

Nurses' Perception of Nurse-physician Communication: A Questionnaire-based Study in Iran

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Abstract

Background and Objectives: Effective nurse-physician communication is essential for provision of high quality clinical care. Research into nurse-physician communication is a new field in Iran, and the importance of the issue calls for further investigation. In response to this necessity, this study aimed to assess nurses' perception of nurse-physician communication in teaching hospitals affiliated with Hormozgan University of Medical Sciences, situated in Bandar Abbas, at the shore of the Persian Gulf.

Methods: In this cross-sectional study, 155 nurses were invited to complete the Persian version of the nurse-physician communication questionnaire, originally developed by Schmidt and Svarstad [Soc Sci Med 2002, 54:1767-1777.] The questionnaire comprises 18 items related to four dimensions of the construct, including Frustration with Interaction, Mutual Understanding, Openness, and Relevance and Satisfaction. One hundred and thirty valid questionnaires were returned and used for data analysis (response rate = 83.8%). Data were summarized using descriptive statistics, and t test and ANOVA were used to compare the mean scores between demographic groups. Data were analyzed using SPSS Version 13 Software. $P < 0.05$ was considered as statistically significant.

Findings: Nurse-physician communication scored marginally higher than mid-level (53.8%). The dimensions of nurse-physician communication (sub-scales) were rated as follows: Frustration with Interaction: 77%; Mutual Understanding 65%; Openness: 47%, and Relevance and Satisfaction: 42%. Hence, the two latter dimensions can be considered as the prime points of focus for interventions, based on both absolute and relative ratings. In comparison with their male counterparts female nurses perceived their communication with physicians to be more positive ($P = 0.017$). Nurses with professional work experience more than 20 years had a better perception of nurse-physician communication relative to other work experience groups ($P < 0.01$). No significant difference in perception of nurse-physician communication was identified between different educational and age groups.

Conclusions: Within the limitations of the study, this quantitative evaluation of nurse-physician communication in Iran does not represent a satisfactory outlook. Survey results indicate the need for large-scale and in-depth studies to determine the nationwide situation of this important health care issue.

Keywords: Nurse-physician Communication, Hospital, Healthcare Quality, Patient Safety

Background and Objectives

Communication and collaboration between different health professionals is a hallmark of health care quality [1], and a determinant of patients' wellbeing [2]. Among the most extensively explored health care interprofessional communications is communication between physician and nurse, given their primary responsibilities for patient care [3]. Evidence shows that successful Nurse-physician Communi-

cation (NPC) is associated with positive attitudes of nurses and physicians towards patients [4], and consequently higher quality of health care [5, 6]. Conversely, breakdown of coordinated and positive interaction between these two groups of professionals has been shown to lead to unhealthy work environments and poor patient outcomes [7-9]. A particular aspect of health care that is severely affected by NPC is the safety of patient care [1, 9-12]. Combined qualitative and quantitative analyses link the status of safety culture to the level of nurse satisfaction in their communication with physicians [13]. It is evident that many hazards of patient care can be eliminated if NPC difficulties are reduced [8, 11, 14].

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In addition to safety, studies also identified links between NPC and other dimensions of health care. Several investigations indicated the association of nurses' satisfaction and perception of their work-life quality with their perceived communication with physicians [15, 16]. The importance of these factors to nurse recruitment, retention and productivity, thereby the performance of health care, has been established [15, 17]. Communication skills are also a critical prerequisite to successful interprofessional teamwork and collaborative process that are crucial to both clinical practice and health care outcomes [18, 19]. These facts point to NPC as a clinical factor of extreme importance needing substantial support from clinical managers if they aim to realize efficient and high quality health care.

