

## ORIGINAL PAPER

## CHANGES IN ATTITUDES OF FULL-TIME AND PART-TIME NURSING STUDENTS IN CROATIA ON NURSING DURING THEIR EDUCATION

Snježana Čukljek<sup>1</sup>, Vesna Jureša<sup>2</sup>, Sanja Ledinski Fičko<sup>1</sup>, Ana Marija Hošnjak<sup>1</sup>, Martina Smrekar<sup>1</sup><sup>1</sup>Department of Nursing, University of Applied Health Sciences, Croatia<sup>2</sup>Department of Social Medicine and Organisation of Health Care, School of Medicine, University of Zagreb, Croatia

Received July 4, 2018; Accepted January 9, 2019. Copyright: This is an open access article distributed under the terms of the Creative Commons Attribution International License (CC BY). <http://creativecommons.org/licenses/by/4.0/>

**Abstract**

**Aim:** The aim of this study was to determine the attitudes of nursing students towards nursing, and differences in attitudes between students engaged in full-time and part-time nursing study. **Design:** A three-year longitudinal study was conducted. **Methods:** The study included full-time and part-time students in their first and final (third) year of nursing study. The students voluntarily completed the Nursing Image Questionnaire (NIQ7) and a questionnaire that included demographic information. **Results:** The results showed a statistically significant difference between full-time and part-time students in attitudes towards nursing roles and responsibilities, professionalism, and nursing stereotypes in society. An analysis of variance showed that full-time and part-time students did not differ in mean results from the NIQ7 in their first year of study, after which results increased in value for both group of students, increasing somewhat faster for full-time students, with their final results after the third year of study being higher than those of part-time students. **Conclusion:** Attitudes towards nursing changed in both groups of students (full-time and part-time) during their study programs, but with some differences between the groups.

**Keywords:** development, full-time and part-time nursing study, nursing education, professional identity, student.

**Introduction**

During their education nursing students should acquire the knowledge, skills, attitudes, and competences for independent and professional implementation of nursing care. Students are expected to develop a professional identity and attitudes, and a readiness to continue with further professional education.

There is a long tradition of nursing education in Croatia. The first nursing school in Croatia was founded in 1921, and high school nursing education began in 1953 (Kalauz, Orlic-Sumić, Simunec, 2008). The education of nurses through part-time study dates back to the 1970s, and today a large number of nurses are educated through part-time study programs.

At the time of the study, nursing education at secondary school level lasted four years and took place in vocational nursing schools. The curriculum required 3,332 hours of study, with a ratio between

theory and practice of 3 : 1 (Kalauz, Orlic-Sumić, Simunec, 2008). After completing their education, nurses completed one-year internships and received licenses for independent work as nursing assistants, after passing their final examinations.

Since the academic year 2005/06 the education of nurses at baccalaureate level has been harmonized with the directives and recommendations of the European Union, World Health Organization, and the Bologna Declaration (Kalauz, Orlic-Sumić, Simunec, 2008). Following the Bologna Declaration, master's nursing programs were introduced (Kalauz, Orlic-Sumić, Simunec, 2008).

After completing their undergraduate studies, nurses are expected to be independent in assessing patient status, formulating nursing diagnoses, and planning and conducting nursing care. Nurses should be able to evaluate the quality of nursing care provided, and to plan and conduct nursing research. Their scope of practice is broader than that of nursing assistants, and their professional responsibilities are greater.

Today, nursing education takes place at two levels: secondary and higher education. Since 2010 nursing education at secondary level has taken place in vocational schools for nurses and lasts five years.

---

Corresponding author: Snježana Čukljek, Department of Nursing, University of Applied Health Sciences, Mlinarska 38, Zagreb, Croatia; e-mail: [snjezana.cukljek@zvuh.hr](mailto:snjezana.cukljek@zvuh.hr)

---

*It is aligned with Directive 2005/36/EC, and requires 4,600 hours of study.*

Higher education in nursing in the Republic of Croatia takes place at universities and polytechnical institutions, and is in line with the provisions of European Union Directives 2005/36/EC and 2013/55/EU, and recommendations of the World Health Organisation and the Bologna Process, focusing on learning outcomes. Since 2014, classes in nursing studies have been taught according to the so-called “Core Curriculum”, a uniform curriculum across the country. The study program consists of compulsory courses of 158 ECTS (European Credit and Transfer Accumulation System), worth 180 ECTS credits, and elective courses proposed by each institution, worth 22 ECTS credits (Ministry of Science and Education, 2014).

