relationships and family life.

Nurses (n=13) perceived that present working life requires more mental resources than before and, therefore, the aim of investigating and assessing the psychosocial healthiness of work is today more important. Nurses also told that they were trying to clarify the matters concerning the work community. In such cases, they evaluated the functioning of the work community, the superior's support and management culture and job satisfaction. Nearly all occupational health nurses (n=15) assessed mental workload using a questionnaire. For example, a working ability index was used for assessing mental welfare and work stress. On the other hand, some nurses mentioned the evaluation of know-how at work and the received orientation.

In the first round, not one of the nurses mentioned counselling or giving advice. The researcher added it to the questionnaire for the second round. After that, nearly all the nurses indicated that they give information and advice throughout the health check-up. This counselling was mainly about health and safety at work, but the nurses also gave information about ergonomics and the exposure to work-related hazards. Nurses perceived it as quite important that they do a health plan with the customer. They also mentioned that they interviewed the customers about allergies, basic illnesses and current medication. Some of them mentioned that they also assessed the risk for osteoporosis and diabetes. The monitoring and supporting of a disabled employee was experienced as difficult by nurses and wasn't mentioned as content area.

The minimum content of the health check-ups in occupational health care based on the consensus (70%) of the Delphi rounds included the following sectors: (1) determining exposure for work-related hazards, (2) measuring BMI, (3) determining physical working conditions, (4) determining work wellbeing, (5) determining health habits, (6) determining mental workload, (7) counselling, (8) measuring blood pressure, (9) measuring hearing, (10) counselling concerning non-smoking, (11) counselling concerning intoxicants, (12) counselling concerning nutrition, (13) checking and supplementing vaccinations, (14) counselling about sleeping, (15) determining working ability, (16) determining chronic, earlier illnesses, (17) determining medication, (18) determining and counselling on the necessity of using safety equipment, (19) determining allergies, (20) compilation of the health plan, (21) counselling about physical education, (22) determination of diabetes risk type, and (23) determining mental state. See details in Table 2.

Table 2: Occupational health nurses' opinion of the content of the health check-up in occupational health care.

Content of health check-up	**Amount of answers**	**Delphi round 1**	**Delphi round 2**
Interview and questionnaire	**Round 1/Round 2**	**Consensus (70%)**	**Consensus (70%)**
Exposure for work-related hazards	17/14	**100**	**100**
BMI	17/14	**100**	**100**
Physical working conditions	17/14	**100**	**100**
Work wellbeing	17/14	**100**	**100**
Health habits	17/14	**100**	**100**
Mental workload	16/13	**93**	**93**
Counselling	0/13	0	**93**
Blood pressure	16/13	**93**	**93**
Hearing	8/13	53	**93**
Counselling non-smoking	10/13	**76**	**93**
Intoxicants	12/12	**86**	**86**
Nutrition	12/12	**86**	**86**
Vaccination	8/12	53	**86**
Sleeping	8/12	53	**86**
Work ability	7/12	41	**86**
Chronic, earlier illnesses	11/11	**79**	**79**
Medication	11/11	**79**	**79**
Protective equipment	1/11	6	**79**
Allergies	8/11	53	**79**
Health plan	7/11	41	**79**
Physical motion, activity	12/11	**86**	**79**
Diabetes risk type	7/10	41	**72**
Mental state	8/10	53	**72**
Job satisfaction	1/9	6	65
Spirometry, Vital graph	8/9	53	65

Social life	3/9	18	65
Eyesight	8/9	53	65
Management, leadership	8/9	53	65
Osteoporosis risk	7/9	41	65
Professional know-how	1/9	6	65
Family illness	8/9	53	65
Spousal relationship, family	7/9	41	65
Hobbies	8/9	53	65
Measurement of waist girth	7/8	41	50
Social life	7/8	41	50
Summary	7/7	41	41

3.2 Documentation

The second research question was on how the occupational health nurses would prefer to document the content areas of the health check-up. In the first round, nurses were asked to tell about what and how they documented. In the questionnaire for the second round, nurses ranked statements on a 10-point Osgood scale, with 0 for a totally different opinion and 10 for the same opinion.

Nearly all occupational health nurses (n=13) considered the present documentation system to be extremely heterogeneous. The free-text narrative written by the nurses is individual and it does not have a common order. Each nurse has her own style, skills and habits. Furthermore, the language used contains abbreviations, and the texts are scant. Half of the nurses felt that there was too much documentation in health check-ups. They also felt that it is not easy to use the heterogeneous information collected during the busy working day. The other half of the nurses thought that not enough was being written about the health check-ups.

About half of the nurses reported that they formulated and documented a summary of the health check-up. Nearly all the nurses claimed that they do the health plan with the customer, but only some of them (n = 5) documented it in the patient documents. According to the nurses, the most important issue to be improved is the documentation of the summary and the health plan. Continuity of care is difficult if these two are not clearly reported and documented. The nurses were dissatisfied with the documentation of the job description, and they estimated that health problems at work are poorly documented. Other health problems are easier to find from the documentation. Not enough is written about the functioning of the work community and leadership. Nurses alleged that they give counselling throughout the health check-up, but they rarely document it. See details in Table 3.

