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Professional identity, wellness, and future hope among nurse interns in Egypt

Original article

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Abstract: **Objective:** Since nursing is a performance-based profession, clinical learning environments play an important role in the acquisition of professional abilities and train nursing students to enter the nursing profession and become a registered nurse. The study aimed to investigate the relations among professional identity, wellness, and future hope in nurse interns.

Methods: A cross-sectional, analytic, descriptive, correlational study design was used to test these relations in the study where 210 nurse interns' students were selected using a convenience sampling from Zagazig University hospitals and Suez Canal University hospitals in Egypt. The questionnaires consisted of 4 parts, namely demographic characteristics, Professional Identity Scale for Nursing Students (PISNS), Holistic Health and Wellness Survey, and Hope scale.

Results: Less than half of the study sample had chosen nursing specialty by own will (43.8%), while slightly more than half of them had a "very good" graduation level, and had no nursing role model. The lowest mean professional identity score was for independence in career choice while the highest was for social modeling. The reported physical wellness mean-score was the least, while social wellness was the highest. Professional identity, wellness, and future hope scores differed significantly based on nurse interns' personal characteristics. There were statistically significant, positive, weak-to-moderate correlations among the scores of professional identity, wellness, and future hope; however, the "choice of nursing study by own will" was a statistically significant independent positive predictor of the scores of professional identity, wellness, and future hope.

Conclusions: Nurse interns' professional identity, wellness, and future hope were positively inter-correlated. However, nurse interns' wellness was the lowest, and it should be fostered as it was the main predictor for future hope. The internship programs should be modulated to improve nurse interns' professional identity, particularly regarding independence, and should foster their well-being in the clinical environment.

Keywords: *hope • identity • independence • internship • nurse interns • professional • wellness*

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1. Introduction

The nursing internship program is an important period in the preparation of future nurses to actual practice. It helps nursing students to mature their clinical skills through amalgamating theory with practice. Moreover, a good internship program enhances clinical competences, fosters safe patient care, and boosts continuing professional development to meet the needs of health care.[1,2] As nursing is a performance-based profession,

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the clinical learning environment plays an essential role in training nursing students to start their actual practice in the nursing profession and become registered nurses. Hence, nursing students expect an encouraging clinical environment where they can learn and as well feel having a role as a member of the healthcare team through proper clinical assignments.[3] This would have positive impacts on their job satisfaction,[4] as well as their future outlook on the profession,[5] in addition to decreasing their emotional exhaustion.[6]

Nursing Internship is described as a form of empirical education that integrates gained knowledge and theory learned in university education with clinical practice and competencies development in a professional setting. Internship training grants college students the occasion to expand important clinical experience and to build relations in professional fields. It gives guidance for clinical paths, and provides employers the chance to observe and evaluate nurse interns' attitude.[7]

Nursing interns are bachelor nursing college students who have started the role transition from student's role to practitioner nurse via involvement in the internship training program. One of the mechanisms utilized and applied to assist new graduate nurses in the clinical setting is the internship program, which is available by most hospitals in different formats. The transition process from student to expert nurse is a worrying journey due to the recent proliferation in the newly graduated nurse's duties, responsibilities, and legal accountability. Transition is a duration of learning, adjustment, and socialization, when the nurses implement, consolidate, and expand their current knowledge, and gain competence (knowledge, skills, and attitude) that is relevant to their nursing practice and care delivery at clinical settings.[8]

The internship is considered a trial, which is carried out in order to gain work experience. Additionally, it could be training within a specified trial period, which is required in order to discover whether or not a nurse specialist fulfills particular requirements for a specific job.[9] Further, the internship of 12 months helps the graduate nurses to enhance their abilities in different care specialties.[10] The areas and periods of the internship training are usually specified depending on the objectives and business needs. Nowadays, it's additionally possible to carry out such clinical training overseas.