Full-time nursing study is undertaken after completion of secondary education. Part-time studies are undertaken exclusively by students with a license to work as nursing assistants after graduation from a vocational school of nursing. During the program, almost all part-time students work as nursing assistants, and classes are held in turnovers.

An “attitude” can be defined as a learned tendency to respond in a consistently favourable or unfavourable way to a given object (Pennington, 2001). Attitudes can change, and the process of change most commonly affects life circumstances, development (personal maturity), experience, and information about the object towards which the attitude is held (Hewstone, Stroebe, 2003).

Having positive attitudes towards a profession plays an important role not only in individual success, but also in the development of the profession as a whole (Eser et al., 2008, as cited in Midilli, Durgan, 2017).

Research indicates that attitudes towards nursing change during nursing study due to the influence of the educational process (Sand-Jacklin, Schaffer, 2006; Bolan, Grainger, 2009; Safadi et al., 2011).

A more positive attitude was observed in students with previous clinical experience as nurses, their attitudes towards nursing are more stable (Wilson et al 2011; Koushali, Hajiamini, Ebadi, 2012; Ten Hoeve et al., 2016), and they are more successful during the course (Wilson et al., 2011).

Idealistic views of the profession held when enrolling fade (Brodie et al., 2004; Milisen et al., 2010), professional attitudes are adopted, and attitudes are positively changed (Vanhanen, Janhonen, 2000; Karaoz, 2004; Day et al., 2005; Safadi et al., 2011; Ten Hoeve et al., 2017). During the study program, most respondents have a positive attitude towards

nursing. (Matheka et al., 2014; Ten Hoeve et al., 2016; Midilli, Durgun, 2017)

Students believe that nurses are advocates of patients' rights, that they protect patients in the healthcare system, and that interventions made by nurses are as important as those made by doctors. They also believe that nurses are involved in the development of health policy, that research is necessary for the development of nursing, and that nurses are capable of independent practice (Grainger, Bolan, 2006; Bolan, Grainger, 2009; Ten Hoeve et al., 2016).

Students consider that a bachelor's degree is required for entrance to the nursing profession (Grainger, Bolan, 2006; Bolan, Grainger, 2009), and that nurses are not well paid for their work (Grainger, Bolan, 2006; Bolan, Grainger, 2009; Matheka et al., 2014).

Positive attitudes towards the profession are necessary if nurses are to remain in the profession, and develop professionally. As the process of education and clinical experience have an impact on students' attitudes, the purpose of this study was to determine attitudes, and changes in attitudes, depending on whether students are in full- or part-time study.

## Aim

The aim of this study was to determine the attitudes of nursing students towards nursing, and differences in attitudes between those students engaged in full-time and part-time nursing study.

## Methods

### Design

A three-year longitudinal study was conducted.

### Sample

The study included all nursing students who enrolled in the first year of nursing study in 2012, and the same students at the end of their studies in 2015. The study included 115 full-time students and 151 part-time students enrolled in the first year of baccalaureate nursing study in 2012 at the University of Applied Health Sciences in Zagreb, and the same students in 2015 in the final (third) year of their nursing course. In the final year, the study included 106 full-time students and 129 part-time students. The full-time nursing students came from vocational schools for nurses and other high schools. Part-time nursing students had graduated from vocational schools of nursing, had completed an internship, and had a license to work as nursing assistants.

### Data collection

The students voluntarily completed the Nursing Image Questionnaire (NIQ7), translated into Croatian, and a questionnaire that included demographic information (age, gender, marital status, years of service).

The NIQ7 was developed by Toth, Dobratz, Boni (1998), and includes 30 items regarding the roles, tasks, values, social stereotypes, professionalism, and performance of nurses. Respondents completed the questionnaire using a Likert-type scale, wherein the points in each item are in a possible range of 1 to 5, depending on the degree of agreement with the statements on nurses and nursing, with 1 representing full disagreement, and 5 representing full agreement (Toth, Dobratz, Boni, 1998). In completing the questionnaire, respondents can score between 30 to a maximum of 150 points. A higher result achieved in the questionnaire indicates a more positive attitude towards nursing, and a lower result indicates a negative attitude. The reliability, measured by Cronbach alpha coefficient, ranged from 0.75 to 0.80 (Toth, Dobratz, Boni, 1998).

After receiving approval from the author to use the questionnaire, it was translated into Croatian, with cross-cultural adaptations based on the recommendations of Beaton, Bombardier, Guillemin, and Bosi Ferraz.

