

Nursing students' perception of infection control and prevention nurses' work – results of a survey study

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Short report

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Abstract

Background The results of several studies in the area of infection control in Poland are disturbing. The situation may be shaped by many factors. But the key factor is the infection teams and especially infection control and prevention nurses (ICPNS) ability of influencing positive medical personnel attitudes and behavior in this area. **Aim of the study** The article presents the results of the study on nursing students' perception of ICPNs work. **Material and method** The study was conducted using the author's anonymous questionnaire conducted among nursing students of three Polish universities. **Results** The results proved to be peculiar. About 80% respondents confirmed the ICPNs key role in ensuring patient and personnel safety, while only 31.6% declared its great authority among the hospital staff. **Conclusions** Obtained results indicate the necessity of thorough studies on the organization and structure of infection control in Polish hospitals, with particular emphasis of building its' positive perception by wards staff as well as implementing education campaign on infection control in hospital environment.

Introduction

Effective surveillance of infections is based primarily on competent staff: infection control and prevention nurses (ICPN), physicians and microbiologists, comprising infection control teams. In Poland, despite two decades of tradition as regards up-to-date surveillance of hospital-acquired infections, some of the highest incidence rates are recorded with respect to *Clostridium difficile* and the proportion of multi-drug resistant strains isolated from invasive infections [1, 2]. There is also an alarming epidemiological situation with regard to bloodstream infections and, probably, ineffective registration of infections [1, 2]. The epidemiological situation is shaped by many factors, including organizational, patients characteristics and funding. However, the ability of infection control team members, especially infection control nurses of cooperation with wards' staff seems to be a key factor.

But, Polish infection control and prevention nurses, claim that they frequently experience problems in cooperation with various groups of hospital workers and that the changes that are taking place with respect to infection control are not positive [5, 6]. Additionally, only about half of nurses with specialization in IC work in this position.

The objective of this study was to obtain information on how Polish nursing students perceive the function of an infection control and prevention nurse as they are generally the people with professional experience and potentially interested in taking up such work. This study was conducted as a part of the research aiming to describe the medical staff attitudes towards infection control.

Material And Method

A questionnaire study was carried out among nursing students of three universities educating students in the field of nursing in the Małopolska province. The original questionnaire was anonymous and asked the participants of the study about their willingness to work as ICPN and how they perceive the work on this position. In order to obtain the opinion of nursing students on the work of an ICPN, the respondents were asked to confirm or deny the following statements: a – the work of an ICPN is of key importance in providing patient safety, b – ICPNs are helpful in implementing procedures, c – the work of an ICPN is helpful in ensuring safe work conditions for the staff of the ward, d – the work of ICPNs enjoys great authority among hospital staff, e – the work of ICPNs is burdensome for the staff of the wards. For the purposes of demographic characteristics of the respondents, the questionnaire also contained questions on respondents' age, type of study, work experience and apprenticeships held.

The statistical analysis of the results obtained employed descriptive and statistical inference methods. The analysis of variable qualitative characteristics was carried out by calculating the number and percentage of occurrences for each value. To characterize the average value for age and seniority of the respondents, the mean, median and standard deviation were calculated. The analysis of differences was carried out with the Pearson chi-square test for qualitative characteristics and the ANOVA test for quantitative characteristics. The level of significance was assumed as $p < 0.05$. The analysis employed the following statistical software: IBM SPSS (Statistical Package for the Social Sciences – SPSS) STATISTICS 24, Armonk, NY, USA and Microsoft Excel Microsoft Office 2016 Redmond, WA, USA.

The use of data was approved by the Bioethical Committee of Jagiellonian University (No. KBET/122.6120.124.2016).

Results

The survey encompassed 256 students (5 men (2%) and 251 (98%) women) of full-time (31.4%) and part-time (68.6%) studies, aged 20–58 years (median = 26 years). They were mostly post-graduate students (80.9%) and people who work, or had worked, as nurses (81.9) with work experience from 1 month to 37 years (median: 10 years). Almost 15% of respondents declared potential willingness of work as ICPN.

The vast majority of respondents admitted that, in their opinion, the work of an ICPN is of key importance in ensuring patient safety and that it is helpful in providing safe work conditions for the staff of the ward, and that ICPNs are helpful in implementing procedures (respectively, 79.4%, 83.4% and 84.6% of the respondents). At the same time, 52.6% of the respondents declared that the work of an ICPN is burdensome for the personnel of the wards and only 31.6% concluded that ICPNs' work enjoys great authority among the hospital staff. Such opinions were significantly more often expressed by respondents with shorter work experience. There was no significant correlation between the willingness to take up work as an ICPN and the distribution of answers to any of the questions. This concerned the questions declaring the role of ICPN for the safety of patients and staff as well as the ones on their authority among the personnel and burdensomeness for the ward (Table 2).