Apart from the above, during the internship program, nursing students continue to build-up their professional identity, which is a form of social identity related to workgroup interactions and how its members distinguish themselves from other professional workgroups.[11] According to Stricker, Westhauser,[12] the professional identity is what an individual – as a professional functioning in a certain field of expertise through the use of related acquired knowledge and skills – views him/herself as. It involves a gamut of values, beliefs, attitudes, drives, and experience used in competent practices based on both cognitive and moral reasoning. Professional identity also relates to the roles an individual can have in the designated profession. It involves both a person's feeling of oneself (self-concept), as well as and of others' image of this person (social image).[11]

The build-up of professional identity may have an important impact on nursing students' decision to proceed with nursing as a profession or to change their track.[13] It might affect their look at the future hope in their career as well as their well-being. Hope is a positive mental state based on a mutual feeling of own aptitude to attain goals (agency) and having the resources that can make this happen (pathways). It is actually a generative force.[14] Thus, the agency reflects a person's motivation to succeed in goal achievement and thus could represent the emotional part of hope.[15] Meanwhile, well-being or wellness at work incorporates ones' satisfaction with the various personal life as well as work-life aspects. Over the last 3 decades, the well-being of nurses has been overwhelmed by stresses and challenges in their daily practice.[16] Hence, wellness has been increasingly addressed in nursing research related to professional identity and hope.[17] However, there is still a paucity of research in this area.[18,19]

Hope is an advantageous belief that motivates human beings, makes them feel at ease with today, and enables having belief in tomorrow. To illustrate, having hope mandates to trust in the personal capability to have relatively some control over the evolving events.[20,21] Therefore, hope could be figured as an optimistic intellectual condition that is relying on a deep sense of successful capacity to fulfill personal objectives (agency) and mastering the abilities, and having the necessary resources that could make this happen (pathways). Agency can also be described as an individual's motivation about his/her private success linked with fulfilling the personal specified goals, which therefore could be regarded as the emotional dimension of hope.[22] On the other hand, pathway refers to the person's cognitive capability to make a pathway and plan about personal dreams and make actions to triumph over limitations in the pursuit of the desired goals, and therefore could be viewed as the cognitive dimension of hope. Both elements are shared and closely associated with each other.[21]

Well-being has been described as the balance and difference between an individual's resources and the challenges faced, whereby stable well-being is achieved when humans have the psychological, social, and

physical resources they require to meet daily psychological, social, and physical challenges.[23] Myers, Sweeney[24] additionally defined holistic wellness depending on Adlerian theoretical concepts and proposed it as a lifestyle-oriented pursuit of maximum health that integrates the body, mind, and spirit. The mental health professions used the holistic wellness as a philosophical standard and combined it into their professional identity,[25] clinical expertise,[26] accreditation requirements,[27] and student training processes.[28]

The period of internship represents an exciting time for nursing students to expand their knowledge and to bridge their clinical practice; however, it constitutes a major challenge for them to formulate their professional identity. The feeling of wellness certainly helps nurse interns ease a smooth transition from the role of the graduate nurse to the practitioner nurse role, and successfully complete the internship training requirements. Moreover, possessing a certain degree of hope is required in order to go through the long path of nursing education and to gain the necessary motivation during the challenging clinical internship program; therefore, the necessity for future hope is indicated by the fact that it enhances nurse interns' practice and improves their profession.[29]

Although professional identity, wellness, and future hope have been studied separately in much previous research work around the world, no studies have been carried out to investigate the 3 variables among nurse interns, their inter-relations, and correlations, especially in the Arab region and in Egypt. For those reasons, it is deemed necessary to assess the nurse interns' level of professional identity feeling and sense of wellness and future hope; and to investigate the inter-relations and correlations among those variables for the nurse interns in Egypt.

The aim of the study is to investigate state of professional identity, sense of wellness, and future hope among nurse interns, and to investigate the inter-relations and correlations among the professional identity, wellness, and future hope for nurse interns in Egypt.

2. Methods

2.1. Research design

A cross-sectional, analytic, descriptive, correlational study design was used to test these relations in the study.