In translation of the questionnaire, it was necessary to alter items 4 and 26. In item 4 a change was made regarding the color of the nursing uniforms worn in Croatia. Thus after adaptation the translation of item 4 reads: "Nurses should wear a blue uniform in order to be recognized". In order to make item 26 clear, the translated version listed advanced levels of education (Čukljek, Juresa, Babic, 2017).

Reliability, measured by Cronbach alpha coefficient in this study ranged from 0.65 to 0.76.

Research was conducted in two phases: during the first year of the nursing study program (fall 2012), and in the last semester of the third year (spring 2015). At the beginning of the study the purpose of the research was explained to the students, and they informed how to complete the questionnaire, and that participation in the study was anonymous and voluntary.

In the first phase (fall 2012), the questionnaire was distributed to all the students enrolled in the nursing study program at the University of Applied Health Sciences in Zagreb in the academic year 2012/2013, and they were asked to complete the questionnaire before the start of classes related to nursing. From a total of 123 full-time students, 115 completed the questionnaire (93%), and from 169 part-time

students, 151 did so (89%). Students that did not wish to participate in the study returned the questionnaire uncompleted.

In the second phase (spring 2015), data collection took place in the last semester of the third year, during one of the final lectures. The questionnaire was offered only to students that had participated in the first phase of the research. A smaller number of students completed the questionnaire in the third year as some students had prematurely terminated their studies.

### Data analysis

Statistical analysis was conducted using SPSS 17.0 software. Normality was determined by the Kolmogorov-Smirnov test, with reliability of  $p < 0.05$ .

To determine the statistical significance of differences in the answers of full-time and part-time nursing students during the first and third years of study, the Mann-Whitney U test, and analysis of variance were used, with reliability of  $p < 0.05$ .

### Results

Most students in both groups were female. In the first year of the study programme, the average age of full-time students was mean = 19.59. All students were single, one was working as a nursing assistant, and only six had had previous work experience as a nursing assistant. For the part-time nursing students, the average age was mean = 31.72. Most were married (55.6%), and 96.7% were working as nursing assistants. The average work experience of part-time students was 11.49 years.

In the survey at the end of the final (third) year, the average age of full-time students was mean = 22.58, one was married, and none were working. For part-time nursing students, the average age was mean = 35.3, a larger number than before were married (66.6%), and 97.6% were working as nursing assistants. The average work experience of all part-time students was 14.93 years (Table 1).

In the first year of study, statistically significant differences were observed in 18 of the 30 questionnaire items. Full-time students achieved lower attitude scores compared to part-time students in nine of 18 items where a statistically significant difference was observed. In the third year of study, statistically significant differences were observed in 19 out of 30 items. Full-time students had more positive attitudes in 15 of the 19 items where statistically significant differences were found (Table 2).

**Table 1** Demographics

		1 <sup>st</sup> year				3 <sup>rd</sup> year			
		Full-time n = 115		Part-time n = 151		Full-time n = 106		Part-time n = 129	
Gender	female	103	89.6%	143	94.7%	95	89.6%	126	97.7%
	male	12	10.4%	8	5.3%	11	10.4%	3	2.3%
Age	18–25	115	100%	36	23.8%	99	93.4%	8	6.2%
	26–30	0	0	37	24.5%	7	6.6%	31	24%
	31–40	0	0	59	39.1%	0	0	59	45.7%
	41–50	0	0	19	12.6%	0	0	27	20.9%
	51–55	0	0	0	0	0	0	3	2.4%
	not stated	0	0	0	0	0	0	1	0.8%
		$\bar{X} = 19.59$		$\bar{X} = 31.72$		$\bar{X} = 22.58$		$\bar{X} = 35.3$	
		SD = 1.41		SD = 6.99		SD = 1.45		SD = 7.28	
Marital status	married	115	100%	59	39.1%	105	99.1%	37	28.7%
	single	0	0	84	55.6%	1	0.9%	86	66.6%
	divorced	0	0	5	3.3%	0	0	5	3.9%
	not stated	0	0	3	2%	0	0	1	0.8%
Work place	hospital care	0	0	103	68.2%	0	0	92	71.3%
	outpatient care	1	0.9%	43	28.5%	0	0	34	26.3%
	unemployed	0	0	5	3.3%	0	0	1	0.8%
	not stated	114	99.1%	0	0	106	100%	2	1.6%
Years of experience	1–5	6	5.2%	45	29.8%	6	5.7%	12	9.3%
	6–10	0	0	30	19.9%	0	0	31	24%
	11–20	0	0	58	38.4%	0	0	57	44.2%
	21–30	0	0	18	11.9%	0	0	25	19.3%
	31–33	0	0	0	0	0	0	3	2.4%
	not stated	0	0	0	0	0	0	1	0.8%
		$\bar{X} = 1.75$		$\bar{X} = 11.49$		$\bar{X} = 1.5$		$\bar{X} = 14.93$	
				SD = 7.22				SD = 7.64	

