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Medical Staff Attitudes towards Expansion of Nurse Authority to Perform Peripheral Intra Venous Cannulation

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Abstract

Background: Socioeconomic, technological, and political developments have led to significant changes in the nursing profession in Israel. One major shift is the expansion of nurse authority.

Aims: To explore the attitudes of physicians and nurses in Israel towards the expansion of nurses' authority to perform Peripheral Intra Venous cannulation. In addition, the study evaluated the influence of physicians' and nurses' collaboration and the nursing image on the decision for expansion of nurse authority to perform PIV cannulation.

Methodology: Questionnaires were distributed to 100 Israeli physicians and 100 Israeli registered nurses using cross sectional correlation methods.

Results: Nurses' and physicians' attitudes towards expansion of nurse authority to cannulate were generally positive. The attitudes towards physician-nurse collaboration, nursing image, and the advantages of performing Peripheral Intra Venous cannulation by nurses, were found to be related to the respondents' attitudes towards expansion of nurses' authority to perform Peripheral Intra Venous cannulation.

Conclusion: Promotion of physician-nurse collaboration, a positive image of nursing, and advantages of performing Peripheral Intra Venous cannulation may improve the attitudes of both physicians and nurses towards the expansion of nurses' authority to perform Peripheral Intra Venous cannulation.

Keywords: expansion of authority, attitudes, Peripheral Intra Venous cannulation, physician-nurse collaboration

Introduction

Socioeconomic, technological, and political developments have led to significant changes in the nursing profession in Israel. One major shift is the increase of nurse authority, resulting in the delegation of

traditional physicians' roles to nurses (Riba, Greenberger, & Reches, 2004). Over the past twelve years, the Israeli Ministry of Health distributed several General Director Circulars, which have redefined certain medical procedures as nursing procedures, such as performing Peripheral Intra Venous

(PIV) (Natan, Dmitriev, Shubovich, & Sharon, 2013).

Nurses consider the expansion in nursing practice an upgrade to their professional profile (Riba et al., 2004). However, some nurses are concerned that the increase of medical chores can affect the main nursing values and duties. This has the potential to distance the patients from the nurses and lessen work satisfaction (Jones 003), and entails an additional workload (Harmer, 2010; Jones, 2003). Moreover, it increases responsibility and accountability (Harmer, 2010).

Research conducted in different countries on physicians' attitudes towards advanced practice nurses revealed a certain level of distrust for the inclusion of medical skills as a responsibility of nursing as well as doubting nurses' professional abilities (Blackwell & O'Neill, 2004; Goldberg, Rosen, Weiss, & Riba, 2012; Lauder, Sharkey, & Reel, 2003; Mackay, 2003; Norris & Melby, 2006). Norris and Melby (2006) state that some physicians do not believe that nurses have the capability of withstanding the necessary training. The physicians are also concerned with the changing of the new physician/nurse balance of authority. Israeli physicians as well responded with reservations to expanding the authority of Israeli nurses (Natan et al., 2013).

An understanding of the physician–nurse collaboration is essential for perceiving the new role changes for nurses (Jones, 2003). Collaborating between physicians and nurses has always been a complex issue. Historically, nurses have a subordinate status in medical practice, with the division of labor controlled by physicians. Becoming a good nurse was equated with the fulfillment of physicians' wishes and instructions (Churchman & Doherty, 2010).

Perception of the nursing image in Israel is built on collaboration between nurses and physicians (Goldberg et al., 2012). Physicians cure, nurses care (Hasson, 2008). The stereotyped images of physicians and nurses in society support the perception that

nurses exist to be subordinate to physicians. Historically and till this day, nurse managers and policy makers have created changes that will advance the image as well as the status of nursing. These new policies aspire create a parallel, professional partnership with physicians in which nurses are seen as self-governed practitioners (Hasson, 2008; Natan et al., 2013).

Although there is an extensive literature on physician–nurse collaboration, nursing image, and advantages of performing medical procedures by nurses, to date, the relative contribution of physicians' and nurses' perceptions of these on their attitudes towards the changing of nurse authority is briefly discussed. Positive attitudes towards expansion of nurse authority may subsequently improve collaboration between professions (Patterson & McMurray, 2003). One example of expansion of authority is performing Peripheral Intra Venous (PIV) cannulation by registered nurses.

PIV cannulation is a common invasive procedure for hospitalized patients (Lavery, 2003). PIV cannulation is a technique in which a cannula is placed inside a vein to allow sampling of blood, administration of fluids, medications, parenteral nutrition, chemotherapy, and blood products (Scales, 2008). This procedure requires clinical skills; if the procedure is not done carefully it may cause complications, such as phlebitis, extravasation and pain (Dougherty, 2008). As demonstrated by Hoctor (2009), PIV cannulation by nurses may help reduce waiting times and unnecessary punctures, since cannulation and drawing of blood samples are performed in the same puncture. Enhanced skills in cannulation when performed by nurses is beneficial for patients: continuous supervision and monitoring, recognition of potential complications and safe management of cannula (Lavery, 2003).

