

Does student orientation improve nursing image and positively influence the enrolment of nursing students in the University? An observational study

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Abstract. *Background and aim of the study:* Nursing has not yet received full social recognition and in general the public opinion does not have a completely positive perception of it, which regards it as an auxiliary profession to the medical profession. This study aims to investigate the image of the nurse among year 4 and 5 high school students. *Methods:* Two groups of students were interviewed, one at their institution without any previous orientation (n = 102) and one at the University of Bologna during orientation day (n = 388). A validated questionnaire (Nursing Attitude Questionnaire) of 30 items was delivered. Two additional questions were added to explore the possibility of advising relatives and acquaintances to become a nurse and therefore to choose the nursing degree course. *Results:* All areas of the NAQ scored significantly higher in the group where students attended the orientation day, especially the ones related to the professional role, stereotypes and professional value items. Female students ≥ 21 had a more positive image of the nurse. Both groups recognized that nurses are important figures for patients and that they are intelligent people, who must have a degree in order to carry out their work duties. Differences between the groups were recorded. Students in group 1 did not accept nursing autonomy while students in group 2 understood differences between nursing and medical careers, attributing to them the same value. A positive correlation between the positive image of the nursing profession and the interest in becoming nurses or advising others to undertake the nursing course was found. In conclusion, orientation is effective in helping high school students in the choice of their university courses. Regarding nursing, strategies to improve the image of the nurse and enrollment should be combined during orientation day with current up to date communication and learning tools, such as social media and simulation laboratories. Furthermore, it appears increasingly important to extend orientation and tutoring activities to junior high school students, families and teachers. (www.actabiomedica.it)

Key words: nursing profession perception, high school students, orientation, Nursing Attitude Questionnaire

Introduction

The perception of the nurse has changed over time (1), provoking international debate (2). In par-

ticular, the public opinion does not have a fully positive perception of the nursing profession, considering it an auxiliary profession to the medical one (3, 4). On the contrary, other studies reported a positive image (5)

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focusing on the relationship between the nurse and the patient and his family, highlighting the importance of nurse educational, preventive and care role (6).

There are several reasons for the lack of full social recognition. Public opinion does not adequately know the evolution of the nursing profession (1), nor does it know that modern nursing is built on solid theoretical foundations (7). Most people do not adequately understand the nurse academic training, nor the specific skills needed for professional practice (4). Furthermore, the perceived value of the profession is strongly influenced by the mass media and more recently by social media (8, 9). For this reason, in the United States there are groups in charge of monitoring the type of image of the nursing profession conveyed by the media (8).

A distorted image of nursing care impacts on the quality and quantity of people who choose nursing as a profession (10). This is particularly relevant, in fact, for the low recruitment of males, since the media stereotype consider nursing a female profession and male nurses are associated with a negative image (11). Three specific reasons that make the nursing profession unattractive to young people, are: low wages, high workloads and poor career opportunities (4, 12) and in addition the lack of adequate social recognition (13). Young people believe that nurses perform difficult and even unpleasant tasks without receiving adequate rewards for their workload (14). However, some people have an awareness of the sacrifices and difficulties that nursing requires and this generates a sort of admiration and credit within society (15), which does not correspond to the real nurse role within the healthcare context (9, 10).

These contrasting visions, together with the profound change brought to the nursing profession by the Bologna Process (1999), underline the need for a deeper knowledge of the perception of nursing in Italy (16). In fact, several studies stress that the image of the nursing profession greatly influences the recruitment in the nursing profession itself (17, 18, 13) as well as the political, legislative decisions that have direct repercussions on the financing of nursing training and the recruitment in health services (11).