When comparing the results of full-time and part-time students in the first and third years of study, we found that of the 18 items with statistically significant differences during the first year, 14 of them were observed again in the third year of study. Differences were no longer statistically significant for the remaining four items: questions related to the importance of nurses' interventions, nurses' ability to work independently, the importance of time spent at the bedside of patients, and appreciation of the nursing profession.

For five of the items without difference during the first year, differences were observed in the third year of study. Full-time students felt more strongly that nurses act as a resource for individuals with health problems, that they integrate health teaching and research findings into their practice, and that a major goal of nursing research is to improve patient health. Part-time students gave higher scores regarding the importance of time spent on education.

Of the items for which statistically significant differences between full-time and part-time students in both measurements were observed, only two items

followed the same pattern: part-time students achieved higher attitude scores than full-time students on the items “many nurses who seek advanced degrees in nursing would really rather be physicians”, and “nurses are adequately paid for the work they do”. In the remaining three items (“nurses are patients' advocates”; “nurses in general are kind, compassionate human beings”; “research is vital to nursing as a profession”), there was a change in pattern: in the first year, part-time students achieved higher attitude scores, and in the final year, higher scores were attained by full-time students (Table 2).

The results of analysis of variance regarding the type of course and the point of measurement, taking into account roles, tasks, and characteristics, revealed that the results of full-time and part-time students did not differ [ $F(1/481) = 0.1657$ ;  $p = 0.199$ ], and the average results of the two groups of students did not differ at the beginning and at the end of the study [ $F(1/481) = 2.37$ ;  $p = 0.105$ ]. The interaction effect test showed a significant interaction between the type of study and the point of measurement [ $F(1/481) = 15.795$ ;  $p < 0.001$ ]. Attitudes of full-time students about the roles, tasks and characteristics

**Table 2** Results from Nursing Image Questionnaire

	1 <sup>st</sup> year		3 <sup>rd</sup> year	
	Result*	p	Result*	p
Nurses are patients' advocates	6143.50	0.000	5883.00	0.043
Nurses protect patients in the healthcare system	6710.00	0.001	5829.50	0.038
Nurses participate in the development of healthcare policies	6504.50	0.003	3919.00	0.000
Nurses should wear a blue uniform in order to be identified**	7227.00	0.025	5057.50	0.001
Nurses act as a resource for individuals with health problems	8292.00	0.534	5883.50	0.036
Nurses in general are kind, compassionate human beings	7141.00	0.009	5603.50	0.014
It takes intelligence to be a nurse	7653.50	0.077	6706.00	0.786
The services given by nurses are as important as those given by physicians	7477.00	0.022	6546.50	0.449
Everyone would benefit if nurses spent less time in school and more time caring for patients**	8331.50	0.560	5213.50	0.001
Nurses integrate health teaching into their practice	8026.00	0.278	5756.00	0.020
Research is vital to nursing as a profession	7109.50	0.006	5765.00	0.023
Nurses are politically active	7176.00	0.018	4975.50	0.000
Nurses are capable of independent practice	5964.50	0.000	6676.50	0.729
Nurses speak out against inadequate working conditions	8479.50	0.831	6727.50	0.826
Nurses are compensated sufficiently for their work by the knowledge that they are helping people**	7937.50	0.302	6279.50	0.255
Nurses should have a right to strike	8046.00	0.317	6064.00	0.083
Nurses follow physicians' orders without question**	8161.50	0.386	6012.50	0.097
Men make good nurses	6926.00	0.003	4973.50	0.000
Many nurses who seek advanced degrees in nursing would really rather be physicians**	5583.50	0.000	5747.00	0.027
Nursing is exciting	7080.00	0.005	4998.50	0.000
Nurses incorporate research findings into their clinical practice	8680.00	0.997	5573.00	0.009
The major goal of nursing research is to improve patient care	8551.50	0.819	5541.00	0.006
Nurses are adequately paid for the work they do**	5928.50	0.000	5925.00	0.050
Nurses value time at the bedside caring for patients	6870.00	0.003	6192.00	0.182
Nurses should have a baccalaureate degree for entrance into practice	5635.00	0.000	5080.50	0.000
Nurses with completed undergraduate nursing studies and graduate studies significantly contribute to patient care	5781.50	0.000	4655.50	0.000
One advantage to being a nurse is marrying a physician **	5319.00	0.000	6048.00	0.025
Nursing is a respected profession	6065.50	0.000	6513.00	0.584
Nurses consistently update their practices in relation to current health trends	8577.50	0.859	6807.50	0.952
Nurses feel good about what they do	8312.50	0.527	6350.50	0.325

