

Original Article

How Practical Nurses, Registered Nurses and Nurse Managers View Practical Nurses' Work Activities

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Abstract

Background: There are no previous studies considering colleagues' and nurse managers' assessments of the work activities of practical nurses.

Aim: To describe, analyse and compare the views of practical nurses, registered nurses and nurse managers on the work activities of practical nurses in adult somatic hospital wards.

Method: This study uses a cross-sectional design with a self-administered questionnaire. The participants in the study were practical nurses (n=253), registered nurses (n=1627) and nurse managers (n=109). A total of 1,989 questionnaire links were sent out and 672 completed questionnaires were returned.

Results: Nurse managers rated tasks as being the duties of PNs less often than the PNs themselves. In contrast registered nurses assume PNs do much more than they actually do. The responses of the different groups (practical nurses, registered nurses, and nurse managers) differed significantly in relation to more than half of the tasks.

Conclusion: These results provide evidence-based information about the interface between registered nurses' and practical nurses' work and could be used when developing and organizing the work and to unify job descriptions in order to increase productivity and efficiency.

Key words: Practical nurse, registered nurse, nurse manager, nursing, work activities

Introduction

Registered nurses (RNs) have various roles and titles and they are taking on more demanding functions to improve access to care, promote a higher quality of care and improve their career prospects (Delamare & Lafortune, 2010). At the same time, there is a need to identify the roles of other healthcare workers, because not all input is being effectively utilized (WHO, 2006). Finding the right division of labour requires an

understanding of existing job descriptions. However, there is no consensus on job descriptions and the more titles we have in healthcare, the more confusing it becomes (Currie & Carr-Hill, 2013; Baumann, 2013).

Clear job descriptions are associated with improved achievement of work goals (Franco, Bennett & Kanfer, 2002), and within this context it is important to clarify the roles of each group

to obtain a sufficient basis for a reasonable division of labour.

Several concepts are related to the division of labour. The term 'skill mix' is used to describe the mix of posts, and the combination of activities that comprise each role. An effective skill mix can be achieved through clarity of roles and a better balance of different occupational groups (Buchan & Dal Poz, 2002; Buchan & Aiken, 2008). In this study, "division of labour" means the development of the whole working unit so that the activities are arranged appropriately from the perspective of competence of different occupational groups (Hukkanen & Vallimies-Patomaki, 2005).

A review of the literature shows that only a minority of existing studies focus on practical nurses (PNs) and as far as we know, there are no previous studies about the work activities of practical nurses as they are assessed by colleagues and nurse managers. The only work with a somewhat similar design to the current study was by Conway and Kearin (2007), in which registered nurses (RNs) and patient support assistants identified the role of unregulated workers in Australia. The most common professional groups examined in this field are registered nurses, healthcare assistants and enrolled nurses. Enrolled nurses have been widely studied in Australia, where the nursing workforce is comprised primarily of registered nurses and enrolled nurses. Milson Hawke and Higgins (2004) found a lack of differentiation of roles between enrolled nurses and registered nurses. In a study by Chaboyer *et al.* (2008) there were also great similarities in the activities undertaken by enrolled nurses and level 1 registered nurses. The working time use by practical nurses and registered nurses was examined by Antinaho *et al.* (2015). According to that study, practical nurses spent more time in direct patient care than registered nurses. Practical nurses were also considered in a study by Shuriquie, While and Fitzpatrick (2008), who found that practical nurses undertook activities which were physically more demanding, and intellectually or technically less demanding. Research on roles and working time use has largely involved healthcare assistants, mainly in the United Kingdom (Spilsbury & Meyer, 2004; Bach, Kessler & Heron, 2008; Kessler, Heron & Dopson, 2013) and Australia (Walker, Donoghue & Mitten-Lewis, 2007).

The aim of this study was to describe, analyse and compare the views of practical nurses, registered nurses and nurse managers on the work activities of practical nurses in adult somatic hospital wards. The research questions we investigated were: (1) Are there differences in the perceptions of the work of PNs when comparing the views of PNs, RNs and nurse managers? (2) What kinds of work activities do the PNs undertake according to PNs, RNs and nurse managers?

Methods

Design

A descriptive cross-sectional design was used.

Study instrument

A search of the literature did not produce an applicable questionnaire, so one was developed specially for this study. The questionnaire included background variables for the participants describing their gender, age, education, years of nursing (management) experience, place of work, specified study programmes (PNs) and working areas (surgical-medical-gynaecology). The questionnaire items were mainly derived from the Oulu Patient Classification (OPC) (Fagerstöm, Lonning & Andersen, 2014) and from the Finnish Care Classification system (Kinnunen *et al.* 2014). A total of 128 nursing activities were grouped into the following six major categories according to the OPC: (1) planning and coordination of nursing care (16 activities); (2) breathing, blood circulation and symptoms of disease (22 activities); (3) nutrition and medication (32 activities); (4) personal hygiene and secretion (30 activities); (5) activity, sleep and rest (two activities); and (6) teaching, guidance in care and follow-up care and emotional support (six activities). In addition, there was a 'miscellaneous' work category containing 20 activities.

These categories were selected because they form the basis of the recording in the study hospital and they are based on a holistic view of nursing care (Fagerstöm, Lonning & Andersen, 2014).