Among the factors leading young people to choose the nursing profession, there is a desire to help

others (12) and to undertake a stable and economically secure profession (1, 19-24). Moreover, personal experience, such as having come into contact with nurses, or having family members in need of nursing care, are reasons that lead young people to choose the nursing profession (13). Personal contact with nurses or observing the nursing care of hospitalized family members was also cited as a reason for choosing the nursing profession (13, 20). Orientation given by the family and especially by the mother, appears to be another important element of choice (10). It has been also shown that the support of family members and friends is directly proportional to the capacity of the nursing profession to promote its public image (25).

University education has made access to the nursing profession more exclusive and it has created the conditions to make this profession more attractive to young people. Universities have developed specific trainings and career paths, in line with other non-medical health professions (26). The orientation organized by the universities is a very important event to promote a positive image of nursing as it is shown that a stereotyped image attracts students with a medium to low high school performance (27). Therefore, "The Millennials", who are ambitious (28), want recognition (29) and require flexibility in their work, are hardly attracted by this career choice (30). In order to improve the perception of the image of nurses, academic nurses must participate in public discussions, providing information about the theoretical and practical nursing training, degree of professional autonomy, the variety of activities, academic career paths and job opportunities, areas of personal satisfaction and contractual opportunities (10, 26, 31, 32).

Law and Arthur draw an identikit of the students who are most inclined to choose nursing and these are female students, who study biology and who have a positive perception of nursing (31). In fact, most aspiring nurses express a clear preference for the intrinsic rewards of the profession over extrinsic ones, such as low priority to financial and career rewards, more priority to the family and a high priority to work with people. This emphasis on the "ethics of caring" and on the social rewards of the nursing profession is most noticeable among women and to a lesser degree among men (33). Recruitment strategies must also be aimed

at attracting more male students. For this reason, Law and Arthur suggest involving successful male figures in guidance activities (31).

The perception of the nursing profession is linked to the recruitment and retention of nurses. For this reason, academic tutors and career days play a key role (32, 34, 35), especially with junior high school students (36), with families, with high school teachers (12, 34) and high school students who tend to identify themselves with successful TV show public figures (9, 37). Active use of social media, such as Twitter, Facebook and Instagram should be considered to increase the visibility of the nursing profession and share information (12).

Objective

The study aims to investigate the perception and opinion on the image of the nurse by students of year 4 and 5 in Italian secondary schools who attended a university orientation workshop for the University Degree Course in Nursing, taught by an academic nurse educator.

Methods

Design

A cross-sectional study was conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for observational studies (38).

Sample

A convenience sample consisting of 490 adult students attending year 4 and 5 of a technical and vocational college and secondary high schools. Students were divided into two groups: 1) students who were interviewed at their institutions without any previous orientation (9) and 2) students who participated in an orientation day about the nursing degree course. Group 2 was recruited at a meeting organized by the University of Bologna. On this occasion, an academic tutor illustrated the professional nursing profile, its

duties, related job opportunities and the study plan of the course.

After being informed about the objectives and the design of the study, the participants voluntarily agreed to be interviewed by signing an informed consent. Consequently, the authorization to the bioethical committee was requested.

Instruments

The Nursing Attitude Questionnaire (NAQ) was used to assess the perceived image of the nurse. It was designed by Hoskins (39) and first adopted by Toth (40) to evaluate the image of the nurse perceived by certain groups of people, such as common citizens, nursing students and high school students (39, 40). The questionnaire consists of 30 items with a Likert scale ranging from 1 (strongly disagree), 2 (moderately disagree), 3 (neutral), 4 (moderately agreed) to 5 (strongly agreed). The questionnaire takes 10 minutes to complete and it explored the following five areas: professional role (10 items), professional values (7 items), stereotypes (6 items), professional activities (4 items), and nursing professional features and responsibilities (3 items).

Two summary questions have been added to the tool: 1) I would advise a relative / acquaintance to be a nurse; 2) I have an interest in choosing the nursing degree course. Participants expressed their level of agreement with these additional items on a Likert scale (range 1 to 5).

Total scores on the NAQ range from 30 to 150 points, with a high scores representing a more positive attitude toward nursing and low scores representing a less positive attitude toward nursing. Seven items were recoded before statistical analysis (40).

