Nurse Education in Practice 37 (2019) 124–131

Contents lists available at ScienceDirect

Nurse Education in Practice

journal homepage: www.elsevier.com/locate/nepr

Original research

The orientation and attitudes of intermediate vocational trained nursing students (MBO-V) towards their future profession: A pre-post survey

T.C. van den Boogaard[a,*], P.F. Roodbol[b], I.E. Poslawsky[c], Y. ten Hoeve[b]

[a] NHL Stenden University of Applied Sciences, Academy of Healthcare, Postbus 1080, 8900, CB, Leeuwarden, the Netherlands
[b] University of Groningen, University Medical Center Groningen, Health Sciences, Nursing Research, P.O. Box 30.001, 9700, RB, Groningen, the Netherlands
[c] University Medical Center Utrecht, the Netherlands, Division of Neuroscience, and Lecturer Nursing Science, Program in Clinical Health Sciences, 3584, CX, Utrecht, the Netherlands

ARTICLE INFO

Keywords:
Attitude
Nursing students
Orientation
Survey

ABSTRACT

Students' perceptions of nursing influence recruitment and retention in nursing education. Nursing education in the Netherlands differentiates two levels: Bachelor's (HBO-V) and intermediate vocational (MBO-V) level training, with MBO-V students accounting the majority. To avoid the expected nursing shortages, these students' perceptions of nursing need to be explored. We aimed to examine the orientation and attitudes of MBO-V students towards their future profession and their relation to demographic characteristics. A descriptive survey with a pretest-posttest design was conducted. Newly enrolled MBO-V students completed a questionnaire at the beginning and after five months of education, consisting of the Nursing Orientation Tool, the Nursing Attitude Questionnaire and demographic characteristics. The Wilcoxon signed-rank test, Mann-Whitney *U* test and regression analysis were used for data analyses. At the first time point, students agreed most with statements related to caring, nursing expertise, advocacy, empathy, and knowledge. After five months, students were more life-oriented, while caring, nursing expertise, advocacy, and empathy decreased. Selecting nursing as a first-choice programme and aiming for a nursing career influenced students' orientation and attitudes towards nursing positively. Being aware of students' orientation and attitudes towards nursing can help nursing educators in recruitment and retention strategies.

1. Introduction

Reduced recruitment and retention of nursing students currently contributes to the expected nursing shortages worldwide (Robson and Robson, 2016; Sabanciogullari and Dogan, 2015). Although the exact incidence is unknown due to a lack of data, shortages in healthcare personnel are also expected in the Netherlands, chiefly registered nurses (Capaciteitsorgaan, 2016). Increasing the attractiveness of nursing education and working in health care is needed to counteract future shortages (Price, 2009a; Van der Velden et al., 2011). In the Netherlands nurse education programmes are at level 4 intermediate vocational training (in Dutch: MBO-V) and level 6 Bachelor's degree (in Dutch: HBO-V) of the European Qualifications Framework (EQF) (Cedefop, [no date]). Today, both MBO-V and HBO-V nurses are registered in the Healthcare Professionals Act (BIG Act) (CIBG, [no date]). The difference between both nursing levels is the level of training they perceive during their educational programme. In this, MBO-V students are educated to work in different settings of healthcare, usually in predictable care situations based on standardized guidelines and protocols, whereas HBO-V students are educated to work in unpredictable contexts and care situations. However, in daily practice differences in their nursing profile and nursing activities is indistinguishable. The lack of difference in clinical practice between both education levels, together with an increasing demand for care and decreasing number of nurses, has led to an ongoing debate regarding a revision of competencies and responsibilities, which will correspond to each level separately (Mistiaen et al., 2011; Schuurmans, 2012; Van der Velden et al., 2011). The ability to differentiate nursing levels in clinical practice is expected to contribute adequately to the demand and complexity of care and to address the upcoming nursing shortages (Schuurmans, 2012; Terpstra et al., 2015). This implies that future HBO-V and MBO-V nurses may fulfil different roles in nursing healthcare than nurses currently do: with the academic demands and the degree of predictability in care situations determining the level of nursing (Van der Velden

* Corresponding author.
E-mail addresses: charina.boogaard@nhl.nl (T.C. van den Boogaard), p.f.roodbol@umcg.nl (P.F. Roodbol), I.E.Uitewaal@umcutrecht.nl (I.E. Poslawsky), y.ten.hoeve@umcg.nl (Y. ten Hoeve).

https://doi.org/10.1016/j.nepr.2019.04.007
Received 18 May 2017; Received in revised form 4 November 2018; Accepted 13 April 2019

et al., 2011). Nursing students' career choices and expectations of nursing must be explored so that their perspectives about their future professional roles in the nursing work field can be taken into account. Thereby, acknowledgement of students' motivation for nursing may improve future recruitment and retention. This study focusses on level 4 intermediate vocational trained students (MBO-V).