The questions were related to the interface between the work of the practical nurses and the registered nurses. The "interface" in this study refers to any area where practical nurses' and registered nurses' job descriptions come

together and affect each other and where the tasks could be performed by either a practical nurse or a registered nurse. The question for each task was: Do practical nurses perform these activities in your work unit? The response options were: 'Yes,' 'No' or 'We do not have this task in our unit.'

Reliability and validity

Several strategies were used to ensure the validity and reliability of the questionnaire. The working group (n=5) involved in the development of the questionnaire consisted of members of the Nursing Research Council, each with a university degree in education. The preliminary questionnaire was presented at a meeting of the Research Council and also sent for evaluation by a group of teachers of practical nurses (n=8), each of whom provided written feedback. Prior to the main study, a pilot study was arranged for 5% (n=100) of the study population with the same characteristics as the target population.

Data collection and ethical considerations

The study was conducted in Finland at Oulu University Hospital and Oulaskangas Hospital in the Northern Ostrobothnia Hospital District, which has 944 beds and 3,200 nurses at different levels. The typical staff mix in the medical-surgical wards is 75-100% RNs, with the remaining portion comprising PNs (Liljamo, Lavander & Kejonen, 2015). The participants were: 1) a practical nurses (PNs) group (n=253), which consisted of PNs (n=193), hospital and ambulance attendants (n=45) and children's nurses from maternity wards (n=15); 2) a group of registered nurses (RNs) and radiographers (n=1627), which consisted of RNs (n=1424), midwives (n=162) and radiographers (n=41); and 3) a nurse managers group (n=109), which consisted of nurse managers (n=60) and assistant nurse managers (n=49). Data were collected via a web-based questionnaire in November-December 2012. An information letter was attached to the invitation and a reminder was sent once to the potential participants.

According to the Medical Research Act (488/1999 and amendments 295/2004), approval of the local ethics committee is not required for studies focusing on healthcare workers. However, the study protocol was approved by the nursing director of the hospital. In addition,

the information letter included in the e-mail indicated that participation was voluntary.

Data analysis

The data were combined and analysed using the statistical processing software SPSS version 22 (IBM Corp., Armonk, NY). Descriptive statistics were used to summarize the data and the differences between the groups were examined using a chi-square test. The statistical significance level was set at $p < 0.05$.

Results

A total of 1,989 questionnaire links were sent by e-mail and 672 (34%) questionnaires were returned. The response rate in the PN group was 48%, in the RN it was 30%, and in the nursing manager group it was 62%.

Demographic characteristics of the respondents

In the registered nurses group (n=472), the majority of the participants were registered nurses (n=419); the remainder were midwives (n=47) and public health nurses (n=2,) while four (n=4) did not indicate their position. The radiographers (n=12) were removed from the results because of the different occupational background compared to registered nurses. The practical nurses group (n=121) consisted of practical nurses who had attended the modern training programme for practical nurses since 1993 (n= 60) and some who had been through their training before 1993 (n=47), hospital and ambulance attendants (n=5), children's nurses (n=5); four (n=4) had two degrees. The nurse managers group (n=67) consisted of nurse managers (n=36) and assistant nurse managers (n=27); four of the respondents (n=4) did not indicate their position. The majority of the respondents were female (RNs [93.8%], PNs [86.8%], managers [90.9%]) and in every group, the majority were working on wards (Table 1).

Planning and coordination of nursing care

The first group of tasks listed in the questionnaire was related to the *planning and coordination of nursing care* and it consisted of 16 descriptions for different tasks, such as interviewing the patient at the beginning of their care, sorting out and recording home medication. The RN group considered that the tasks were more often the duties of PNs in 14 tasks out of 16. Nurse managers considered that the tasks belonged more often to PNs in three tasks out of 16. These groups' perceptions differed

significantly for 11 tasks. Considering that the tasks were part of the PNs' duties varied from 22.1% to 78.3% (Table 2).

Breathing, blood circulation and symptoms of disease

In the second category (*breathing, blood circulation and symptoms of disease*), the RN group considered that the tasks more often were parts of the duties carried out by PNs in 19 cases out of 22. Nurse managers considered the tasks

belonged more often to the duties carried out by PNs in nine cases out of 22. These groups' perceptions differed significantly for 11 tasks. The percentages of respondents (21.6% to 96.6%) indicating that the tasks belonged in the duties performed by PNs were higher than in the first category. Almost all PNs considered, for example, that giving oxygen (96.6%), participating in resuscitation (94.6%), and observing oxygen saturation fell within the scope of their duties (Table 3).