\*Mann-Whitney U test; \*\*recoded item

In the area of professionalism, full-time students achieved higher scores than part-time students, and scores were generally higher at the end of the course [ $F(1/495) = 17.561$ ;  $p < 0.001$ ].

The analysis of the average results of the value area performed by analysis of variance did not indicate any difference in the type of study [ $F(1/492) = 0.021$ ;  $p > 0.05$ ] and the measurement time [ $F(1/492) = 0.316$ ;  $p > 0.05$ ].

In the analysis of variance, we analyzed differences in the mean results regarding stereotypes with respect to the type of study and point of measurement. The analysis indicated that the type of study was an unimportant main factor [ $F(1/491) = 3.036$ ;

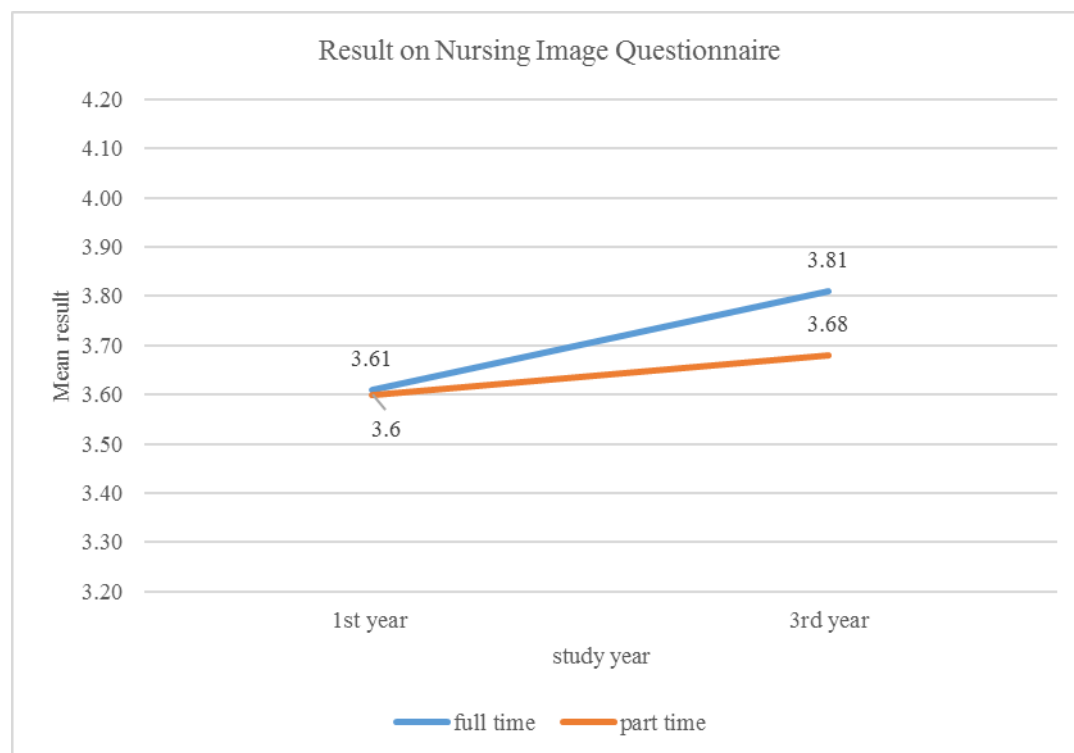
$p = 0.082$ ], whereas the point of measurement had a significant main effect [ $F(1/491) = 66.135$ ;  $p < 0.001$ ], indicating that the average results in this the area increased between the first and second points of measurement. Significant interaction [ $F(1/491) = 6.761$ ;  $p = 0.010$ ] was indicated, suggesting that part-time and full-time students differed during the first year of study, but that this difference no longer existed by the third year of study.