Table 3: Content area of the health check-up that is not sufficiently documented according to the nurses

Contents of health check-up	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**n=14**	**av**	**Sd**
Summary of health check-up				2			2	1	3	4	2	14	**7.50**	2,279
Health plan				2		1		3	3	3	2	14	**7.36**	2,274
Exact work description	1	1			1			1	4	4	2	14	**7.14**	3,183
Health problems in work		1	1	1			2	1	2	4	2	14	**6.93**	2,973
Functionality of work community		1		1	1		3	1	2	2	3	14	**6.93**	2,786
Leadership	1				1	1	4	1	2	2	2	14	**6.71**	2,673
Exposure to work-related hazards		1	1	2			1	2	2	2	3	14	**6.64**	3,153
Giving guidance and counselling				2		2	2	3	3	1	1	14	**6.57**	2,065
Health habits shortly	1	2	1	4	1	1			1	1	2	14	**4.43**	3,435

4 Discussion

Our study showed that the nurses' opinion on important issues in health check-ups varied somewhat. However, they all found that supporting the worker's health and working ability is a central content area in health check-ups. Primarily, the occupational health nurses consider it important to clarify the worker's personal opinion of his own health and his ability to work. They estimated that it is important to be familiar with the working environment and conditions of the employee. According to the principles of best practises in occupational health services [1], in our study the nurses attempted to prevent health dangers in health check-ups and protect the worker's health and adapt working conditions by determining working conditions and job satisfaction. The functions of employee's health promotion [2,8] are an essential part of the work according to the nurses in this study. The process of the health check-up has to be dynamic, and it should be a dialogue between the customer and the nurse about job safety, wellness and health [cf. 4]. Each of the nurses gave a clear picture of how they themselves carry out the contents of the health check-ups. The content of the health check-up has not been commonly defined in our study, but every nurse defined it according to her own work experience and professional skill. In the future, a common definition of the content will support the improvement of work.

After the first round, the occupational health nurses did not mention counselling as a content area of the health check-up. This was surprising, since it is usually seen as one of the most important issues in preventative nursing. The researcher, based on her experience as an occupational health nurse, added counselling to the second round's questionnaire. The second round showed that it was found to be important after all. According to previous research, counselling is poorly documented in the nursing sector [14,15,2], although counselling is an important part of the nurse's work. Presumably it is

seldom documented because it is such a routine part of the work and nurses claim it is supposed to automatically belong to the work. This supposition prevents the work of nurses from becoming visible. Documentation on counselling interventions would better secure the continuity of high-quality care for the worker.

In our study, a conflicting result was found among the content areas that should be documented, according to the nurses. The nurses considered the summary of the health check-up as a content area that should be documented. Despite this, the summary did not reach a consensus; and in our study, nurses did not present it as a sector of the content areas. However, according to the nurses, the summary was not sufficiently and clearly documented. A well-documented summary could ensure the continuity of the care and improve the quality of care [1,6,17].

The results of this study are useful for developing an electronic documentation platform for occupational health care nurses. Our study is one of the first to identify issues for health check-up documentation. With electronic documentation, it is possible to get structured information for clinical and management decision-making. This way we can in the future evaluate the effectiveness of health check-ups and make the work that was done more visible.

The Delphi method has potential pitfalls that may affect its scientific validity. In this study, the sample selection and anonymity were viewed as acceptable. Only two data-collecting rounds were carried out. In the Delphi method, it is recommended that 3 to 4 rounds are carried out; and this study would have benefited from one more round in order to focus opinions. On the other hand, valuable individual opinions were also obtained in the study. The use of the method was useful, because it gave the opportunity to gather a wide range of expert opinions.

The expert panellist group shrank to 14 occupational health nurses in the second round. This partly hampers the reliability of the study. The panel members of this study were carefully chosen. They were experts in different aspects of health check-ups and in occupational health care. Most of them were not experts in electronic documentation even though some of them had documented electronically for nearly 10 years. The first round of the study was carried out by an interview where as many ideas and opinions as possible were gathered. With the help of the interviews, the members of the panel were able to influence the contents of the study. In this study, the answers were presented in percentages. A presentation with percentages easily distorts results in this small number of expert panellists' answers. The content consistency between the rounds was not possible to calculate statistically because of the small number of interviewees. The findings of the Delphi method represent the experts' opinions more than undisputed fact [27].

5 Conclusion

Electronic documentation starts to be common in hospitals as well as in health care centres. It is surprising how little is done to develop documentation systems for occupational health care nurses. Our study gives one perspective on documentation of health check-ups. More research is needed regarding documentation in occupational health care. This study could be continued by gathering information about actual documentation in practise. This way, it could be possible to compare the difference between the documentation of practical nursing and the results of this study.

References

[1] Act on Occupational Health Care. The States of Finland; 1383/2004.

[2] The Social Insurance Institution of Finland, 2010. See also: http://uudistuva.kela.fi/it/kelasto/kelasto.nsf/NET/211112151218TL/$File/Tth_10.pdf.)