Table 1. Sample characteristics

Variable	PNs (n=121)		RNs (n=472)		Nurse managers (n=60)		Total (n=653)	
	n	%	n	%	n	%	n	%
Gender								
Female	105	86.8	438	93.8	60	90.9	611	92.3
Male	16	13.2	29	6.2	6	9.1	51	7.7
Age								
20-29	22	18.3	79	16.8	2	3.0	105	15.8
30-39	23	19.2	158	33.7	3	4.5	184	27.7
40-49	27	22.5	106	22.6	22	32.8	156	23.5
50-59	37	30.8	115	24.5	33	49.3	188	28.3
>60	11	9.2	11	2.3	7	10.4	31	4.6
Length of work experience								
<5	27	22.7	93	19.9	19	30.2	140	21.3
5-10	28	23.5	123	26.3	18	28.6	173	26.3
11-20	10	8.4	138	29.5	11	17.5	158	24.0
21-30	31	26.1	87	18.6	12	19.0	132	20.1
>30	23	19.3	27	5.8	3	4.8	54	8.2
Workplace								
Outpatient clinic	15	12.6	65	13.9	11	20.0	98	15.1
Intensive care / emergency department	15	12.6	82	17.5	7	12.7	103	15.8
Op. theatre/delivery room/ research unit	6	5.0	94	20.1	6	10.9	110	16.9
Ward	79	66.4	210	44.9	21	38.2	308	47.4
More than one unit	4	3.4	17	3.6	10	18.2	31	4.8

Table 2. Planning and coordination of nursing care

Planning and coordination of nursing care	PNs* (n=121)		RNs* (n=472)		Nurse managers(n=67)		p
	yes		yes		yes		
	n	%	n	%	n	%	
1. Receiving patients to the unit	74	68.5	273	70.0	36	62.1	0.475
2. Interviewing the patient	49	51.6	227	62.4	23	47.9	0.043
3. Charting of risk information	41	42.7	237	62.7	22	41.5	<0.001
4. Sorting out home medication	26	28.3	200	53.5	13	27.7	<0.001
5. Recording home medication	21	23.1	170	47.4	11	23.4	<0.001
6. Creating a nursing plan	70	69.3	251	67.5	27	51.9	0.066
7. Ordering routine tests for the patient	48	50.0	238	65.2	25	47.2	0.003
8. Ordering tests prescribed by a doctor	53	53.0	258	67.0	26	49.1	0.004
9. Arranging special workers like physiotherapist, social worker, dietician or interpreter for the patient	50	52.6	218	61.1	22	40.7	0.011
10. Arranging continued care	21	22.1	178	48.2	11	22.2	<0.001
11. Informing the patient about continued care	72	72.7	268	71.1	23	46.0	0.001
12. Informing relatives about continued care	38	40.4	230	62.8	18	37.5	<0.001

13. Arranging control visits	25	25.3	120	36.9	15	30.6	0.088
14. Making a summary of nursing	21	24.4	157	47.0	9	20.0	<0.001
15. Reporting about own patient	54	58.7	225	62.7	21	47.7	0.147
16. Recording the above-mentioned tasks in the care plan	83	78.3	310	80.5	35	68.6	0.144

Number

r of missing responses varies per item; some respondents chose the option: we do not have this task in our unit and some respondents did not wish to answer

*Activities that are considered part of (n,%) the work duties of practical nurses according to practical nurses (PNs) themselves, registered nurses (RNs) and nurse managers.

Table 3. Breathing, blood circulation and symptoms of disease

Breathing, blood circulation and symptoms of disease	PNs* (n=121)		RNs* (n=472)		Nurse managers (n=67)		p
	yes		yes		yes		
	n	%	n	%	n	%	
1. Observing oxygen saturation and breathing frequency	105	92.1	370	92.3	48	87.3	0.445
2. Assisting with and teaching peak expiratory flow (PEF)	52	65.8	134	63.2	11	55.0	0.667
3. Evaluating the quality and quantity of sputum	59	65.6	213	77.7	27	87.1	0.020
4. Arranging a body position that would facilitate breathing	96	89.7	359	93.9	49	92.1	0.320
5. Teaching breathing exercises	66	70.2	267	83.4	36	90.1	0.005
6. Assisting with and teaching emptying of lungs	44	55.0	180	71.4	27	84.4	0.003
7. Oral suctioning	100	90.9	327	89.8	42	85.7	0.600
8. Endotracheal suctioning	89	83.2	280	86.7	35	77.8	0.241
9. Teaching positive pressure expiratory techniques	87	84.5	293	88.0	37	88.1	0.635
10. Giving oxygen	113	96.6	388	94.4	54	91.5	0.368
11. Giving hyperbaric oxygen	40	50.6	122	54.5	11	47.8	0.734
12. Caring for tracheostomy	77	77.0	252	83.2	32	80.0	0.375
13. Evaluating the level of consciousness with Glasgow Coma Scale	40	50.0	187	67.3	12	40.0	0.001
14. Assisting with intubation	33	41.3	209	74.1	22	62.9	<0.001
15. Extubating	16	21.6	108	49.6	6	23.1	<0.001
16. Recording the above-mentioned tasks in the care plan	78	75.7	296	85.3	37	80.4	0.069
17. Recording electrocardiogram	63	68.5	212	71.4	25	64.1	0.601
18. Monitoring blood sugar	100	87.7	363	89.6	42	76.4	0.018
19. Recording blood sugar in the nursing plan	100	88.5	360	89.6	41	75.9	0.015
20. Assessing pain	90	84.9	349	89.9	38	71.7	0.001
21. Participating in resuscitation	105	94.9	401	95.9	55	85.9	0.004
22. Recording the above-mentioned tasks in the care plan	102	91.1	375	92.3	46	78.0	0.001

Number of missing responses varies per item; some respondents chose the option: we do not have this task in our unit and some respondents did not wish to answer

*Activities that are considered part of (n,%) the work duties of practical nurses according to practical nurses (PNs) themselves, registered nurses (RNs) and nurse managers.