Despite that the impact of interdisciplinary communication on safe and effective care is well recognized [20, 21], building good communication between physicians and nurses remains a persistent challenge [8, 16, 20]. Studies show that establishing a clear and complete communication between these two groups of professionals is not easy to achieve [22], and an inadequate nurse-physician relationship will continue to produce adverse outcomes for patients [23]. To understand the reason, the complexity of NPC [22] should be recognized in terms of both context and content [9, 13]. Patient care creates a difficult and stressful work context, which makes nurse-physician relationship prone to daily conflicts [24, 25]. A majority of these conflicts is induced by disparate expectations of nurses and physicians concerning roles and responsibilities of themselves and the other group [26]. In addition, it is now revealed that nurses and physicians have discrepant views on several respects such as the extent to which collaboration and joint decision-making are valued, the way that appropriate interprofessional communication should be defined, the quality of nurse-physician interactions, and the understanding of patient goals [7]. Added to these sources of conflict can be physicians' disruptive behavior, their reluctance to communicate with nurses, and their emotional difficulties [27]. The multiplicity of the factors influencing NPC and their root in complexities concerning human psychology and patient care dynamics renders development of high quality NPC a formidable task [22]. This challenge calls for high commitment of healthcare organization to develop appropriate strategies and procedures to effectively address NPC barriers [3].

Successful physician-nurse communication can be defined as transferring correct information in an open and timely manner [5]. Besides that, however, the

construct can be described in terms of other dimensions such as mutual understanding, mutual respect, mutual satisfaction, and conflict management [5, 6, 28]. This multifaceted nature of the NPC makes it vulnerable to many psychological, environmental, organizational, and demographic factors. Similar to many other constructs, addressing NPC challenges relies on evaluating its constituting dimensions to enable developing and prioritizing intervention strategies.

Despite the fact that NPC has been the focus of much attention for decades [2], research into nurse-physician communication is new in Iran. Recently, Farahani *et al.* (2011) conducted a qualitative study to explore communication barriers from the perspective of multiple players in cardiac care settings including nurses, physicians, patients, and families [29]. They identified lack of nurse-physician collegiality, problematic communication between the healthcare team, patients and their families, and cultural challenges as the major causative themes. Another qualitative study by Vaismoradi *et al.* (2011) indicated lack of independence in decision-making, inadequate acknowledgment of nurses, and unequal support by the healthcare system as the significant experiences of Iranian nurses regarding NPC [30]. While these studies provided valuable information about the main challenges facing development of high quality NPC in Iran, they were not designed to quantify the status of the phenomenon in comparison with the other countries. In addition, both studies were conducted in Tehran, the metropolitan capital of Iran, hence they do not necessarily reflect the opinions of health care professionals across the country. To contribute to providing provincial data on the status of NPC in Iran, we surveyed nurses' perceptions of their communication with physicians in hospitals affiliated with Hormozgan University of Medical Sciences, using a quantitative approach. Hormozgan is a southern Iranian province situated at the shores of the Persian Gulf. The comparative analysis of the results and their policy implications is reported in this paper. We believe that conducting such studies and their accumulation will contribute to developing a nationwide perspective of the nurse-physician relationship, which in turn would aid policymakers in planning insightful interventional strategies.

Methods

Study Design and Settings

A descriptive-analytical study of cross-sectional design was conducted between April and June 2012 in three teaching hospitals affiliated with Hormozgan University of Medical Sciences.

Population and Sampling

All nurses at the hospitals with a work experience of at least one year were targeted as the study population. Firstly, in order to select the participants, a comprehensive list of all eligible nurses in each hospital was provided. The respondents were selected from the list by simple random sampling, resulting in a sample of 155 subjects. Data was collected using a self-administered questionnaire. Twenty-five of the participants were then excluded since they either did not return the questionnaires or filled them out incompletely. Therefore, finally, a total of 130 remaining questionnaires were analyzed (response rate = 83.8%).

Measuring Instrument

The questionnaire developed by Schmidt and Svarstad [31] was used to assess the quality of communication between nurses and physicians. The scale was used by these authors to measure the quality of NPC in Swedish nursing homes. This questionnaire comprises 18 items related to four dimensions of NPC, including Openness (four items), Relevance and Satisfaction (eight items), Mutual Understanding (two items), and Frustration with Interaction (four items). The items were measured on a five-point Likert scale ranging from 1 = 'none'/'not at all'/'very difficult' to 5 = 'a lot'/'extremely'/'very easy'. To avoid halo effect, some questions were negatively worded.

The questionnaire was translated into Persian using a backward-forward translation technique [32]. A panel of experts was asked to translate the items from English into Persian and vice versa. Minor translation adjustments were carried out by contribution of the authors, and the two versions were finally found to be equal.