[3] Finnish Institute of Occupational Health and Ministry of Social Affairs and Health. Health examinations In Occupational Health Care, Helsinki (2005).

[4] Anttipoika, M. (1997). Health examinations. In M. Anttipoika & H. Taskinen, (Eds.), Good Occupational Health Practise- A guide for planning and follow-up of occupational health services. Ministry of Social Affairs and Health, Finnish Institute of Occupational Health. First edition. Edita Helsinki (1997).

[5] Hämäläinen, R-M. (2008) The Europeanization of occupational health services: A study of the impact of EU policies. People and Work Research Reports 82. Tampere.

[6] Ishihara I, Yoshimine T, Horikawa J, Majima Y, Kawamoto R, Salazae M. Defining the Roles and Functions of Occupational Health Nurses in Japan. *AAOHN Journal* **52**(6), (2004),230-41.

[7] Slagle M, Sun S, Mathis M. A conceptual Model of Occupational Health Nursing – the Resource Model. *AAOHN Journal* **46**(3), 1998; 121-6.

[8] Rogers B. Occupational Health Surveillance, Screening, and Prevention Activities in Occupational Health Nursing Practise. *AAOHN Journal* **48**(2), 2000, 92-9.

[9] Ministry of Social Affairs and Health. National definition and implementation of the electronic patient record system (In Finnish) Working Group Memorandum of the Ministry of Social Affairs and Health. Helsinki. (2004). 2003:38.

[10] Ammenwerth E, Eichstädter R, Haux R, Pohl U, Rebel S, Ziegler S. A Randomized Evaluation of a Computer-Based Nursing Documentation System. Methods Information in Medicine; **40**, (2001), 61-8.

[11] Hamilton C, Jocob J, Koch S, Quammen L. 2004. Automate best practices with electronic healthcare records. *Nursing Management* **32**(2), (2004), 40-1.

[12] Cho I, Park H-A. Development and evaluation of a terminology-based electronic nursing record system. *Journal of Biomedical Informatics* **36**, (2003), 304-12.

[13] Stengel D, Bauwens K, Walter M, Köpfer T, Ekkernkamp A. Comparison of Handheld Computer-Assisted and Conventional Paper Chart Documentation of Medical Records. A Randomized Controlled Trial. *The Journal of Bone and Joint Surgery* **86**(3), (2004), 553-60.

[14] Allan J, Englebright J. Patient-Centered Documentation. An Effective and Efficient Use of Clinical Information Systems. JONA 30(2), 2000, 90-5.

[15] Blair W, Smith B. *Contemporary Nurse*; **41**(2), 2012 ,160-8. doi: 10.5172/conu.2012.41.2.160.

[16] Meadows G. The Nursing Shortage: Can Information technology help? *Nursing Economic* **20**(1), (2002), 46-9.

[17] Neville D, Gates K, Tucker S, Keough M, MacDonald D, Barron M, et al. Towards an Evaluation Framework for Electronic Health Records initiatives: An Annotated Bibliography and Systematic Assessment of the Published Literature and Program Reports. 2004. (See also http://www.hc-sc.gc.ca/ohih-bsi/pubs/kdec/nf_eval_rpt2_3.html.)

[18] Prophet C, Krall M, Budreau G, Gibbs R, Walker K, Eyman J, Hafner M. Evaluation of Online Documentation. 1998. (See also http://www.amia.org/pubs/symposia.)
[19] Aquilino M, McClelland E, Tarbox M. Standardizing the Language of Public Health Nursing: Integrating the Nursing Interventions Classification System (NIC) and the Core Public Health Functions. *Journal of Nursing Informatics* (OJNI) **4**(2), (2000);. (See also http://www.eaa-knowledge.com/ojni/ni/4_2/riversinfotech.htm.)
[20] Junttila K, Salanterä S, Hupli M. Perioperative Documentation in Finland. *AORN Journal* **72**(5), (2000), 862-77.
[21] McCloskey J, Bulechek G, Donahue W. Nursing Interventions Core to Specialty Practice. *Nursing Outlook*; **46**, (1998), 157-63.
[22] Poissant L, Pereira J, Tamblyn R, Kawasumi Y. The Impact of Electronic Health Records on Time Efficiency of Physicians and Nurses: A Systematic Review. *Journal of the American Medical Information Association* **12**, (2005), 505-16.
[23] Gupta U, Clarke R. Theory and Applications of the Delphi Technique: A Bibliography (1975-1994). *Technological Forecasting and Social Change* **53**, (1996), 185-211.
[24] Hasson F, Keeney S & McKenna H.. Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing*, **32**(4), (2000), 1008-1015.
[25] Keeney S, Hasson F, McKenna H. A critical review of the Delphi technique as a research methodology for nursing. *International Journal of Nursing Studies* **38**, 2001, 195-200.
[26] Polit D & Hungler B.. Nursing Research. Principles and Methods. Lippincott Company, Philadelphia. 1999
[27] Powell C. The Delphi technique: myths and realities. *Journal of Advanced Nursing* **41**(4), (2003), 376-82.
[28] Jones J, Hunter D. Consensus methods for medical and health services research. *British Medical Journal*; **311**, (1995), 376-80.