Table 4. Nutrition and medication

Nutrition and medication	PNs* (n=121)		RNs* (n=472)		Nurse managers (n=67)		p-value
	yes		yes		yes		
	n	%	n	%	n	%	
1. Recording tasks connected to nutrition in the care plan	96	89.7	356	92.7	49	89.1	0.458
2. Inserting naso-gastric tube	26	29.5	165	52.1	6	14.6	<0.001
3. Removing naso-gastric tube	72	75.0	255	75.4	31	68.9	0.635
4. Assisting with breastfeeding	17	36.2	69	51.9	9	60.0	0.119
5. Feeding through naso-gastric tube or PEG	75	76.5	200	72.7	21	60.0	0.169
6. Recording the above-mentioned tasks in the care plan	87	84.5	314	88.7	43	91.5	0.380
7. Recording the prescribed medications in the care plan	27	28.1	144	41.6	8	16.3	<0.001
8. Placing medicines on a patient tray	9	10.7	96	34.5	2	5.7	<0.001
9. Doing the medication round	57	60.0	236	65.4	26	55.3	0.301
10. Administering prescribed medications orally	90	84.1	318	83.5	41	78.8	0.675
11. Administering medication via naso-gastric tube or PEG	57	57.6	193	65.0	10	25.0	<0.001
12. Administering medication per rectum	69	67.6	259	76.2	28	66.7	0.132
13. Administering medication vaginally	56	58.9	238	74.6	28	66.7	0.011
14. Administering medical inhalation	82	80.4	284	79.6	31	67.4	0.148
15. Administering nebulizer	80	79.2	284	80.7	27	60.0	0.006
16. Administering medication patch	59	64.8	228	69.1	20	46.5	0.013
17. Administering medicine ointment	82	79.6	300	85.5	32	76.2	0.154
18. Administering eye / ear drops	87	83.7	313	84.8	32	71.1	0.065
19. Administering topical local anaesthetic	51	53.1	221	67.4	20	47.6	0.004
20. Giving a subcutaneous injection	35	38.0	211	59.1	12	25.5	<0.001
21. Giving an intramuscular injection	13	14.4	167	47.2	6	13.3	<0.001
22. Changing an infusion bag	70	70.7	295	78.0	27	55.1	0.002
23. Recording administration of medicine	58	59.8	283	72.8	24	48.0	<0.001
24. Venous cannulation	5	5.4	162	44.1	5	9.8	<0.001
25. Inserting a mandrin into a venous cannula	48	50.5	234	65.4	21	44.7	0.002
26. Flushing the venous cannula	35	39.3	213	60.0	12	25.5	<0.001
27. Removing venous cannulation	94	86.2	334	85.4	38	74.5	0.110
28. Evaluating and recording the effect of the medicine	79	76.0	273	71.5	28	53.8	0.013
29. Evaluating and recording drug reactions and side effects	81	77.1	273	71.7	30	53.6	0.006
30. Counselling the patient on the medicine	36	37.9	205	54.8	14	28.6	<0.001
31. Updating the drug list	12	13.0	157	44.7	5	10.4	<0.001
32. Ordering medicine from the pharmacy	7	7.7	135	37.2	5	9.8	<0.001

Number of missing responses varies per item; some respondents chose the option: we do not have this task in our unit and some respondents did not wish to answer

*Activities that are considered part of (n,%) the work duties of practical nurses according to practical nurses (PNs) themselves, registered nurses (RNs) and nurse managers.