Data collection

Data were collected between July 2016 and January 2017.

Data analysis

The analysis was conducted with SPSS Version 24. The sample characteristics and the NAQ scores were analyzed through frequencies, percentages, in-

dices of central tendency (average, median) and dispersion measures (SD, range). The significance was calculated through the ANOVA and the t-test for the cardinal variables. The Spearman coefficient was used for correlations between ordinal variables. A $p < 0.05$ was considered as statistically significant. The measure of the reliability of each test was determined by Cronbach's alpha.

Results

Table 1 summarizes the overall characteristics of the sample consisting of 490 subjects divided into two groups. Group 1 was made up of students who did not

attend the orientation day (20.8%); 45.1% of these students was attending a technical college or a high school and 54.9% a vocational school. Group 2 was made up of the students who participated in the orientation day (79.1%) and 19.1% was attending a technical high school and 80.9% vocational school.

This population was made up of 66.3% female students, 79.7% were 18 years old and 58,9% were attending year 5.

Overall, 52.2% of the sample was hospitalized at least once, and 85% reported they had come in contact with a nurse at least once during their lifetime.

NAQ showed good reliability (Cronbach's $\alpha = 0.759$), with values that differ from a $\alpha = .666$ in group 1 and a $\alpha = .772$ in group 2.

Table 1. Sample characteristics

	1 Group n = 102		2 Group n = 388		Total N = 490 N (%)	X ²	P
	n	%	n	%			
School attended						29,584	,000**
Technical / high school	46	45,1	74	19,1	120 (24,5)		
Vocational school	56	54,9	314	80,9	370 (75,5)		
Gender						62,782	,000**
Male	68	66,7	97	25,0	165 (33,7)		
Female	34	33,3	291	75,0	325 (66,3)		
Age						56,807	,000**
18 yrs	53	54,1	328	86,3	381 (79,7)		
19 yrs	22	22,4	36	9,5	58 (12,1)		
20 yrs	17	17,3	13	3,4	30 (6,3)		
≥ 21 yrs	6	6,1	3	0,8	9 (1,9)		
Year attended						6,33	,012*
Year 4	53	52,0	145	38,2	198 (41,1)		
Year 5	49	48,0	235	61,8	284 (58,9)		
Do you have any family members or acquaintances who are nurses?						9,552	,002**
Yes	44	43,1	230	60,2	274 (56,6)		
No	58	56,9	152	39,8	210 (43,4)		
Have you ever been to the hospital?						1,963	,161
Yes	55	53,9	179	46,1	234 (47,8)		
No	47	46,1	209	53,9	256 (52,2)		
Years since the last hospitalization						1,011	,603
< 1 yr	13	25,5	35	22,2	48 (23,0)		
1 a 3 yrs	15	29,4	39	24,7	54 (25,8)		
> 3 yrs	23	45,1	84	53,2	107 (51,2)		
Did you come in contact with a nurse?						3,174	,075
Yes	81	79,4	333	86,5	414 (85,0)		
No	21	20,6	52	13,5	73 (15,0)		

* $p < 0,05$; ** $p < 0,01$

Data analysis showed a statistically significant difference ($p < 0.05$) between the NAQ scores detected in the two groups, with higher values (110.3) found in the second group in students aged ≥ 21 years and lower values (98.2) in the students of the group 1 attending vocational schools. Overall, women reported a higher NAQ mean score than males (109.2 [DS 8.4] and 101.9 [SD 10.2], respectively (Table 2).

In all areas of NAQ there were differences in the two groups ($p < 0.0001$). Group 2 obtained a significantly higher score overall (108.4 [SD 9.2] vs 100.3 [SD 8.7]) with a range of difference of average values within the single areas ranging from 0,82 in the *Item*

Characteristic of nurses / nursing at 2.89 in the *Professional Role* item. The statistical significance was also recorded in the two summary items. In the question *I am interested in choosing the degree course in nursing* the score of 2.00 (SD 1.158) recorded in the first group grew to 3.14 (SD 1.188) by registering an average increase of +1.14 (table 3).