Data Analysis

Data was summarized using descriptive statistics. The scores of the negatively worded items were reversed so that a higher score always corresponds to a more positive perception of nurses towards NPC. The Likert type scale was converted to a 100-point scale (1 = '100', 2 = '75', 3 = '50', 4 = '25', 5 = '0') to facilitate comparison of the results with previous studies. Scores above 75 were taken to represent 'good' or 'satisfactory' levels of perception towards NPC, within 50-75 were considered as 'moderate', and below 50 were considered as 'inadequate' or 'unsatisfactory'. The internal consistency reliability for the scale was measured by Cronbach's alpha. The reliability of the original scale has been reported 0.92 [31]. In this study, an internal consistency reliability of 0.76 was obtained for the 18-item questionnaire. In addition, Cronbach's alpha for each dimension of NPC was calculated to be: 0.72 for Relevance

Table 1 Demographic and professional characteristics of the participants

Variables	Number	%
Gender (<i>n</i> = 130)		
Male	35	26.9
Female	95	73.1
Age (<i>n</i> = 110)		
20-30	59	53.6
30-40	42	38.2
> 40	9	8.2
Work experience (<i>n</i> = 114)		
1-10 years	94	82.5
11-20 years	15	13.2
>= 21 years	5	4.4
Education (<i>n</i> = 130)		
High School	35	26.9
College	15	11.5
University	80	61.5

and satisfaction, 0.83 for Openness, 0.77 for Mutual Understanding, and 0.89 for Frustration with Interaction. The fact that all alpha coefficients were above the 0.7 criterion ensures sufficient reliability of the scale and its subscales.

T test and ANOVA were used to compare mean nurses' perception of NPC between demographic groups. Data were analyzed using SPSS Version 13 Software and $P < 0.05$ was considered as statistically significant.

Ethics

Before administering the questionnaires, nurses were informed regarding the purpose of the study and written consent was obtained for their participation. To ensure confidentiality, the respondents were asked to complete the questionnaire anonymously.

Results

Participant Demographics

Table 1 summarizes the professional and demographic information of the participants. Among total subjects, 73.1% were female, 82.5% had hospital work experience of 1-10 years, and 61.5% had a university degree. The respondents' ages varied between 20 and 48 averaging ~ 30 years.

Table 2 Score Mean and Standard Deviation of Nurse-physician Communication Subscales

Nurse-physician Communication Subscales	Mean	SD
Mutual Understanding		
Physicians' difficulties in understanding what nurses means (MU1)	3.59	0.76
Nurses' difficulties in understanding what physicians mean (MU2)	3.31	0.80
Openness		
Talking openly with physicians (O1)	3.10	0.90
Physicians listening to nurses (O2)	3.13	1.01
Receiving correct information or advice from physicians (O3)	3.09	0.90
Communication openness between nurses and physicians (O4)	2.61	0.67
Frustration with Interaction		
Feeling angry after interaction with physicians (FI1)	3.99	0.74
Feeling frustrated after interaction with physicians (FI2)	4.25	0.85
Feeling misunderstood after interaction with physicians (FI3)	3.88	0.67
Feeling dissatisfied after interaction with physicians (FI4)	3.84	0.88
Relevance and Satisfaction		
Feeling respected after interaction with physicians (R1)	2.43	0.77
Feeling pleased after interaction with physicians (R2)	3.38	0.78
Feeling satisfied after interaction with physicians (R3)	2.45	0.68
Level of understanding between nurses and physicians (R4)	2.58	0.75
The value of contact with physicians (R5)	2.84	0.84
Asking physicians for advice (R6)	3.16	0.92
Joyfulness of talking to physicians (R7)	2.93	0.82
Relevance of information provided by physicians (R8)	3.23	0.80

Survey Findings

The score means of the total scale and its four subscales are displayed in Table 2. The overall measure of NPC averaged 53.8% ranging from 32.2% to 84.7%.