Table 5. Personal hygiene and secretion

Personal hygiene and secretion	PNs* (n=121)		RNs* (n=472)		Nurse managers (n=67)		
	yes		yes		yes		
	n	%	n	%	n	%	p
1. Care of the skin surrounding the venous cannula	86	80.4	333	87.6	38	73.1	0.009
2. Evaluation, cleaning and repair of the fastening of the central venous catheter	78	77.2	280	80.5	25	56.8	0.002
3. Evaluation, cleaning and repair of the fastening of the epidural catheter	56	65.9	233	78.7	20	54.1	0.001
4. Making up the isolation room	90	84.9	354	90.5	48	88.9	0.250
5. Care of the root of the external fixation device	37	56.1	170	77.6	27	81.8	0.001
6. Topical treatment of skin lesions	30	50.0	149	73.0	24	82.8	0.001
7. Giving UV-light therapy	5	12.2	37	32.7	3	33.3	0.039
8. Dressing wounds aseptically	57	67.9	268	82.0	30	73.2	0.013
9. Cleaning the wound antiseptically	76	80.0	308	88.5	39	86.7	0.097
10. Using wound glue	20	33.9	111	54.9	12	42.9	0.012
11. Rinsing a wound	85	83.3	315	90.1	35	79.5	0.027
12. Cleaning the wound mechanically	65	69.9	266	78.8	31	68.9	0.081
13. Flushing a fistula	75	78.1	253	79.1	28	66.7	0.165
14. Carrying out vacuum therapy	41	54.7	163	71.5	18	58.1	0.011
15. Treatment of skin graft	61	70.1	231	83.8	26	70.3	0.005
16. Removing stitches	70	66.7	249	72.2	20	47.6	0.004
17. Removing clips	65	64.4	228	70.7	19	48.7	0.014
18. Monitoring drain secretion	83	80.6	320	89.4	37	78.7	0.010
19. Removing a drainage tube	44	47.8	189	60.3	12	31.6	0.001
20. Counselling the patient on wounds	80	79.2	313	85.5	38	77.6	0.137
21. Recording the above-mentioned tasks in the care plan	93	85.3	353	91.1	44	81.5	0.029
22. Catheterization	58	58.0	246	68.2	21	43.8	0.001
23. Inserting a urinary catheter	47	48.0	219	62.8	16	32.7	<0.001
24. Removing a urinary catheter	90	83.3	317	87.4	37	77.1	0.093
25. Flushing the urinary tract and bladder	54	60.0	192	63.8	12	33.3	0.002
26. Monitoring intestine sounds	30	33.3	164	56.9	13	37.1	<0.001
27. Calculation of fluid balance	70	68.6	233	69.9	22	51.2	0.042
28. Evaluating the amount of amniotic fluid	0	0	22	20.6	1	10.0	0.008
29. Evaluating the quality of amniotic fluid	1	2.7	23	21.7	1	10.0	0.020
30. Recording the above-mentioned tasks in the care plan	31	53.4	184	78.2	23	74.2	<0.001

Number of missing responses varies per item; some respondents chose the option: we do not have this task in our unit and some respondents did not wish to answer

*Activities that are considered part of (n,%) the work duties of practical nurses according to practical nurses (PNs) themselves, registered nurses (RNs) and nurse managers.

Table 6. Activity, sleep and rest

Activity, sleep and rest	PNs* (n=121)		RNs* (n=472)		Nurse managers (n=67)		p
	yes		yes		yes		
	n	%	n	%	n	%	
1. Evaluating the risk of decubitus using BRADEN*	28	41.8	104	53.3	11	36.7	0.096
2. Evaluating and recording findings concerning patient's positions and kinesiotherapy	88	84.6	322	92.3	42	87.5	0.056

Number of missing responses varies per item; some respondents chose the option: we do not have this task in our unit and some respondents did not wish to answer

*Activities that are considered part of (n,%) the work duties of practical nurses according to practical nurses (PNs) themselves, registered nurses (RNs) and nurse managers.

Table 7. Teaching, guidance in care, follow-up care and emotional support

Teaching, guidance in care, follow-up care and emotional support	PNs* (n=121)		RNs* (n=472)		Nurse managers (n=67)		p
	yes		yes		yes		
	n	%	n	%	n	%	
1. Teaching the patient measures related to the care of the illness	76	79.2	187	68.5	35	76.1	0.107
2. Recording the above-mentioned tasks in the care plan	88	84.6	247	77.2	45	86.5	0.115
3. Evaluating the patient's capacity to communicate and receive information and recording it in the nursing plan	88	83.8	309	83.3	41	80.4	0.855
4. Teaching the patient's closest relatives to use the care tools	53	60.9	339	88.7	22	56.4	<0.001
5. Teaching the patient's closest relatives measures related to the care of the illness	62	69.7	188	66.0	30	68.2	0.798
6. Recording the above-mentioned tasks in the care plan	71	75.5	219	71.6	37	77.1	0.598

Number of missing responses varies per item; some respondents chose the option: we do not have this task in our unit and some respondents did not wish to answer

*Activities that are considered part of (n,%) the work duties of practical nurses according to practical nurses (PNs) themselves, registered nurses (RNs) and nurse managers.

Table 8. Miscellaneous tasks

Miscellaneous tasks	PNs* (n=121)		RNs* (n=472)		Nurse managers (n=67)		p
	yes		yes		yes		
	n	%	n	%	n	%	
1. Assisting doctors with procedures	75	72.1	68	100.0	37	63.8	<0.001
2. Assisting RN / midwife / radiotherapist / with procedures	102	95.3	308	77.6	52	91.2	<0.001
3. Escorting patients independently to operating theatre	39	44.3	372	93.0	22	47.8	<0.001
4. Transporting patients independently to other units	78	79.6	211	60.8	39	78.0	<0.001
5. Follow-up during the operation	66	73.3	275	74.7	30	63.8	0.281
6. Follow-up after the operation	94	87.9	256	72.7	39	76.5	0.006
7. Taking blood samples	1	1.2	337	85.5	3	7.0	<0.001
8. Zeroing of the artery or CVP pressure sensor after change of the patient's position	16	25.4	122	38.7	6	28.6	0.101
9. Taking blood samples from the artery cannula	10	14.3	129	64.5	7	29.2	<0.001
10. Flushing the artery cannula	13	17.6	123	58.3	8	32.0	<0.001
11. Removing the artery cannula	16	21.3	125	59.5	9	36.0	<0.001
12. Making appointments for the patient	25	26.9	135	62.2	19	45.2	<0.001
13. Ordering laboratory tests and printing labels for samples	107	92.2	127	46.0	47	81.0	<0.001
14. Undertaking patient classification	49	50.0	357	86.7	28	57.1	<0.001
15. Recording the above-mentioned tasks in the care plan	97	86.6	214	62.2	50	49.3	<0.001
16. Ordering items from central storage	71	72.4	351	86.9	47	79.7	0.002
17. Putting away items from central storage	84	82.4	284	74.0	52	85.2	0.051
18. Ordering instruments	67	66.3	321	79.9	36	65.5	0.003
19. Checking and troubleshooting equipment	103	90.4	259	69.4	55	87.3	<0.001
20. Checking and carrying out instrument maintenance	70	70.7	375	90.8	44	77.2	<0.001