PIV cannulation is a medical procedure redefined as a new nursing procedure for registered nurses in Israel according to the Nursing Administration Circular distributed in 2001 by the Israeli Ministry of Health; at present, in Israel nurse performance of this

procedure is gradually increasing. It should be noted that defining this procedure as a nursing procedure does not award a nurse automatic authorization to perform it everywhere, since the local medical and nursing managements of each institution and department must give their own authorization to have the procedure performed by nurses (Nursing Administration Circular, 2001). Unfortunately, there is limited information about the reason for deciding to enable nurses to perform PIV cannulation. The aims of the present study were based on two guiding research questions: First, the study examined what are Israeli physicians' and nurses' attitudes towards the expansion of nurse authority to perform PIV. Secondly, the study evaluated what is the influence of physicians' and nurses' collaboration and the nursing image on the decision for expansion of nurse authority to perform PIV cannulation.

Methodology

Participants

The research was conducted in a large secondary hospital located in northern-central Israel with 495 beds, 200 physicians and 500 nurses. A convenience sample of 100 Israeli physicians and 100 Israeli registered nurses completed a questionnaire. The convenience sample method was chosen due to the fact that Israeli physicians have an extremely low rate of response in survey studies. Inclusion criterion was physicians and registered nurses working in departments where nurses are not authorized to cannulate. Sample size was calculated by determining the correlation in a univariate analysis of variance with the Power & Precision software. The sample size required for a 90% confidence interval with 95% accuracy is 200.

Measurement

The study instrument was a questionnaire constructed by the researchers based on the Jefferson scale of attitudes toward physician–nurse collaboration and literature review. It consisted of 32 questions, divided into 5 parts. The questionnaire was written in

Hebrew. It took respondents approximately 20 minutes to complete.

Part I was composed of 10 items and gathered sociodemographic and professional data on respondents (age, gender, nationality; profession, experience, workplace). Part II was composed of 9 items exploring perceptions of physician–nurse collaboration. It was based on The Jefferson scale of attitudes toward physician–nurse collaboration. Cronbach's alpha for the Jefferson scale was 0.76 (Hojat et al., 2003). The Likert scale in the Jefferson scale ranged from 1-"strongly disagree" to 4-"strongly agree". A higher total score reflected a more positive attitude towards physician–nurse collaborative relationships. Examples of typical items are: "There are many overlapping areas of responsibility between physicians and nurses". Permission to use the questionnaire was obtained from the authors of the original tool (Hojat et al. 2003). Part III was composed of 5 items exploring perceptions of the nursing image. Examples of typical items are: "Nurses have a great deal of knowledge". Part PIV was composed of 6 items exploring perceptions of advantages of performing peripheral intravenous cannulation by nurses. Examples of typical items are: "Nurses have good hand skills". Part V was composed of 2 items exploring attitudes towards expansion of nurse authority to perform this procedure. An example of a typical item is: "Nurses should be awarded the authority to perform peripheral intravenous cannulation". In parts II-V, answers were provided on a Likert scale ranging from 1-"strongly disagree" to 4-"strongly agree." Parts III- V were developed based on literature review. The questionnaire was validated by four experts and their comments were included in the final form. The revised questionnaire was piloted among 10 physicians and 10 nurses. Because no changes were made to the instrument after the pilot study, the pilot respondents were subsequently included in the total sample. The questionnaire face validity and internal consistency were satisfactory. Cronbach's alpha for the subscales ranged between 0.74-0.88.

Analysis and Procedure

This study was approved by the facility Helsinki Committee. The purposes of the study were explained to all participants before administering the questionnaire. The study was undertaken with the understanding and written consent of each participant and each of the respondents was assured anonymity and promised that research findings would only be used for purposes of the present study.

The questionnaire was distributed by the researchers among respondents during departmental staff meetings and collected from them when completed. The data were collected between January and March 2013. Two hundred and forty questionnaires were distributed to physicians and nurses, 100 questionnaires were fully completed by physicians and 100 by nurses, for a response rate of 83%.

SPSS package version 19 was used in the analysis of data. T-tests and chi-square tests were performed to determine the differences between physicians' and nurses' attitudes and perceptions. Pearson correlations were performed to determine the relationships between different perceptions and attitudes towards expansion of nurse authority to perform cannulation. Multiple linear regression was used to ascertain the model predictability. Statistical significance was set at $p < 0.05$.