Other elements have influenced the perception that students had of the figure of the nurse. In fact, among students who had a nurse in the family member or knew a nurse the score was significantly higher (108.1 [SD 8.8] vs 105 [SD 10.5] ($p < 0.001$). This was also evident among the students who were hospital-

Table 2. Groups comparison analysis of NAQ scores

	Group 1 n = 102		Group 2 n = 388		Total N = 490	
	M±SD	P	M±SD	P	M±SD	P
Age		,560		,336		,003**
18 yrs	101,15±9,01		108,65±9,17		107,61±9,50	
19 yrs	98,45±8,53		109,19±6,53		105,12±8,98	
20 yrs	99,65±5,55		104,15±12,36		101,60±9,24	
≥ 21 yrs	102,83±13,68		110,33±3,06		105,33±11,55	
Gender			,008**		,000**	,000**
Male	98,85±8,51		104,07±10,77		101,92±10,20	
Female	103,87±8,23		109,84±8,30		109,28±8,46	
School		,010*		,323		,000**
Technical/High	102,76±8,43		108,65±9,18		107,90±9,29	
Vocational	98,29±8,47		107,46±9,81		103,67±10,30	
Year attended		,203		,069		,086
Year 4	101,51±7,32		107,35±10,39		105,88±10,02	
Year 5	99,27±9,83		109,12±8,38		107,42±9,40	

* $p < 0,05$; ** $p < 0,01$

Table 3. Comparison analysis NAQ area

	R	Group 1	Group 2	Difference	t	P
		M±SD	M±SD			
Professional role	10-50	33,79±3,983	36,68±3,748	2,89	-6,761	,000**
Professional values	7-35	20,98±2,854	22,44±2,935	1,46	-4,422	,000**
Stereotypes	6-30	19,78±2,456	21,61±2,556	1,83	-6,395	,000**
Professionalism	4-20	15,32±2,152	16,32±2,179	1	-4,100	,000**
Characteristic of nurses/nursing	3-15	10,53±1,840	11,35±1,817	0,82	-3,974	,000**
Total NAQ	30-150	100,39±8,700	108,40±9,260	8,01	-7,752	,000**
I would advise a relative / acquaintance to be a nurse	1 - 5	3,26±1,096	3,63±,934	0,37	-3,452	,001**
I am interested in choosing a nursing degree course	1 - 5	2,00±1,158	3,14±1,182	1,14	-8,598	,000**

** $p < 0,01$

ized at least once (107.6 [SD 9.2 vs 105.9 [SD 10.1]) ($p < 0.05$) and the students who came in contact with nurses (107.2 [SD 9.2] vs 104.6 [SD 11.7]) ($p < 0.05$) (Table 4).

The items whose mean values were higher than the 90th percentile corresponded to the following statements:

1. Nurses represent a personal resource for people with health problems (Group 1);
2. The most important goal of nursing research is to improve patient care (Group 2);
3. Being a nurse requires intelligence (Group 1 & 2);
4. Nurses should have a degree in order to do their job (Group 1 & 2).

In contrast, the items whose mean values were lower than the 10th percentile corresponded to the following statements:

5. Nurses are politically active (Group 1);
6. Nurses are able to operate independently (Group 1);
7. If nurses spent more time caring for patients and less at school, everyone would benefit (Group 2);
8. Many nurses who seek advancement in their professional career would rather be doctors instead (Group 2);
9. One of the advantages of being a nurse is to marry a doctor (Group 1 and 2).