Number of missing responses varies per item; some respondents chose the option: we do not have this task in our unit and some respondents did not wish to answer

*Activities that are considered part of (n,%) the work duties of practical nurses according to practical nurses (PNs) themselves, registered nurses (RNs) and nurse managers.

Nutrition and medication

Nutrition and medication was the most extensive of the categories, containing 32 tasks, and the deviation in the answers was also larger. The RN group mainly considered the tasks to be included in the PNs' duties more often than did the practical nurses themselves. The biggest differences were in giving intramuscular

injections (PNs 14.4%, RNs 47.2%), venous cannulation (PNs 5.4%, RNs 44.1%) and updating the drug list (PNs 13.0%, RNs 44.7%). The RN group considered the tasks to be PN duties in 26 cases out of 32. The nurse managers considered the tasks more often to be PN duties only in five cases out of 32. These groups' assessments differed significantly for 20 tasks (Table 4).

Personal hygiene and secretion

The fourth category, *personal hygiene and secretion*, consisted of 30 tasks. The RN group more often considered the tasks to be PN duties in every case. The nurse managers considered the tasks more often to be the duties of PNs in 13 cases out of 30. These groups' perceptions differed significantly for 24 tasks.

The tasks that PNs reported they performed most commonly were making up the isolation room (84.9%), rinsing a wound (83.3%) and removing a urinary catheter (83.3%), while tasks related to amniotic fluid were carried out less frequently (Table 5).

Activity, sleep and rest and teaching, guidance in care and follow-up care and emotional support

The last two categories were *activity, sleep and rest* and *teaching, guidance in care, follow-up care and emotional support*. The tasks in the last category were connected to counselling patients and relatives and these tasks were frequently carried out by PNs (60.9 % to 79.2%) (Tables 6 and 7). In the questionnaire, there were eight questions related to counselling. Tasks such as teaching the patient about measures related to their care (79.2%) or counselling the patient on wounds (79.2%) were widely performed by PNs. The lowest result was seen in counselling the patient on medication (37.9%).

Miscellaneous tasks

The category *miscellaneous tasks* included duties that did not necessarily require having a nursing education. The RN group considered the tasks to belong more often to the duties of PNs in 13 cases out of 20. Furthermore, nurse managers considered the tasks more often to be the duty of PNs in 11 cases out of 20. These groups' perceptions differed significantly for 17 tasks. Practical nurses reported doing many non-nursing tasks: for example, checking and troubleshooting equipment (90.4%), putting away items (82.4%), transporting patients (79.6%), ordering items (72.4%), and checking and carrying out instrument maintenance (70.7%) (Table 8). RNs considered these tasks to be part of the PNs' duties less often than the PNs themselves (Table 8).

Summary

According to these results, the RN group mainly considered these tasks to be PNs' duties more

often than the practical nurses themselves. In the case of 106 tasks out of 128, the RN group more often considered that the tasks were part of the duties of the PNs than did the PNs themselves; the percentage was smaller for only 23 tasks.

The nurse managers group considered that the tasks were part of the practical nurses' duties less often than the PNs themselves. The RNs' and nurse managers' reports of PNs' work differed from the PNs' own reports for the majority of the tasks. The responses of different groups (PNs, RNs, nurse managers) differed significantly ($p < 0.05$) for 77 tasks out of 128, which is 60.2% of the tasks.

We also looked at the results according to PNs' age and work experience. The data indicated that in 56 out of 128 tasks, PNs aged 50 years or older considered the tasks to be included in their duties more often than the younger PNs did. Among the group of older PNs (>50 years), most (90%) of them had more than 20 years of work experience.

Discussion

The content of the practical nurses' work was assessed by three groups: practical nurses themselves, registered nurses, and nurse managers. The practical nurses reported that they performed a wide range of different tasks, but the groups' perceptions of the content of their work differed significantly. In the future, it is important to clarify the roles of each group as well as to ensure competences. When we have clear job descriptions for different occupational groups, we are able to avoid overlap and confusion with respect to tasks and this clarity leads to improved efficiency and productivity.