Analysis of variance was used to determine the differences in the overall results from the questionnaire (calculated as the average of all 30 responses), and a significant main effect regarding the type of course [ $F(1/474) = 6.407$ ;  $p = 0.012$ ] was

indicated [ $F(1/474) = 27.483$ ;  $p < 0.001$ ] with significant interaction [ $F(1/474) = 6.332$ ;  $p = 0.012$ ].

The results indicated that full-time and part-time students did not differ in average results on the questionnaire in the first year of study, after which

the results increased in value for both full-time and part-time students, with the increase for full-time students being somewhat faster, and the final results in their third year of the study being higher than those of part-time students (Figure 1).



**Figure 1** The average result on the Nursing Image Questionnaire

## Discussion

The results of the research show that there are differences in the attitudes of students on full-time and part-time study programmes towards nursing at the beginning and end of study.

Full-time and part-time students did not differ from the average results on the questionnaire in the first year of study, after which the results increased in value for both student groups, with the increase for full-time students being somewhat faster, and their final results at the end of study being higher than those of part-time students.

In studies conducted using the same questionnaire (NIQ7), Grainger and Bolan (2006), Bolan and Grainger (2009), and Ten Hoeve et al. (2017), also report changes in attitudes during study.

Students with previous clinical experience (part-time students) undergo a different process of socialisation in the profession. During nursing study, they encounter new roles which they should adopt upon graduation, and go through various clinical experiences. They provide a clinical model for other

students who have no experience, boosting confidence (Brennan, McSherry, 2004). On the other hand, they face situations in which their knowledge and experience is insufficient, which reduces self-confidence. Students who work have greater difficulty assuming the role of students acquiring new knowledge (Brennan, McSherry, 2004). Adoption of knowledge and changes in professional attitudes are most effective when part-time students are adequately prepared and made aware of requirements and expectations during the study programme (Suva et al., 2015).

In this study, full-time students at the beginning of the course achieved lower scores regarding the importance of research to the nursing profession compared to part-time students, while by the third year attitudes had changed, with full-time students having statistically significantly more positive scores. The results of this study are consistent with research conducted by Čukljek, Karačić, Ilić (2011), in which 93% of final year students on nursing courses stated that research was relevant to the development of the nursing profession. In addition, in the study of Bolan

and Grainger (2009), students statistically significantly more often stated that research was necessary for the nursing profession at the end of the course than at the beginning. Syme and Stiles (2012) state that employed nurses are aware of the importance of research in their own practice and support it, but opportunities to participate in research are limited. Hence, the lower scores of part-time students at the end of the course may be related to current nursing practice, work overload and possible shortages of models for research.

Attitudes of students about the importance of education were more pronounced at the end of the course in both groups of students. At the end of the course, both groups more strongly believed that nurses should have a baccalaureate degree before entering into practice, and that nurses with undergraduate and graduate studies significantly contribute to patient care. In both measurements full-time students gave statistically significant higher values. The increase in strength of opinion at the end of the course may be related to the completion of their studies, or a change in their status within the profession.

In our study, the students at the end of the course strongly emphasized the importance of time spent on education, which may also be related to the fact that they had spent a significant amount of time on education in the past three years. Suva et al. (2015) have indicated that a lack of support from colleagues and employers, and financial difficulties may affect study.

In this study, attitudes of full-time students to the roles, tasks and characteristics of nurses were more positive in the second measurement compared to the first. Part-time students gave lower scores in the second measurement compared to the first. Emeghebo (2012) states that nurses at the beginning of their careers have a positive opinion of nursing, but in the course of their work this opinion becomes lower due to the influence of other nurses.

Since part-time students come from the healthcare system and most part-time students work as nursing assistants, it is interesting to note that third year students gave lower scores on questions related to current nursing practice. Further research to determine the reasons for these changes – whether they are related to an increase in knowledge, and professionalization, or down to working conditions – may be beneficial.

At the end of the course, respondents gave lower scores for the satisfaction of nurses with the work they do, while in the studies of Tawash and Cowman (2015), Bolan and Grainger (2009), and Grainger and

Bolan (2006), most respondents were satisfied with the work they did.