2.2. Setting and procedures

Due to the convenience of the researchers and their easy accessibility to information, the current study was carried out at Zagazig and Suez Canal University Hospitals, where the questionnaires were distributed by the researchers of the study to the nurse interns after giving a brief explanation about the study procedure, purpose, and contact for any question. The participants were given sufficient time to fill up the questionnaire before being returned to a closed box affixed next to the exit door of each hospital. Anonymity was guaranteed as no personal information was required; however, the intern nurses were followed up 2 days later to assure that the questionnaires are filled up properly and submitted to the collection box. The data collection was carried out during January 2020.

2.3. Sampling

The sample size was calculated according to the target population of the study which constituted 306 nurse interns who graduated from the 2 included faculties of nursing prevalent at that time and having their internship training in the different departments. The total required sample size was calculated, using the Open-Epi version 3.01 software package, to be a minimum of 210 subjects considering a 99% confidence level, with 5% confidence limits, 50% anticipated frequency, and a design effect value of 1.0.[30]

Therefore, a convenience sample of 210 nurse interns, 105 from each university, from both genders were included in the study. The criteria for inclusion were: being a nurse intern, graduated from either Zagazig or Suez Canal University, and willing to participate in the study.

2.4. Data-collection tools

A self-administered questionnaire form was used in data collection. It comprised 3 valid standardized tools in addition to a section for respondent's demographic and training characteristics such as age, gender, chronic illness, university, graduation grade, and pre-university education, as well as the choice of nursing study and having a nurse role model.

The first tool was the Professional Identity Scale for Nursing Students (PISNS) developed by Hao, Niu[31] to measure the professional identity of nursing students; its reported reliability was 0.83. The scale consists of 17 items categorized into 5 dimensions: professional self–image (6 items); benefit of retention and turnover risk (4 items); social comparison and self–reflection (3 items); independence of career choice (2 items); and, social modeling (2 items). The rating is based on a 5-point Likert scale from "absolutely disagree" to "absolutely agree." These are scored from 1 to 5 so that the minimum score is 17 and the maximum is 85, with a higher

score indicating higher professional identity. For ease of comparisons, the sums of the items for each dimension and for the total scale are divided by the numbers of items so that the score ranges from 1 to 5 for all dimensions and for the total scale.

The second tool was the Holistic Health and Wellness Survey. It was developed by Smith[32] to assess the level of individual health. The tool has 75 items categorized into 3 sections, body, mind and spirit, with 25 items in each section. These are rated on a 5-point Likert scale from "strongly disagree" to "strongly agree," scored from 1 to 5, respectively. The scores of each section and for the total scale are summed and divided by the corresponding numbers of items so that the minimum score is 1 and the maximum is 5. A higher score indicates better holistic health and wellness.

The third tool was the Adult Hope Scale (AHS) developed by Snyder, Harris[33] to assess the level of respondent's future hope according to Snyder's cognitive model of hope. It consists of 12 items; 4 of these are filler items not included in the scoring. The remaining 8 items are equally divided into 2 subscales: Agency (i.e., goal-directed energy) and Pathways (i.e., planning to accomplish goals). The response for each item is on an 8-point Likert-type scale ranging from "definitely false" to "definitely true." These are scored, respectively, from 1 to 8. The scores of each section and for the total scale are summed and divided by the corresponding numbers of items so that the minimum score is 1 and the maximum is 8, with a higher score indicating more hope.

2.4.1. Tools reliability

The piloting study was utilized to test the reliability of the scales, which was carried out through measuring their internal consistency and calculating their Cronbach alpha coefficients. The reliability of the 3 scales proved to be high with coefficients 0.95 for professional identity, 0.98 for wellness, and 0.93 for future hope scales.

2.4.2. Pilot study

The 3 scales are standardized and were used in their original format and language and thus did not need any further validation. A pilot study was carried out on 20 nurse interns before performing the main study in order to test the clarity of the scales and the feasibility of the study. They represented about 10% of the calculated required sample. From the pilot study results, it was found that the average time to fill the questionnaire ranged from 20 min to 30 min and that the tool was clear and thus didn't require modification. However, the pilot subjects were excluded from the main study sample.