If we assume that the PNs' answers about their own work reflect what they really do at work, then one must ask why RNs assume that PNs do much more than is actually the case. When they work side by side in their various working units this presents quite a risk. One would have thought that when RNs and PNs work together, they would have a common view of the tasks they are carrying out. There is a possibility that some tasks are not carried out or that there may be a degree of overlap. In a study by White *et al.* (2008), there was considerable confusion about roles between RNs, LPNs and registered psychiatric nurses. Those authors suggested clarifying the distinct roles of RNs and LPNs because unclear roles result in overlap (White et

al., 2008). In our study, it is surprising that the role ambiguity is so great even though the study focuses on nurses in only one hospital district. A Canadian study (Lankshear et al., 2016) on the role clarity of practical nurses reported that there was a lack of knowledge within the scope of practice. The study also found that PNs were more knowledgeable about RNs' roles than RNs were about PNs' work (Lankshear et al., 2016). In our study the older group (>50 years) of practical nurses considered that the tasks listed in the questionnaire were part of their duties more often than the younger group (<40 years). This was true especially in the category *planning and coordination of care*. A study by Meretoja *et al.* (2015) found that high competence scores for nurses were related to longer work experience. In our study, 90% of those in the older PN group had over 20 years of work experience, and this may help to explain the higher percentages in their perceptions of tasks that are within their remit.

The results revealed that the nurse managers rated the tasks considered as belonging to the duties of PNs less often than the PNs themselves. The nurse managers' role is quite demanding as they have to understand the skills and knowledge of the staff overall (Duffield et al., 2010) as well as each health worker's job description. However, our results indicate that the nurse managers were not aware of the scope of the PNs' work. They obviously need more information about practical nurses' education and current tasks.

Our findings show that PNs had duties which were technically and intellectually demanding and they also undertook tasks which required psychosocial and communication skills, because tasks relating to counselling patients were widely performed. In the study by Shuriquie, While and Fitzpatrick (2008) concerning Jordanian nurses, the results differed from our study because they found the work of practical nurses to be intellectually and technically less demanding and they were not perceived as playing any role in the psychosocial domain of nursing. This difference may be due to the different educational backgrounds of practical nurses in the studies.

Our study indicated that less frequently performed tasks were related to drug therapy. This may be due to the fact that, in 2012, we did not have medication exams and screening as

standard practice for practical nurses. In practice, the biggest difference between PNs' and RNs' work is related to drug therapy: only RNs' education allows them to administer intravenous drugs to patients. The data also revealed that, unfortunately, more than 70% of PNs were performing non-nursing duties. The result is similar to studies by Hinno, Partanen and Vehvilainen-Julkunen (2012) and Bekker, Coetzee and Klopper (2015), in which nurses were frequently found to perform non-nursing tasks. This reduces the time spent face-to-face with patients (Snyder & McDermott, 2009) and also causes nursing activities to be neglected (Hinno, Partanen & Vehvilainen-Julkunen, 2012). In a study by Aiken *et al.* (2013), nurses were also found to suffer from lack of time and many nursing tasks were left undone. May (2012) suggests that some of the tasks that do not require healthcare workers could be delegated to more narrowly skilled workers so as to free nurses up to work to the best extent of their education and expertise.

Conclusion

This study highlights the importance of division of labour from the point of view of work development, management and education. Both managers and registered nurses need more information about practical nurses' education. The work needs to be reorganized.

Nurse managers need to base their decisions on scientific evidence and they need support to apply existing evidence. The goal is not to create very precise task-oriented job descriptions, but to define the interface between the work of registered nurses and that of practical nurses. This would reduce overlap and confusion with respect to various tasks and would have an impact on quality of care and patient safety. Consistent job descriptions are a prerequisite for appropriate division of labour, which promotes productivity and efficiency in healthcare.

This study shows that, in addition, non-nursing tasks should be reorganized, drawing on input from support services. Further research is needed to clarify the concept of division of labour and to gain a consensus about job descriptions.

Limitations

This study has some limitations. First, the participants were from a single hospital district, which reduces the generalizability. Secondly, the overall response rate was modest. If we look at

the groups separately, the response rates for PNs (48%) and managers (62%) were higher, while that of the RN group was only 30%, but as this was the largest group, the overall response rate was only 34%.

The non-responders were mainly (87%) registered nurses. It is possible that the tasks carried out by PNs were not considered of high enough priority for many RNs to participate or that the questionnaire was considered too long. Thirdly, the data were collected in 2012, but since then medication exams and screening have become standard practice, although there have been no other major changes.