Among NPC dimensions, the highest score mean was obtained by Frustration with Interaction (77.5%), where 'Feeling frustrated after interaction with physicians' was the highest scoring item (81.25%), and 'Feeling dissatisfied after interaction with physician' was the lowest scoring item (71%). The second highest score was given to Mutual Understanding (65%) where 'Physicians' difficulties to understand what nurses mean' was rated the highest (64.7%), and 'Nurses' difficulty in understanding what physicians mean' was rated the lowest (57.7%). The dimension Openness achieved the third rank (47.5%) with the highest score (53.2%) received by 'Physicians listening to nurse', and the lowest score (40.2%) received by 'Communication openness between nurses and

physicians'. Finally, the dimension Relevance and Satisfaction was rated at the lowest level (42.5%) with 'Feeling pleased after interaction with physician' scoring the highest (57%), and 'Feeling respected after interaction with physician' scoring the lowest (35.7%).

Comparison between Demographic Groups

Table 3 compares perceived NPC quality between male and female nurses. The two genders showed strong significant differences in their perception of Mutual Understanding and Frustration with Interaction ($P < 0.01$). In addition, female nurses assessed total quality of NPC significantly higher as compared with their male counterparts ($P < 0.05$).

In addition, ANOVA indicated that nurses with work experience > 20 years had significantly better perception of NPC quality compared with other groups ($F = 5.22$, $P = 0.007$). No significant difference in perception of NPC was identified between education and age groups.

Table 3 Comparison of mean nurses' perceptions of NPC subscales between males and females

Subscale	Total		Male		Female		Test of difference		
	Mean	SD	Mean	SD	Mean	SD	t	df	Sig
Mutual Understanding	3.6	0.61	3.2	0.58	3.7	0.60	-3.79	128	0.000
Openness	2.9	0.62	2.8	0.66	2.9	0.61	1.73	128	0.086
Frustration with Interaction	4.1	0.59	3.7	0.59	4.2	0.56	-2.94	127	0.004
Relevance and Satisfaction	2.7	0.58	2.6	0.64	2.7	0.57	-0.316	128	0.753
Total	3.15	0.37	3.09	0.39	3.18	0.36	-1.74	128	0.017

Discussion

The aim of this study was to provide insight into Iranian nurses' perception of nurse-physician communication using a sample from teaching hospitals of Hormozgan University of Medical Sciences. While our participants had a moderate assessment of NPC, their assessment was lower than that reported by Schmidt and Svarstad [31] (53.8% and 74.5%, respectively). In addition, all dimensions of nurse-physician communication were rated lower in our study as compared with the Swedish study [31], with the exception of Frustration with Interaction that scored marginally higher in our survey. Moreover, the order of scores was not similar in the two studies, indicating that the evaluation of the NPC by Iranian nurses does not match the pattern of the corresponding ratings in Sweden.

Frustration with Interaction was found to be the highest rated dimension of NPC in our survey. The need to cope with frustrating communication problems results in undesirable emotional over notes, which in turn may induce or intensify other problems [8]. Although nurses' perception of frustration in interaction with doctors fell within the 'good' range of scoring, the distance from the ideal condition still leaves room for improvements.

The second highest rated factor was Mutual Understanding, which fell within the moderate range of scoring. This factor is rated 14% lower by Iranian nurses than by Swedish nurses [31]. Mutual understanding is presumably the most fundamental factor for a successful communication [5]. Hence, hospital leadership should attempt to facilitate this crucial communicational dimension, even though the related rating is not unsatisfactory.

The dimension Openness fell short of even a moderate assessment with a ~ 24% lower rating as compared with the Scandinavian study [31]. Studies show that communication openness is strongly influenced

by management support, and in turn, strongly influences different dimensions of health care quality [33, 34]. Lack of adequate openness in the studied hospitals, therefore, calls for investigation of causative factors to guide development of interventional programs.

Another dimension evaluated lower than moderate was Relevance and Satisfaction, which also displayed the largest negative deviation from the study of Schmidt and Svarstad (32.5%) [31]. This dimension accounted for the lowest rated measures of NPC, including nurses' perceptions of respect, satisfaction, and openness in interaction with physicians, all being descriptors of an efficient communication and collaborative process [19, 35]. In addition, the importance of these measures to nurses' job satisfaction, and nurses' perception of work-life quality and patient safety is well documented [17]. Moreover, measures of the value of contact with physicians, enjoyment of talking with physicians, and feeling pleased after interacting with physicians, all scored below the 50% level. Physicians' sense of humor, which can potentially enhance nurses' enjoyment of interaction with them, has been shown to be a predictor of nurses' job satisfaction [36]. In addition, a positive correlation between nurses' perceptions of physicians' use of nurse-centered communication practices and patient-centered communication practices is demonstrated [36]. Given these facts, the poor rating of 'Relevance and satisfaction', highlights the need for investigation into causative factors.