2.5. Ethical considerations

Prior to conducting the research, approval was obtained from the Deanship of the Faculty of Nursing at Zagazig University and the Suez Canal University after submitting the study proposal to the local ethical committee there. The researchers complied with all research ethics principles according to the Helsinki Declaration.[34] Neither coercion nor financial compensation for participation was exerted, and nurse interns were informed that their participation in the study was totally voluntary, with no consequences if they choose to refuse or withdraw at any time. The potential inconvenience associated with the time necessary to participate in the study was the only risk of study enrollment. The confidentiality and anonymity of any obtained information were guaranteed as no collection of personal identifiers, such as names, phone numbers, or other information was done. The written informed consent was gained from all participants before embarking in the questionnaire fill up, and official permission to use the scales was granted by the original authors.

2.6. Statistical analysis

Data entry and statistical analysis were done using SPSS 25.0 statistical software package.[35] Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables; and means and standard deviations, and medians and quartiles, for quantitative variables. The Kolmogorov–Smirnov test has a significance value below 0.05, indicating that the data did not follow a normal distribution; therefore, nonparametric tests were used for analysis.

The Kruskal–Wallis test was used to determine significant differences in mean values among nurse interns groups, for more than 2 groups, such as subgroup analysis to examine differences in mean professional identity, wellness, and future hope scores based on the graduation grade. The Mann–Whitney *U* test was used to assess differences between 2 independent samples, such as subgroup analysis to examine differences in mean professional identity, wellness, and future hope scores among nurse interns based on the age categories, gender, university, chronic disease, and other dichotomous variables. The Mann–Whitney test and the Kruskal–Wallis test are nonparametric tests used to compare the mean ranks of scores; nevertheless, both

tests do not compare medians; neither do they compare distributions of the scores.

Spearman rank correlation was used for assessment of the inter-relationships among quantitative variables and ranked ones. In order to identify the independent predictors of the scores of professional identity, wellness, and future hope scores, multiple linear regression analysis was used, and analysis of variance for the full regression models was done. Statistical significance was considered at *P*-value < 0.05.

3. Results

The study included 210 nurse interns equally from the Suez Canal and Zagazig universities. Table 1 presents the sociodemographic data of the study subjects. Participants' age ranged from 20 years to 25 years with a median 22.0, mostly females (70.5%). A great majority had general pre-university education (95.2%), and only 43.8% chose studying nursing by own will. Slightly more than half of them had a "very good" graduation level, and had no nursing role model. A few of them (5.2%) reported having chronic diseases.

Table 2 illustrates that the median scores of professional identity ranged from 3.00 for independence in career choice to 4.00 for social modeling. As regards wellness, the highest median score was for the social subscale (3.46). The future hope domains of agency and pathway had equal medians (6.00) out of a maximum score of 8.00. The total wellness median score (3.19) was lower than the total professional identity score (3.56). The median score of future hope (6.00) indicates that at least half of the nurse interns have a score of 6/8 or 75% of the maximum score.

As presented in Table 3, statistically significant relations were revealed between the scores of professional identity and nurse interns' age ($P = 0.007$), gender ($P < 0.001$), choice of nursing by own will ($P < 0.001$), and having a nursing role model ($P = 0.002$). It is evident that the scores were higher among those in the older age group, females, choice of nursing study by own will, and having a nursing role model.

Table 4 points to statistically significant relations between nurse interns' scores of wellness and their graduation grade ($P = 0.04$), and their choice of nursing by own will ($P = 0.004$). As the table shows, the scores

Sociodemographics	*n*	%	M ± SD	Median
Age, years old (20–25)			22.3 ± 0.9	22.0
≤22	128	61.0		
≥23	82	39.0		
Gender				
Male	62	29.5		
Female	148	70.5		
Graduation grade				
Good	40	19.0		
Very good	119	56.7		
Excellent	51	24.3		
University				
Suez Canal	105	50.0		
Zagazig	105	50.0		
Pre-university education				
General	200	95.2		
Technical	10	4.8		
Chose nursing by own will				
No	118	56.2		
Yes	92	43.8		
Have nurse role model				
No	125	59.5		
Yes	85	40.5		
Have chronic disease				
No	199	94.8		
Yes	11	5.2		

Note: N, sample; n, frequency; %, percent; M, mean; SD, standard deviation.