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References

- Aiken, L.H., Sloane, D.M., Bruyneel, L., Van den Heede, K. & Sermeus, W. (2013) Nurses' reports of working conditions and hospital quality of care in 12 countries in Europe. *International Journal of Nursing Studies* 50, 143-153.
- Antinaho, T., Kivinen, T., Turunen, H. & Partanen, P. (2015) Nurses' working time use? How value adding it is? *Journal of Nursing Management* 23, 1094-1105.
- Bach, S., Kessler, I. & Heron, P. (2008) Role redesign in a modernised NHS: the case of health care assistants. *Human Resource Management Journal* 18, 171-187.
- Baumann, A. (2013) What's in a name? The importance of definition and comparable data. *International Nursing Review* 60, 75-77.
- Bekker, M., Coetzee, S. & Klopper, H. (2015) Non-nursing, nursing tasks left undone and job satisfaction among professional nurses in South African hospitals. *Journal of Nursing Management* 23, 1115-1125.
- Buchan, J. & Aiken, L. (2008) Solving nursing shortages: a common priority. *Journal of Clinical Nursing* 17, 3262-3268.
- Buchan, J. & Dal Poz, M. (2002) Skill mix in the health care workforce: reviewing the evidence. *Bulletin of the World Health Organization* 80, 575-580.
- Chaboyer, W., Wallis, M., Duffield, C., Courtney, M., Seaton, P., Holzhauser, K., Schluter, J. & Bost, N. (2008) A comparison of activities undertaken by enrolled and registered nurses on medical wards in Australia: An observational study. *International Journal of Nursing Studies* 45, 1274-1284.
- Conway, J. & Kearin, M. (2007) The contribution of the Patient Support Assistant to direct patient care: An exploration of nursing and PSA role perceptions. *Contemporary Nurse* 24, 175-188.
- Currie, E.J. & Carr-Hill, R.A. (2013) What is a nurse? Is there an international consensus? *International Nursing Review* 60, 67-74.
- Delamaire, M. & Lafortune, G. (2010) Nurses in Advanced Roles: A Description and Evaluation of Experiences in 12 Developed Countries. OECD Health Working Papers. No 54 OECD Publishing, Paris.
- Duffield, C., Roche, M., Diers, D., Catling-Paull, C. & Blay, N. (2010) Staffing, skill mix and the model of care. *Journal of Clinical Nursing* 19, 2242-2251. DOI: 10.1111/j.1365-2702.2010.03225.x.
- Fagerström, L., Lønning, K. & Andersen, M.H. (2014) The RAFAELA system: a workforce planning tool for nurse staffing and human resource management. *Nursing Management* 21, 30-36.
- Franco, L.M., Bennett, S. & Kanfer, R. (2002) Health sector reform and public sector health worker motivation: a conceptual framework. *Social Science & Medicine* 54, 1255-1266.
- Hinno, S., Partanen, P. & Vehviläinen-Julkunen, K. (2012) Nursing activities, nurse staffing and adverse patient outcomes as perceived by hospital nurses. *Journal of Clinical Nursing* 21, 1584-1593.
- Hukkanen, E. & Vallimies-Patomaki, M. (2005) Co-operation and division of labour in securing access to care. A survey of the pilot projects on labour division carried out within the National Health Care Project Helsinki 2005. Available at: <http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/72423/Selv200521.pdf?sequence=1> (accessed 4 April 2016).
- Kessler, I., Heron, P. & Dopson, S. (2013) Indeterminacy and the Regulation of Task Allocation: The Shape of Support Roles in Healthcare. *British Journal of Industrial Relations* 51, 310-332.
- Kinnunen, U.M., Junttila, K., Liljamo, P., Sonminen, A., Harkönen, M. & Ensio, A. (2014) FinCC and the national documentation model in EHR – user feedback and development suggestions. *Stud Health Technol Inform* 201, 196-202.
- Lankshear, S., Rush, J., Weeres, A. & Martin, D. (2016) Enhancing role clarity for the practical nurse: A leadership imperative. *Journal of Nursing Administration* 46, 300-307.
- Liljamo, P., Lavander, P. & Kejonen, P. (2015) Nursing personnel staffing project in the Northern Ostrobothnia Hospital District. Available at: https://www.ppshp.fi/instancedata/prime_product_julkaisu/npp/embeds/35424_Julkaisu_1_2015_julkaisusarja.pdf (accessed 16 September 2016).
- May, E.L. (2012) Boosting Clinical Productivity. *Healthcare Executive* 27, 9-15.

- Meretoja, R., Numminen, O., Isoaho, H. & Leino-Kilpi, H. (2015) Nurse competence between three generational nurse cohorts: A cross-sectional study. *International Journal of Nursing Practice* 21, 350-358. DOI: 10.1111/ijn.12297.
- Milson Hawke, S. & Higgins, I. (2004) The scope of enrolled nurse practice: A grounded theory study. *Contemporary Nurse* 17, 44-62.
- Shuriquie, M., While, A. & Fitzpatrick, J. (2008) Nursing work in Jordan: An example of nursing work in the Middle East. *Journal of Clinical Nursing* 17, 999-1010.
- Snyder, K. & McDermott, M. (2009) A Rural Hospital Takes on Lean. *Journal of Healthcare Quality* 31, 23-28.
- Spilsbury, K. & Meyer, J. (2004) Use, misuse and non-use of health care assistants: Understanding the work of health care assistants in a hospital setting. *Journal of Nursing Management* 12, 411-418.
- Walker, K., Donoghue, J. & Mitten-Lewis, S. (2007) Measuring the impact of a team model of nursing practice using work sampling. *Australian Health Review: A Publication of the Australian Hospital Association* 31, 98-107.
- White, D., Oelke, N.D., Besner, J., Doran, D., McGillis Hall, L. & Giovannetti, P. (2008) Nursing scope of practice: descriptions and challenges. *Nursing Leadership (Toronto, Ont.)* 21, 44-57.
- WHO 2006 (2006) *The World Health Report 2006 - Working Together for Health*. WHO Press. Geneva. Available at: [Http://apps.who.int/iris/bitstream/10665/43432/1/9241563176_eng.Pdf](http://apps.who.int/iris/bitstream/10665/43432/1/9241563176_eng.Pdf) (accessed 13 October 2015).