Results

Sociodemographic and professional data

Among nurses, there were 69 women and 31 men. The mean age of nurses was 31.2 (SD = 11.2, range 22-62), with an average nursing experience of 7 years (SD = 10.9). Among physicians there were 67 men and 33 women. The mean age of physicians was 37.8 (SD = 12, range 26-63), with an average of 9.2 years (SD = 10.5) of experience. Half of the respondents were Jewish, and the other half were Arab; half of respondents were secular, and the other half were religious. Eighty percent were native-born.

Differences between physicians' and nurses' attitudes

Differences between physicians' and nurses' attitudes about expansion of nurses' authority to PIV cannulation are presented in Table 1. A T-test was performed to determine the differences between physicians' and nurses' attitudes. It shows that respondents tended to have a positive attitude towards expansion of nurse authority to cannulation, with no significant difference between physicians and nurses ($p > 0.05$). In contrast, significant differences were found between physicians' and nurses' attitudes towards nursing image ($p < 0.002$), advantages of cannulation by nurses ($p < 0.03$) and physician-nurse collaboration ($p < 0.001$). Nurses' attitudes towards performing cannulation by nurses, physician-nurse collaboration, and nursing image, were more positive than physicians'.

Table 2 presents statistically significant differences in physicians' and nurses' agreement with various statements. It shows that nurses more than physicians tended to agree with statements concerning physicians–nurse collaboration and advantages of cannulation by nurses. However, physicians more than nurses tended to agree with statements concerning the handmaiden role of nurses and their dependence on physicians.

Pearson correlations and multiple linear regression analysis

A moderate correlation was found between respondents' attitudes of physician-nurse collaboration ($r = 0.353$, $p < 0.01$), of the nursing image ($r = 0.203$, $p < 0.01$), of advantages of cannulation by nurses ($r = 0.329$, $p < 0.01$), and between attitudes towards expansion of nurses' authority to cannulation. Multiple linear regression analysis revealed that factors found to predict respondents' attitudes towards expansion of nurses' authority to cannulation are attitudes towards of physician-nurse collaboration and attitude of advantages of PIV cannulation by nurses (see Table 3). The model predictability demonstrated 40%.

Discussion

This study indicates that nurses' and physicians' attitudes towards expansion of nurse authority to cannulate were generally

positive. However, there were significant differences between their attitudes towards nursing image, advantages of cannulation by nurses and physician-nurse collaboration.

Table 1. T-tests for respondents' attitudes: Physicians vs. nurses

Variable	Physicians		Nurses		<i>t</i>	<i>p</i> -value
	M	SD	M	SD		
Expansion of nurse authority	3.4	0.6	3.5	0.5	0.3	0.15
Physician–nurse collaboration	3.0	0.4	3.5	0.3	-5.2	0.001**
Nursing image	2.9	0.4	3.7	0.6	-2.7	0.002**
Advantages of PIV cannulation by nurses	2.9	0.6	3.4	0.5	-6.0	0.03*

**Significant at $p < 0.01$; *significant at $P < 0.05$; range: 1-4.

Table 2. Chi-square test for respondents' agreement with various statements: Physicians vs. nurses

Statements	Physicians agree (<i>n</i>)	Nurses agree (<i>n</i>)	χ^2	<i>p</i> -value
<i>Physician-nurse collaboration</i>				
"There are many overlapping areas of responsibility between physicians and nurses"	65	82	10.8	0.03*
"Physicians and nurses should contribute to decisions regarding the hospital discharge of patients"	56	88	28.8	0.01*
<i>Nursing image</i>				
"Nurses are subservient to physicians"	37	29	23	0.01*
"Nurses obey physicians"	60	42	17.6	0.01*
<i>Advantages</i>				
"Nurse is more available than physician"	86	76	8.2	0.04*
"Nurses have professional knowledge of peripheral venous cannulation"	71	90	14.6	0.01*
"Nurse is more accessible than physician"	78	95	29.6	0.01*
"Nurses have good hand skills"	72	80	36.8	0.01*
"Nurses can monitor the side effects of peripheral intravenous cannulation more closely"	83	96	22.4	0.01*
"Cannulation by nurses prevents multiple punctures"	30	70	23.3	0.01*

*Significant at $p < 0.05$, *n* range 200, *df* = 3.

Table 3. Regression of independent variables on respondents' attitude towards expansion of nurse authority to IPV cannulate

Independent variable	B	β	t	p-value
Physician–nurse collaboration	0.35	0.23	3.06*	0.002*
Nursing image	0.11	0.09	1.37	0.171
Advantages of PIV cannulation by nurses	0.21	0.20	2.67*	0.008*

*Significant at $p < 0.01$.