Table 1. Sociodemographic characteristics of nurse interns in the study sample (N = 210).

Items	Scores				
	M	SD	Median	Quartiles	
				1st	3rd
Professional identity (max = 5)	3.45	0.77	3.56	3.02	3.43
Benefit of retention/risk of turnover	3.35	0.93	3.50	3.00	3.35
Independence of career choice	3.25	0.60	3.00	3.00	3.20
Professional self-image	3.38	0.93	3.50	2.88	3.37
Social comparison and self-reflection	3.57	0.97	3.67	3.00	3.57
Social modeling	3.85	1.05	4.00	3.50	3.85
Wellness (max = 5)	3.04	0.99	3.19	2.50	3.03
Physical	2.86	1.11	2.92	2.14	2.85
Psychological	3.04	1.09	3.20	2.53	3.03
Social	3.22	1.11	3.46	2.61	3.21
Future hope (max = 8)	5.50	1.85	6.00	4.66	5.48
Agency	5.50	1.80	6.00	5.00	5.48
Pathway	5.50	2.00	6.00	4.33	5.48

Note: M, mean; SD, standard deviation.

Table 2. Scores of professional identity, wellness, and future hope among nurse interns in the study sample (N = 210).

Items	Professional identity		Mann–Whitney test	*P*-value
	M ± SD	Median		
Age, years old (20–25)				
≤22	3.35 ± 0.75	3.53		
≥23	3.60 ± 0.78	3.71	7.36	0.007**
Gender				
Male	3.06 ± 0.88	3.18		
Female	3.61 ± 0.66	3.71	18.25	<0.001**
University				
Suez Canal	3.54 ± 0.59	3.53		
Zagazig	3.35 ± 0.91	3.71	0.12	0.73
Graduation grade				
Good	3.35 ± 0.79	3.47		
Very good	3.48 ± 0.80	3.65	*H* = 1.70	0.43
Excellent	3.44 ± 0.68	3.53		
Pre-university education				
General	3.46 ± 0.78	3.59		
Technical	3.24 ± 0.60	3.29	1.82	0.18
Chose nursing by own will				
No	3.28 ± 0.74	3.35		
Yes	3.66 ± 0.76	3.82	18.50	<0.001**
Have nurse role model				
No	3.32 ± 0.75	3.47		
Yes	3.63 ± 0.77	3.82	9.91	0.002**
Have chronic disease				
No	3.43 ± 0.78	3.53		
Yes	3.74 ± 0.58	3.65	1.03	0.31

Note: **Statistically significant at $P < 0.01$;
H, Kruskal–Wallis test; M, mean; SD, standard deviation.

Table 3. Relations between nurse interns' professional identity scores and their personal characteristics.

Items	Wellness		Mann–Whitney test	*P*-value
	M ± SD	Median		
Age, years old (20–25)				
≤22	3.06 ± 1.01	3.23		
≥23	3.01 ± 0.96	3.05	0.18	0.67
Gender				
Male	3.17 ± 1.08	3.36		
Female	2.99 ± 0.94	3.13	1.41	0.24
University				
Suez Canal	3.09 ± 0.80	3.16		
Zagazig	3.00 ± 1.14	3.21	0.03	0.85
Graduation grade				
Good	2.72 ± 1.05	2.77		
Very good	3.20 ± 0.90	3.24	*H* = 6.22	0.04*
Excellent	2.92 ± 1.06	3.21		
Pre-university education				
General	3.05 ± 1.00	3.21		
Technical	2.82 ± 0.72	2.73	1.93	0.16
Chose nursing by own will				
No	2.89 ± 0.97	3.04		
Yes	3.24 ± 0.98	3.42	8.08	0.004**
Have nurse role model				
No	2.99 ± 1.02	3.16		
Yes	3.12 ± 0.94	3.24	0.59	0.44
Have chronic disease				
No	3.04 ± 1.00	3.20		
Yes	3.07 ± 0.69	3.00	0.22	0.64

Note: *Statistically significant at $P < 0.05$; H, Kruskal–Wallis test.;
**Statistically significant at $P < 0.01$; M, mean; SD, standard deviation.