Research results show that, on average, respondents' scores regarding social stereotypes in nursing in both groups had increased, and that the differences that existed during the first year of study were not present during the third year of study. The same results were obtained in the research study by Grainger and Bolan (2006), and Bolan and Grainger (2009). Changing attitudes in this area may be related to the development of professional identity during the course, i.e., the adoption of attitudes, values, knowledge, beliefs and skills shared by individuals within a professional group, and related to the professional role of the individual (Adams et al., 2006).

At the end of the course, more than 90% of part-time students and more than 80% of full-time students stated that they either agreed or fully agreed with the statement that nurses are not adequately paid for their work. Research by Grainger and Bolan (2006), Donelan et al. (2008), Bolan and Grainger (2009), Čukljek, Karačić, Ilić (2011), and Jović et al. (2015) also suggests that respondents (students, nurses, and the general population) believe that nurses are not adequately paid for their work. Although they consider that nurses are not paid enough, and they state that the fact that nurses help other people is insufficient reward, students (both full-time and part-time) complete their studies, which indicates the development of professional identity.

### **Limitation of study**

The strength of this research is that we followed two groups of students from the beginning to the end of their studies, and that most of the enrolled students participated in the research. A limitation of this study is related to the fact that it was conducted at a single educational institution, which is the oldest and largest higher educational institution for nurses. Students that enrol on its nursing program are highly motivated, which may have influenced the results obtained.

### **Conclusion**

The results of this study conducted on nursing students indicate that the attitudes of students change over the course of undergraduate study, and that differences in attitudes are present, as well as changes in attitudes between full-time and part-time students. Both groups at the end of study demonstrated more positive attitudes towards the nursing profession, but the changes in the attitudes were less pronounced in part-time students, probably due to their work

experience. During the course full-time students adopted a more realistic perception of the profession, whereas part-time students showed a more critical opinion regarding current practice.

To stimulate further development of the nursing profession and the significant number of part-time students, it is important to pay close attention to the education of part-time students so that they may change their attitudes and beliefs and develop the competences associated with a bachelor's degree in nursing. Further research is needed to determine the features of full-time and part-time students which influence these attitudes, in order to propose appropriate educational models.

### Ethical aspects and conflict of interest

The ethics committee of the University approved the implementation of the study. The purpose of the research was explained to the respondents and they received written information outlining the purpose of the research. Students gave their signed consent to participation in the study, and their anonymity was guaranteed. The authors declare that there is no conflict of interest.

### Acknowledgement

The authors would like to thank the organization and participants involved in the research.

### Author contribution

Concept and design (SČ, VJ), data collection (SČ, SLF, MS), data analysis and interpretation (SC, MS, AMH), manuscript draft (SČ), critical revision of the manuscript (VJ, MS, AMH), final approval of the manuscript (SČ).

### References

Adams K, Hean S, Sturgis P, Macleod Clark J. Investigating the factors influencing professional identity of first-year health and social care students. *Learning in Health and Social Care*. 2006;5(2):55–68.

Bolan C, Grainger P. Students in the BN program – do their perceptions change? *Nurse Education Today*. 2009;29(7):775–779.

Brennan G, McSherry R. Exploring the transition and professional socialisation from health care assistant to student nurse. *Nurse Education in Practice*. 2007;7(4):206–214.

Brodie DA, Andrews GJ, Andrews JP, Thomas GB, Wong J, Rixon L. Perceptions of nursing confirmation, change and the student experience. *International Journal of Nursing Studies*. 2004;41(7):721–733.

Čukljek S, Juresa V, Babic J. The cross-cultural (transcultural) adaptation and validation of the Nursing Image Questionnaire. *Nurse Education Today*. 2017;48:67–71.

Čukljek S, Karačić J, Ilić B. Stavovi studenata 3. godine studija sestrinstva o sestrinstvu u Hrvatskoj danas. U: Pavić J, Turuk V, ur. Zbornik radova 11 konferencije medicinskih sestara „Hrvatsko sestrinstvo ususret Europskoj uniji“; 2011 Mar 24–26; Opatija, Croatia. Zagreb: University of Applied Health Sciences; 2011. p. 169–76. (in Croatian)

Day RA, Field PA, Campbell IE, Reutter L. Student's evolving beliefs about nursing: From entry to graduation in a four year baccalaureate programme. *Nurse Education Today*. 2005;25(8):636–643.

Donelan K, Buerhaus P, DesRoches C, Dittus R, Dutwin D. Public perceptions of nursing careers: the influence of the media and nursing shortages. *Nursing Economics*. 2008;26(3):143–150, 165.

Emeghebo L. The image of nursing as perceived by nurses. *Nurse Education Today*. 2012;32(6):e49–e53.