Table 4. Analysis of additional items

	1 Group n = 102		2 Group n = 388		Total N = 490	
	M±SD	P	M±SD	P	M±SD	P
Do you have any family members or acquaintances who are nurses?		,045*		,055		,001**
Yes	101,37±8,48		109,22±8,52		108,14±8,86	
No	98,84±8,63		107,36±10,33		105,09±10,58	
Have you ever been to the hospital?		,013*		,616		,045*
Yes	98,47±7,97		108,19±9,62		105,91±10,12	
No	102,84±9,06		108,67±9,01		107,67±9,27	
Did you come in contact with a nurse?		,031*		,516		,037*
Si	101,35±8,03		108,61±9,03		107,23±9,29	
No	96,65±10,33		107,71±10,84		104,64±11,74	

* $p < 0,05$; ** $p < 0,01$

Table 5. Items with the highest disagreement among the categories (over the 90th percentile)

Item	Group 1	Group 2
10% higher	M±SD	
Nurses should have a degree in order to their job	4,08±1,123	
Nurses are a personal resource for people with health problems	4,07±,791	
The most important goal of nursing research is to improve patient care		4,29±,682
Nurses should have a degree in order to do their job		4,20±,879
Being a nurse requires intelligence	4,15±,813	4,19±,840
Less than 10%		
Nurses are able to operate independently	2,72±,989	
Nurses are politically active	2,92±,864	
If nurses spent more time caring for patients and less at school, everyone would benefit		2,60±1,026
Many nurses looking for progress in their professional career would rather be doctors instead		2,62±,993
One of the advantages of being a nurse is to marry a doctor	1,93±1,188	1,68±1,065

Tabella 6. Partial correlation between NAQ scores and item A & B

		A	B
NAQ Scores	A I would advise a relative/acquaintance to be a nurse	1	0,458**
	B I have an interest in choosing the nursing degree course	0,458**	1

** p < 0,01

The correlation between the perception of the image of the nurse and the question that explores student interest in undertaking a nursing course has shown opposite results. While in group 1 the two variables correlate poorly (Spearman Rho = 0.183; $p > 0.05$) (9), in group 2 the results obtained on the image of professionals correlate well with the choice to undertake the nursing course (Spearman Rho = 0.332; $p < 0.01$). The positive effects of the orientation in the choice of the course of study is also confirmed in the calculation of the partial correlation, which highlights a direct relationship between the image of the nursing profession and the interest in becoming nurses or suggesting others to undertake the course of studies in nursing (Table 6).

Discussion

The results of the study show that the orientation significantly influenced the perception of the image of the nurse in the population of this study. In particular, students who were ≥ 21 years old and female, expressed a more positive opinion. This could depend on the fact that women are generally more empathic than males, a personality trait playing a key role in nursing care (9). The literature has shown that females are more inclined than males to choose nursing as a future profession (27, 32, 41).

All areas of the NAQ were significantly improved in the group 2, especially professional role, stereotypes and professional value items. The results could be related to the type of information the students received. In fact, at the orientation day, the academic nurse educator, before explaining the nursing degree course, focused participants' attention on the nurse profile, on professional autonomy, describing the activities that the nurse carries out daily in the various clinical, or-

ganizational and training contexts. Each of the activities described was accompanied by an example taken from real life. This communicative model aims at fostering prospective students' motivations and at the same time at avoiding misperceptions about the work of the nurse (3, 10). Additional elements that were discussed during the presentation were the various career developments in the university, clinical, and organizational areas; upgrading of nursing competences; modes of integration with other health professions; personal satisfaction; job opportunities in public and private health workplaces or in cooperative or freelance work. (1, 7, 10, 12, 31). Furthermore, during the orientation, information was provided regarding the nursing degree course, the teaching methods, organization of laboratories and types of internships (42).

In addition, in the items investigating whether the student would recommend the nursing degree course and if he/she intended to choose the course there was a significant improvement compared to group 1. In particular, a correlation between the positive image of the nursing profession and the interest in becoming nurses or suggesting others to undertake the nursing course was found.