Table 4. Relations between nurse interns' wellness scores and their personal characteristics.

were higher among those having "very good" grade, and those who chose nursing study by own will.

Concerning the relations between nurse interns' scores of future hope and their characteristics, Table 5 demonstrates a statistically significant relationship with the graduation grade ($P = 0.02$). It is noticed that the scores were higher among those having a "very good" grade.

Table 6 shows statistically significant, positive, weak-to-moderate correlations among the scores of professional identity, wellness, and future hope. The strongest of these correlations was between wellness and future hope ($r = 0.676$). The table also demonstrates a statistically significant positive weak correlation between age and professional identity.

The multivariate analysis (Table 7) shows that the "choice of nursing study by own will" is a statistically significant independent positive predictor of the scores of professional identity, wellness, and future hope. Additionally, female gender and having a nursing role model are statistically significant independent positive predictors of the professional identity score. Meanwhile, the professional identity and wellness scores were statistically significant independent positive predictors of the future hope score.

4. Discussion

The results of the study showed that more than two-thirds of the study sample was constituted by females, which mostly reflects the ratio of male and female enrollment in nursing colleges at the majority of Egyptian universities, and emphasizes the feminine nature of the nursing profession. The results were consistent

Items	Future hope		Mann–Whitney test	*P*-value
	M ± SD	Median		
Age, years old (20–25)				
≤22	5.46 ± 1.85	6.00		
≥23	5.55 ± 1.85	6.00	0.06	0.80
Gender				
Male	5.63 ± 1.94	6.06		
Female	5.44 ± 1.81	6.00	0.81	0.37
University				
Suez Canal	5.60 ± 1.55	5.88		
Zagazig	5.39 ± 2.11	6.13	0.09	0.76
Graduation grade				
Good	5.20 ± 1.76	5.50		
Very good	5.76 ± 1.79	6.38	$H = 7.64$	0.02*
Excellent	5.11 ± 1.98	5.63		
Pre-university education				
General	5.51 ± 1.88	6.00		
Technical	5.10 ± 1.11	5.00	2.27	0.13
Chose nursing by own will				
No	5.02 ± 1.76	6.00		
Yes	5.63 ± 1.88	6.19	1.69	0.057
Have nurse role model				
No	5.45 ± 1.76	5.75		
Yes	5.58 ± 1.98	6.25	1.46	0.23
Have chronic disease				
No	5.49 ± 1.88	6.00		
Yes	5.70 ± 1.31	5.88	0.02	0.89

Note: *Statistically significant at $P < 0.05$; .

H, Kruskal–Wallis test; M, mean; SD, standard deviation.

Table 5. Relations between nurse interns' future hope scores and their personal characteristics.

Scales	Spearman rank correlation coefficient		
	Professional identity	Wellness	Future hope
Wellness	0.142*		
Future hope	0.273**	0.676**	
Age	0.181**	−0.071	0.000
Graduation grade	0.029	0.062	−0.016

Note: *Statistically significant at $P < 0.05$;

**Statistically significant at $P < 0.01$.

Table 6. Correlation matrix of professional identity, wellness, and future hope scales scores and nurse interns' age and graduation grade.

with a study conducted at Al-Manial University Hospital in Cairo to find that more than three-quarters of nursing staff were female.[36] Also, the findings coincided with other studies conducted on the nursing staff in various countries, like Jordan,[37–39] and Saudi Arabia,[40,41] to confirm a higher percentage of females among the nursing staff. It is clear from the results that more than half of the study sample did not choose to study nursing on a desire, which may be due to the fact that these students have studied nursing based on the grade point average (GPA) in the high school; subsequently, some nurses in Egypt tend to study another specialization later due to dissatisfaction with the specialty or lack of awareness of the nature of work.[42]

The results of the present study indicate that the nurse interns in the study settings are having above-average scores in professional identity, wellness, and future hope. These 3 are positively and significantly inter-correlated with each other, which answers the research question.