This study reveals that physicians and nurses tended to agree that registered nurses should be awarded the authority to cannulate. This finding is not consistent with the findings of two previous Israeli studies were focused on the expansion of nurse' authority to prescribe long term medications. These studies found that nurses were more favorable towards expanding nurse authority than physicians (Brodsky & van Dijk, 2008; Goldberg et al., 2012). However, Riba et al. (2004) claimed that doctors will not let go of functions they view as challenging and prestigious. In return, doctors choose to delegate the less glamorous procedures to nurses in order to lessen their work load. Probably, PIV cannulation is one such less glamorous procedure, whose delegation to nurses does not arouse objection among physicians. This may explain the finding that physicians in the present study were in favor of expansion of nurse authority to perform cannulation. Additionally, Brodsky and van Dijk (2008) found that physicians were unfavorable about allowing nurses to fulfill tasks that were their responsibility particularly if the tasks affected patients' health. Although cannulation is a procedure that requires clinical skills, and may cause complications (Dougherty, 2008), it is probably not perceived by the physicians who participated in the present study as a complex procedure or one that might endanger patients' health if performed by nurses. Moreover, cannulation is a procedure that Israeli nurses have

already been performing in practice, long before it was defined as a nursing procedure (Riba, 2001).

The present study indicates that nurses had more positive attitudes towards physician–nurse collaborative relationship, than did physicians. This finding is consistent with those of previous studies (El Sayed & Sleem, 2011; Thomson, 2007; Yildirim et al., 2005). Nursing wishes for equal, professional partnership with physicians (Hasson, 2008). El Sayed and Sleem (2011) explained that the predominantly male physician group gives the orders for patient care, and the predominantly female nursing group carries out the orders. This concept can affect caregiver's attitudes towards physician–nurse collaboration. It seems that although the findings reveal a positive trend towards collaboration, Israeli physicians still stick to the old concepts regarding the physician–nurse relationship.

Some authors claim that before collaboration can take place, a number of personnel and environmental antecedents must occur. Personnel factors include readiness to engage in the process, understanding and acceptance of levels of expertise and role boundaries, confidence, and effective group dynamics (Patterson & McMurray, 2003). Reches (2010) claimed that the transition from a system with a clear hierarchy to a collaborative system with an egalitarian basis must be effected carefully and gradually, in

order to refrain from arousing physicians' objections. Israeli physicians often find themselves subservient to nurses who fulfill roles of management and supervision, including control of the quality of medical care provided to patients by physicians. Some express feelings of anger and are not inclined to collaborate with nurses in the new situation formed (38%).

The present study reveals that nurses' attitudes of the nursing image are more positive than physicians'. Both physicians and nurses tended to agree that nursing is a knowledgeable and respectable profession. However, 75% of physicians and nurses also tended to agree that nurses are subservient to physicians and obey them, and this trend was more pronounced among physicians. These findings revive the discussion of the physician-nurse relationship.

The findings reflect a complex reality where Israeli nursing on one hand fights for recognition as an entity with autonomous and unique knowledge that acts to promote social well-being, and on the other is historically subservient to medicine (Hasson, 2008). The findings show that quite a few physicians and nurses are captives in a web of stereotypes and see nurses as following orders rather than as equal partners in care.

The current study found a significant difference between physicians' and nurses' attitudes towards the advantages of cannulation by nurses, with physicians' attitudes being less positive. One possible reason is that the study was conducted in departments where nurses are not authorized to cannulate. Therefore, physicians cannot learn from the field about the advantages of nurse performance of the procedure. Goldberg et al. (2012) found that physicians working in departments where nurse authority has been expanded, were inclined to have favorable attitudes towards expansion of the authority of nurses compared to physicians in other departments. Kroezen et al. (2014) provided additional reinforcement by claiming that health professions that have experience with nurses whose authority has been expanded, express less opposition towards the phenomenon.

In the present study Israeli physicians' and nurses' attitudes towards physician-nurse collaboration, nursing image, and advantages of performing cannulation by nurses, were found correlated with their attitudes towards this expansion of authority. The multiple linear regression analysis revealed that two significant variables were physician-nurse collaboration and advantages of performing PIV cannulation. A possible explanation is that when physician-nurse collaboration exists, physicians view nurses as more skillful in performing caring procedures (Sirota, 2007).

The present study has several limitations. These include the cross-sectional design and non-probability sampling method, factors that may limit conclusions about causality and generalizability of the findings. Additionally, the research instrument was a self-report questionnaire, which may limit the validity of the findings.

Conclusion

The study findings suggest that promotion of physician-nurse collaboration, of a positive image of nursing, and of the advantages of cannulation by nurses may improve the attitudes of physicians towards this expansion of authority. Understanding nurses' and physicians' attitudes towards expansion of nurse authority to cannulate will help nursing managers to further the process of expanding nurse authority. Consideration of physicians' and nurses' attitudes in Israel and other countries will improve the quality of care provided, through enhancing collaboration between physicians and nurses. Nursing managers should encourage authorization of nurse cannulation in institutions where this is not yet permitted. Study findings also help further understanding of the advancement of nursing authority, and the ways in which professional development is contingent upon specific sociopolitical and cultural contexts.

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