However, the neutral result [3,14 (SD 1,182)] on the intention to enroll in the nursing degree course compared to the open opposition to enroll in such a course expressed in group 1 could depend on the attempt to question in a short time stereotypes which have been part of the nurse public image for a long time. This result is in agreement with the study by Matutina et al. (36), in which the authors suggest targeting also on junior high school students during orientation, including their teachers and family members. In fact, at this age, students begin to explore potential career options and to discuss their future with teachers, trying to form an idea of what they can do "when they grow up" (32).

Porter et al. (43) and Neilson & McNally (44) have demonstrated through a school-work project that pairing up a student with a nurse improves the image of the nurse and motivates the student to undertake the nursing degree course. Another strategy to motivate students to choose the nursing course could be to promote greater coordination with educational institutions allowing students to attend simulation activities carried out in nursing laboratories at universities (44). The laboratories, in fact, allow the prospective nurse to use their theoretical knowledge in a safe environment that simulates clinical training and with good student satisfaction (45, 46, 47). This teaching method could promote and deepen the insight high school students might have into the work of a nurse.

Furthermore, the use by the university and nursing organizations of social media could give added value to improve the image of the nurse and encourage young people to choose this profession (12). Advertising campaigns also proved to be very successful in the recruitment of young students with excellent grades (35). This is confirmed by the world of entertainment, in which VIPs would be inclined to play the role of nurse if nurses were able to promote their image and if the media spread a good opinion of the nursing profession (9). This also would positively affect the public image of the nurse among young people who are sensitive to the mass media models (48).

Students who have been hospitalized or those who know a nurse have a good image of the nursing profession, which was shown by significantly higher scores in both groups. These results are confirmed by previous studies in which students who have a nurse in the family have a good perception of the nursing profession (31). Both groups valued the primary characteristics of nurses, which were defined as important figures for patients and intelligent people, who must have a degree in order to do their job. Since students recognized nursing as a science, group 2 emphasized the importance of nursing research in improving patient care. In contrast, questions with an average value below the 10th percentile show better the differences between the two groups after orientation. In fact, students in group 1 did not recognize nursing autonomy and the possibility that nurses might be politically active. Students in group 2, instead, showed disagree-

ment with some stereotypes related to the nursing profession. These students recognized the role of basic and post-basic education and the differences existing between nursing and medical careers, attributing to them the same value, in contrast to what was reported in the literature (27, 34, 41, 44). Both groups strongly disagreed with the statement that one of the advantages of being a nurse is to marry a doctor.

Conclusions

According to the results of this study, the image of nurses is overall positive. Both groups of participants are aware of the fact that nurses must hold a degree in order to work and that they are educated healthcare professionals. High school students consider the nursing profession as a valuable resource for the national healthcare system. The participants in this study, after taking part in the orientation day, acknowledge the importance of research in the nursing field. However, the idea that nurses only operate as auxiliaries to doctors is still partially rooted in the popular culture. Furthermore, it is worth noticing that participants in both groups do not consider marrying a doctor as one of the possible advantages of being a nurse. This openly contradicts what has been portrayed in last century movies (48).

The results of this research show that orientation is essential and effective for high school students in guiding their choice of a university degree. This is especially true for the nursing degree course, considering how debated the image of the nurse is in society. Therefore, a greater coordination among universities, educational institutions and nursing colleges is advocated in order to promote the nursing profession by using a more modern and effective communication approach that will include mass media and social networks. An improved image of the nurse could also be achieved by involving junior high school students and teachers in simulation activities performed in university laboratories and in educational projects carried out by community nurses, in which students' families can also be involved. These activities are a good compromise between a more formal orientation day and the school-to-work project experiences (43, 44).

Limitations of the study

A limitation of this study is the type of sampling, which is not of a probabilistic but a convenience sample, therefore the results cannot be generalized. Another limitation could be in the answers given by students during orientation, which might have been misleading due to their lack of interest in participating in this research and due to the fact they might have been in a hurry in order to take part in other presentations organized by other health care professions presenting during the same event.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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