According to the results of the present study, the median score of nurse interns' professional identity was >70% of the maximum attainable score, which indicates that at least one-half of them were having relatively high scores. The findings also indicate that the professional identity dimension of independence in career choice had the lowest score, whereas social modeling was the highest. The low scores in the independence dimension might be explained by the hypothesis that some nurse interns could have the feeling that they work as subordinates to doctors, and that they were being exploited through assigning them tasks not related to their profession.

In congruence with the foregoing, Alharbi and Alhosis[43] in a study on nurse interns in Saudi Arabia reported similar explanations underlying their relatively low professional identity. Meanwhile, and in contradiction with the present study results, Elhanafy and Saleh[44] in Mansoura, Egypt, found that more than half of the nurse interns in the study setting were having a low professional identity. Similar findings were reported in a Chinese study.[45] Meanwhile, the problem of deterioration of professional identity in nursing, as new graduates start actual practice, has been addressed and was attributed to the loss of the idealism they had at the time when they selected this profession.[46,47]

Concerning the factors influencing nurse interns' professional identity, the bivariate analyses revealed higher scores among older age females nurse interns, who opted to study nursing study by their own will, and who were having a nursing role model. However, in the multivariate analysis, all these factors persisted except the age factor. The positive effect of female gender on professional identity might be explained by the historically known female predilection of this career. In agreement with this, Mohtashami, Rahnama[48] stressed that nursing is yet largely a feminine profession since it helps women achieve their natural caring and nurturing

Items	Unstandardized coefficients		Standardized coefficients	*t*-test	*P*-value	95% Confidence interval for B		*r*-square	Model ANOVA	Variables entered and excluded
	B	Std. Error				Lower	Upper			
Professional identity								0.16	$F = 14.33$, $P < 0.001$	Age, pre-university education, graduation grade, university, chronic disease
Constant	40.22	3.26		12.341	<0.001**	33.79	46.65			
Female gender	8.59	1.82	0.30	4.710	<0.001**	4.99	12.18			
Chose nursing by own will	5.02	1.70	0.19	2.946	0.004**	1.66	8.38			
Nurse role model	3.79	1.72	0.14	2.205	0.029*	0.40	7.18			
Wellness								0.03	$F = 6.60$, $P = 0.011$	Age, gender, pre-university education, graduation grade, university, nurse role model, chronic disease
Constant	216.85	6.72		32.277	<0.001**	203.60	230.09			
Chose nursing by own will	26.07	10.15	0.18	2.568	0.011*	6.06	46.08			
Future hope								0.49	$F = 67.46$, $P < 0.001$	Age, gender, pre-university education, graduation grade, university, nurse role model, chronic disease
Constant	0.11	4.04		0.028	<0.001**	7.85	8.07			
Chose nursing by own will	3.21	1.54	0.11	2.082	0.039*	6.25	0.17			
Wellness score	0.14	0.01	0.68	13.616	<0.001**	0.12	0.16			
Professional identity score	0.24	0.06	0.21	4.147	<0.001**	0.13	0.35			

Note: *Statistically significant at $P < 0.05$.;

**Statistically significant at $P < 0.01$; ANOVA, Analysis of Variance.

Table 7. Best fitting multiple linear regression model for the professional identity, wellness, and future hope score.

role. Moreover, the positive influence of having a nurse role model is in line with Moonaghi, Mirhaghi[49] who explained it by the motivation and modeling provided by these models.

Similarly, the positive effect of role modeling on nurse interns' professional identity has been demonstrated in a study in New Zealand.[50] As regards the effect of the free-willing choice of the nursing study, a similar finding was reported by Sabanciogullari and Dogan[51] who found that the nursing students whose first choice at university entrance was nursing had more professional identity compared to those who were forced to study nursing.