Our study identified a significantly higher perceived NPC by female nurses than by male nurses. The difference arose from more positive perception of female nurses towards 'Frustration with Interaction and Mutual Understanding relative to their male colleagues. This result, besides the fact that a reverse evaluation pattern was not observed in any dimensions, introduces male nurses as the prime focus group for NPC improvement plans. Nonethe-

less, difference in evaluation of NPC quality by the two genders did not extend to the rating pattern of the construct's dimensions; the order of dimension scores remained identical between the genders. This indicates that there is no fundamental cross-gender difference in nurses' perception of their communication with physicians. Therefore, similar intervention strategies are likely to work for both populations, but a higher focus on male nurses would yield more effective results.

Our study also identified a significant difference in nurses' perception of NPC based on their length of experience. Nurses with over 20 years of experience had a more positive perception of NPC. This observation contrasts with precedent studies in which years of experience and satisfaction with communication were found inversely related [37, 38]. In addition, lack of significant difference in NPC perception between education groups was found inconsistent with previous findings [16].

Identifying the reasons for unsatisfactory nurse perception of some NPC factors – Relevance and Satisfaction and Openness – was beyond the scope of this study. Previous studies, however, identified factors such as poor communication skills, misunderstanding of roles, perceived differences in position of nurses and physicians, differences in educational level, role expectations, and gender issues as potential barriers to effective nurse-physician communication [16]. While the same factors may underlie nurses' inadequate perception of NPC in our study, more specific data is required to attribute them to the Iranian nurse community.

Through their literature review and interview with 141 American physicians, managers and nurses, Schmalenberg *et al.* concluded that joint nurse/physician practice committees, integrated patient records, joint practice record reviews, and the use of protocols or critical pathways in caring specific patient groups, assist communication between nurses and physicians [39]. The authors also identified trust, respect, shared leadership, and recognition of unique contribution, collegiality, and open communication, as enablers of improved communication [39]. Excellent listening skills, superb administrative support, and collective commitment to overcome traditional hierarchy and professional stereotyping, has been identified as requirements for development of successful communications [1]. Our results reflect the usefulness of promoting similar factors to enhance NPC in the studied hospitals.

Conclusions

Marginally higher than mid-way, the nurses' perception of nurse-physician communication fell within the 'moderate' range of scoring. The score mean of the NPC also fell considerably short of the corresponding rating in Sweden. Considering the well-established impact of NPC quality on patient outcomes, our findings highlight the need for developing and implementing NPC improvement strategies to enhance quality of health care in the studied hospital. Frustration with Interaction was the only satisfactory dimension of NPC, with 'Mutual understanding' being assessed at the moderate level, and 'Openness' and 'Relevance and satisfaction' scoring below mid-level. Hence, the two latter factors represent the prioritized point of focus for NPC interventional programs. The study also found a significantly higher perception of NPC by female nurses than by their male counterparts. However, the order of ratings remained identical across genders. In addition, a significantly higher perception of NPC was identified for the nurses of over 20 years of experience compared with other work experience groups. While this study provides an initial quantitative evaluation of perceived Iranian nurses' communication with physicians, the study limitations, including limited sample size, having enrolled only teaching hospitals' nurses, and limited geographic diversity of the involved hospitals advise caution in the generalization of the results to an overall Iranian context. The study findings, however, have adequate resolution to indicate the need for in-depth and nationwide inquiry into NPC.

Abbreviations

(NPC): nurse-physician communication

Competing Interests

The authors declare no competing interests.

Authors' Contributions

TA designed the study and contributed to data analysis, interpretation of the results and manuscript preparation. SST was involved in data analysis, interpretation of the results and revision of the manuscript. LA collected the data. BM contributed to manuscript preparation. All authors read and approved the final manuscript.

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