Factors significantly correlating with the type of response to the majority (3 or 4 out of five) of questions about the perception of ICPNs' work was also the respondents' age and work experience. Overall, people aged 30 years and older and with work experience of more than 10 years perceived the work of ICPNs more favorably. They more frequently declared that their work enjoys great authority among hospital staff, is of key importance for patient safety and is helpful in implementing procedures.

Discussion

The results obtained, i.e. the fact that only around 30% of respondents declared that the work of an ICPN enjoys great authority among hospital staff, despite the fact that the majority of them consider this work to influence the improvement in patient and staff safety, should be regarded disturbing. The study was conducted on a relatively small group of nursing students, the majority of whom, however, were people working as nurses and, therefore, familiar with the realities of work in Polish hospitals. Hence, a hypothesis can be put forward that these results are a good reflection on the atmosphere and organizational conditions which the Polish infection control teams, especially epidemiological nurses, operate in. The results of research on the epidemiology of hospital-acquired infections in Poland, as well as on the knowledge and practice of hand hygiene among nurses and physicians, confirm that infection control, including the work of epidemiological nurses, is not appreciated. This is probably, among other things, due to organizational culture of Polish hospitals, which are typical highly hierarchical organizations, with a great deal of power distance, masculinity and uncertainty, i.e. places in which nurses, who are predominantly women, do not enjoy high authority and, consequently, their influence on effective implementation of infection control programs is limited [7]. However, the results obtained also probably indicate a problem with the form and direction of the development of infection control in Poland, which engages infection control and prevention nurses excessively with reference to reporting infections and shifts the attention of these activities to the area of hygienic supervision, instead of the area of daily support for medical workers in the compliance of procedures aimed at preventing infections. On the other hand, a positive observation is the fact that older respondents and the ones with longer seniority declared a little more frequently that ICPNs enjoy great authority among the staff and less often stated that their work is burdensome for the wards. Perhaps, in their professional career, they more often encountered situations in which IPCN turned out to be helpful.

Additionally, the conclusion from the study is that there is a need of conducting complex and thorough studies on organization and challenges of infection control in Polish hospitals or even in the central-eastern European countries.

Declarations

Ethics approval and consent to participate

The use of data was approved by the Bioethical Committee of Jagiellonian University (No. KBET/122.6120.124.2016)

Consent for publication

Not applicable

Availability of data and material

The datasets used and/or analysed during the current study are available from the corresponding author upon reasonable request

Competing interests

The authors declare that they have no competing interests

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Authors' contributions

AR, JWM – planned the survey and drafted the manuscript; DJ – prepared the manuscript; AG – collected data and drafted the manuscript; MW – collected data and performed statistical analysis, AS – collected data

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Not applicable

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Tables

Table 1. Respondents' characteristics according to age and work experience

Respondents' characteristics							
	Age				Work experience in years		
	Number for age/ number for work experience	average	SD (standard deviation)	median	average	SD (standard deviation)	median
Mode of studies							
Extramural	169/ 165	35.88	10.522	39.00	13.74	11.252	17.00
Full time	80/ 32	24.66	5.356	23.00	32	7.000	1.00
Total	250/ 198	32.33	10.583	26.00	198	11.210	10.50
ANOVA (p)	p<0.001				p<0.001		
Type of studies							
Bachelor's	20/ 5	29.50	11.888	22.50	27.0	5.831	25.00
Master's	202/ 165	30.84	9.758	25.00	9.97	10.412	3.00
Bridging programme	28/ 28	45.11	5.724	45.50	23.11	7.685	23.00
Total	250/ 198	32.33	10.583	26.00	12.26	11.10	10.50
ANOVA (p)	p<0.001				p<0.001		
University							
A	133/ 118	37.36	10.356	40.00	16.72	10.545	20.00
B	27/ 18	28.70	8.765	25.00	8.28	10.151	2.50
C	90/ 62	25.99	7.026	23.00	4.92	8.121	1.00
Total	250/ 198	32.33	10.583	26.00	12.26	11.210	10.50
ANOVA (p)	p<0.001				p<0.001		
Current work as nurse							
No	48/ 43	23.00	2.370	23.00	Not applicable	Not applicable	Not applicable
yes	201/ 155	34.61	10.557	37.00	12.26	11.210	10.50
total	250/ 198	32.33	10.583	26.00	12.26	11.210	10.50
ANOVA (p)	p<0.001				p<0.001		
specialization							
No	208/ 155	29.95	9.696	24.00	9.26	10.303	2.00
yes	41/ 43	44.66	4.773	44.00	23.07	6.881	24.00
total	250/ 198	32.33	10.583	26.00	12.26	11.210	10.50
ANOVA (p)	p<0.001				p<0.001		
Declaration of interest as ICPN							
No	211/ 165	31.96	10.515	25.00	11.83	11.058	10.00
yes	39/ 33	34.33	10.864	37.00	14.39	11.890	20.00
Ogółem	250/ 198	32.33	10.583	26.00	12.26	11.210	10.50
ANOVA (p)	p=0.199				p=0.231		