Grainger P, Bolan C. Perceptions of nursing as a career choice of students in the Baccalaureate nursing program. *Nurse Education Today*. 2006;26(1):38–44.

Hewstone M, Stroebe W. *Uvod u socijalnu psihologiju*. Jastrebarsko: Naklada Slap; 2003. (in Croatian)

Jović D, Knežević D, Skrobić M, Matavulj A, Vučković J. Attitudes and opinions of health care students of Medical Faculty in Banja Luka about the study program and nursing as a profession. *Scripta Medica*. 2015;46(1):49–54.

Kalauz S, Orlic-Sumić M, Simunec D. Nursing in Croatia: past, present and future. *Croatian Medical Journal*. 2008;49(3):298–306.

Karaoz S. Change in nursing students' perceptions of nursing during their education: the role of the Introduction to Nursing course in this change. *Nurse Education Today*. 2004;24(2):128–135.

Koushali AN, Hajiamini Z, Ebadi A. Comparison of nursing students' and clinical nurses' attitude toward the nursing profession. *Iranian Journal of Nursing and Midwifery Research*. 2012;17(5):375–380.

Matheka EK, Karani A, Omoni G, Kasusu MA. An analysis of bachelor of science in nursing students attitudes on nursing profession at the end of their basic training: Case of Public Universities, Kenyan. *Journal of Biology, Agriculture and Healthcare*. 2014;4(16):132–139.

Midilli TS, Durgun N. Nursing students' attitudes toward the nursing profession in western Turkey and affecting factors. *Journal of Nursing and Health Science*. 2017;6(1):55–60.

Milisen K, De Busser T, Kayaert A, Abraham I, de Casterlé BD. The evolving professional nursing self-image of students in baccalaureate programs: a cross-sectional survey. *International Journal of Nursing Studies*. 2010;47(6):688–698.

Ministry of Science and Education. *Nursing study curriculum 2013*. [cited 2017 Sep 18]. Available from: [https://mzo.hr/sites/default/files/migrated/tekst\\_zajednicki\\_kurikulum2.pdf](https://mzo.hr/sites/default/files/migrated/tekst_zajednicki_kurikulum2.pdf) (in Croatian)

Pennington DC. *Osnove socijalne psihologije*. 2nd ed. Jastrebarsko: Naklada Slap; 2001. (in Croatian)

Safadi RR, Saleh MY, Nassar OS, Amre HM, Froelicher ES. Nursing students' perceptions of nursing: a descriptive study of four cohorts. *International Nursing Review*. 2011;58(4):420–427.

Sand-Jecklin KE, Schaffer AJ. Nursing students' perceptions of their chosen profession. *Nursing Education Perspectives*. 2006;27(3):130–135.



- Suva G, Sager S, Mina ES, Sinclair N, Lloyd M, Bajnok I, Xiao S. Systematic Review: Bridging the gap in RPN-to-RN transitions. *Journal of Nursing Scholarship*. 2015;47(4):363–370.
- Syme R, Stiles C. Promoting nursing research and innovation by staff nurses. *Applied Nursing Research*. 2012;25(1):17–24.
- Tawash E, Cowman S. Bahraini nursing students' attitudes: from student to nurse – a longitudinal research study. *Journal of Nursing Education and Practice*. 2015;5(12):79–87.
- Ten Hoeve Y, Castelein S, Jansen W, Jansen G, Roodbol P. Predicting factors of positive orientation and attitudes towards nursing: a quantitative cross-sectional study. *Nurse Education Today*. 2016;40:111–117.
- Ten Hoeve Y, Castelein S, Jansen WS, Jansen GJ, Roodbol PF. Nursing students' changing orientation and attitudes towards nursing during education: a two year longitudinal study. *Nurse Education Today*. 2017;48:19–24.
- Toth JC, Dobratz MA, Boni MS. Attitude toward nursing of students earning a second degree and traditional baccalaureate students: Are they different? *Nursing Outlook*. 1998;46(6):273–278.
- Vanhanen L, Janhonen S. Changes in students' orientations to nursing during nursing education. *Nurse Education Today*. 2000;20(8):654–661.
- Wilson A, Chur-Hansen A, Marshall A, Air T. Should nursing-related work experience be a prerequisite for acceptance into a nursing programme?: A study of students' reasons for withdrawing from undergraduate nursing at an Australian university. *Nurse Education Today*. 2011;31(5):456–460.