The current study has also demonstrated that nurse interns' scores of wellness were the lowest among the 3 scales used. The relatively low scores of wellness might be explained by the finding that more than half of the nurse interns were forced by their grades in high school to study nursing and did not chose it voluntarily. In fact, the choice to study nursing by own will was the only variable that independently and positively predicted the score of wellness in the multivariate analysis. Moreover, the stressors these interns face during the internship program due to high workload and nursing shortage, role ambiguity and conflicts, and inappropriate assignments might have negative impacts on their physical and psychological wellness. In congruence with this, Baraz, Memarian[52] and Joolaee, Amiri[53] clarified that clinical environments are stressful, erratic, and challenging, thus negatively affecting nurse interns' feeling of wellness. Added to these stressors are the low

salaries and inadequate patient care equipment and supplies in internship program settings.[10]

Regarding future hope, the results of the present study indicate that at least one-half of the nurse interns had a score reaching up to 75% of the maximum attainable score. This indicates that most of them were having high aspirations toward their future career. This score was significantly higher among those having a "very good" grade in graduation. However, surprisingly, the multivariate analysis identified the choice of nursing study by own will as a negative predictor. This means that the nurse interns who were forced to study nursing were having better future hope. This might be explained by that such nurse interns were convinced with the study of nursing and realized that this career would give them a better future in comparison with other study disciplines. In line with this, Willetts and Clarke[54] clarified that the learning process contributes to interns' professional formation and their readiness to involve themselves in a professional role over time. This might enhance their outlook on the future.

In response to the research question, the present study has also demonstrated significant positive correlations among the scores of professional identity, wellness, and future hope. Moreover, the multivariate analysis identified professional identity and wellness scores as significant independent positive predictors of the future hope score. Thus, the nurse interns having a positive look at their future were those having high scores in professional identity as well as in wellness. This is quite plausible since having a high level of professional identity would improve the nurse intern's feeling of wellness, and consequently fosters his/her aspirations of a better future. In agreement with this, a study in China demonstrated that hope was significantly associated with the professional identity.[55] On the same line, a qualitative study on Greek nurses revealed that the way nurses perceive themselves from the personal as well as the professional aspects, i.e., their professional identity, does influence their wellness feelings.[56]

5. Conclusions

The study findings indicated that nurse interns' professional identity, wellness, and future hope were positively inter-correlated. Their wellness was the lowest, and it should be fostered as it was the main predictor for future hope. The internship programs should be modulated to improve nurse interns' professional identity, particularly regarding independence, and should foster their well-being in the clinical environment. The "choice of nursing study by own will" was a statistically significant independent positive predictor of the scores of professional identity, wellness, and future hope.

Recommendations

The focus on raising morale, increasing independence, and self-confidence, and improving the future optimistic view related to career development opportunities is one of the main priorities and urgent tasks for nurse interns at Egyptian hospitals. To achieve those goals, there must be synergy between the Faculties of Nursing in the Egyptian universities and the training hospitals for nurse interns, which most probably applies to the nursing internship programs in the neighboring countries in the Middle East Region. Upgrading and unifying the goals and learning objectives of the nursing curriculum is recommended, as improving the teaching process and curriculum development contributes to the professional formation and identity integration of nurse interns. Giving opportunities for nursing students to choose their preferred specialty of education is highly recommended, and certainly has a positive reflection on their professional identity, wellness, and future hope.

Limitations

There is a need for further qualitative research to identify the themes influencing nurse interns' professional identity, future hope, and wellness. The limitations that exist with randomization and the small sample size are the most prominent threats to the external validity of our study (i.e., the generalizability of the study's findings). For more generalizability, similar studies are proposed in various nursing internship programs in Egypt, taking random and larger sized samples.

Ethical approval

Ethical approval to carry out the research study was granted by the local ethical committees of the Faculty of Nursing, Zagazig University, and the Faculty of Nursing, Suez Canal University by way of a decision of the chairpersons of the committees, the deans of the Faculties of Nursing. No ethical committee reference number was awarded to this cross-sectional study as the ethical committee was newly established and their main focus is on approving experimental research studies. The informed consent had had to be read and approved before embarking in the questionnaire fill up, and therefore, the consent form was granted by all nurse interns enrolled in the current study.

Conflicts of interest

All contributing authors declare no conflicts of interest.

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