Table 2. Respondents opinion on the role of ICPN

	the work of an ICPN is of key importance in providing patient safety				ICPNs are helpful in implementing procedures				the work of an ICPN is helpful in ensuring safe work conditions for the staff of the ward				the work of ICPNs enjoys great authority among hospital staff				the work of ICPNs is burdensome for the staff of the wards			
	no answer	no	yes	Pearson's Chi-square	no answer	no	yes	Pearson's Chi-square	no answer	no	yes	Pearson's Chi-square	no answer	no	yes	Pearson's Chi-square	no answer	no	yes	Pearson's Chi-square

Type of studies

Bachelor's	4/20.0	1/5.0	15/75.0	0.03	3/15.0	2/10.0	15/75.0	0.18	3/15.0	2/10.0	15/75.0	0.27	3/15.0	10/50.0	7/35.0	0.16	4/20.0	8/40.0	8/40.0	0.14
Master's	9/4.4	34/16.6	162/79.0		12/5.9	21/10.2	172/83.9		11/5.4	24/11.7	170/82.9		12/5.9	133/64.9	60/29.3		12/5.9	82/40.0	111/54.1	
Bridging programme	2/7.1	2/7.1	24/85.7		1/3.6	0/0.0	27/96.4		1/3.6	1/3.6	26/92.9		1/3.6	14/50.0	13/46.4		1/3.6	13/46.4	14/50.0	

Age

No data	0/0	1/33.3	2/66.7	0.01	0/0	1/33.3	2/66.7	0.04	0/0	0/0	3/100	0.33	0/0	2/66.7	1/33.3	0.01	0/0	0/0	3/100.0	0.07
Less than 40 years	6/4.3	29/21.0	103/74.6		5/3.6	17/12.3	116/84.1		6/4.3	19/13.8	113/81.9		6/4.3	99/71.7	33/23.9		6/4.3	52/37.7	80/58.0	
40 years or more	9/8.0	7/6.3	96/85.7		11/9.8	5/4.5	96/85.7		9/8.0	8/7.1	95/84.8		10/8.9	56/50.0	46/41.1		11/9.8	51/45.5	50/44.6	

Work

experience

in years

No data	5/9.1	7/12.7	43/78.2	0	4/7.3	4/7.3	47/85.5	0.01	4/7.3	6/10.9	45/81.8	0.08	4/7.3	40/72.7	11/20.0	0.01	4/7.3	17/30.9	34/61.8	0.03
Less than 10 years	1/1.0	24/24.2	74/74.7		1/1.0	15/15.2	83/84		2/2.0	15/15.2	82/82.8		2/2.0	68/68.7	29/29.3		2/2.0	41/41.4	56/56.6	
10 years and more	9/9.1	6/6.1	84/84.8		11/11.1	4/4.0	84/84.8		9/9.1	6/6.1	84/84.8		10/10.1	49/49.5	40/49.5		11/11.1	45/45.5	43/43.4	

Declaration

of the

interest in

work as

ICPN

no	13/6.1	36/16.8	165/77.1	0.06	12/5.6	20/9.3	182/85.0	0.53	12/5.6	25/11.7	177/82.7	0.44	13/6.1	146/68.2	55/25.7	0	13/6.1	83/38.8	118/55.1	0.11
yes	2/5.1	1/2.6	36/92.3		4/10.3	3/7.7	32/82.1		3/7.7	2/5.1	34/87.2		3/7.7	11/28.2	25/64.1		4/10.3	20/51.3	15/38.5	
total	15/5.9	37/14.6	201/79.4		16/6.3	23/9.1	214/84.6		15/5.9	27/10.7	211/83.4		16/6.3	157/62.1	80/31.6		17/6.7	103/40.7	133/52.6	