The way students are oriented towards their future professions is an important aspect of career choice. Orientation is defined as 'a person's basic beliefs or feelings in relation to a particular subject or issue' (Oxford Dictionaries, 2016). Ryan and Deci (2000) have stated that a person's orientation is of paramount importance as it is related to attitudes which ultimately lead to action. This suggests that orientation and attitude predominantly shape a person's career choice. Attitudes towards nursing is theoretically defined as 'the view that persons hold regarding the roles, values, and professional activities of nurses, and the responsibilities nurses have towards society' (Toth et al., 1998, p.274).

The decision to choose nursing as a career is often based on personal reasons and life situation, and includes a willingness to care for others (Halperin and Mashiach-Eizenberg, 2014; Jirwe and Rudman, 2012; ten Hoeve et al., 2016), an interest in health (Halperin and Mashiach-Eizenberg, 2014; Jirwe and Rudman, 2012), professional development (Halperin and Mashiach-Eizenberg, 2014; ten Hoeve et al., 2016; Vanhanen et al., 1999), employability (Jirwe and Rudman, 2012; ten Hoeve et al., 2016; Vanhanen et al., 1999), and family life situation (Grainger and Bolan, 2006; Vanhanen et al., 1999). First-year students are mostly care-oriented and view nursing as an occupation where the focus is on benevolence, for example being compassionate, taking care of others, and making a difference in people's lives, instead of on developing knowledge and skills (Grainger and Bolan, 2006; Jirwe and Rudman, 2012; Phillips et al., 2015). Furthermore, first-year students' perception of nursing roles is often based on superficial knowledge (Jirwe and Rudman, 2012; Vanhanen et al., 1999). The factors mentioned reveal students' orientation and attitudes (OAs) towards nursing, and it can be argued that first-year students have a more idealistic than realistic view of nursing. Previous findings have proven that students' OAs are influenced by interactions with nursing before their training (Price, 2009b), but are also influenced through nursing education itself (Vanhanen and Janhonen, 2000a). Idealistic views change particularly during nursing education, resulting in incongruent expectations (Bolan and Grainger, 2009; Price, 2009b). These mismatched views eventually contribute to higher attrition rates (Last and Fulbrook, 2003; O'Donnell, 2011). In contrast, demographic characteristics such as gender, preliminary education, previous nursing/caring experience, having nursing as a first-choice programme, and an ambition for a career in nursing have been found to influence OAs more positively towards nursing in Bachelor's students (ten Hoeve et al., 2016).

A recently published study investigated OAs in HBO-V students in the Netherlands (ten Hoeve et al., 2016). However, over 60% of nursing students in the Netherlands undergo MBO-V training (CBS, 2016) and their OAs are unknown. Because of the changing roles and competencies in nursing, the current study is needed to explore whether MBO-V students' OAs are realistic and meet these changes. Unrealistic views before education may contribute to reduced recruitment. Moreover, experiencing unmet expectations during training might increase attrition rates. Therefore, it is important to also explore MBO-V students' OAs before and during training and possible demographic characteristics which influence career choice. This could help nursing educators address expectations in theory and practice and guide future recruitment and retention strategies for this group of students.

2. Objectives

The aim of this study was threefold: to examine the orientation and attitudes of level four MBO-V students towards their future profession at the beginning of their training (1), whether the orientation and attitudes had changed after five months of nursing education (2), and to explore associations between students' demographic characteristics and positive orientation and attitudes (3).

3. Methods

3.1. Study design and sample

A descriptive pretest-posttest survey was conducted between September 2015 and February 2016. The study population consisted of level four MBO-V students starting in the first year of their full-time four-year training programme at regional training centres (ROCs) in the Netherlands. Students were excluded if they had already undergone MBO-V training before the pretest, as this could have affected their responses. Ten ROCs in the northern and central Netherlands region were approached.

3.2. Instruments

Students completed a three-part questionnaire consisting of the Nursing Orientation Tool (NOT) which is a widely-used self-report instrument developed by Vanhanen et al. (1999), a reduced version of the Nursing Attitude Questionnaire (NAQ) (ten Hoeve et al., 2016), and demographic characteristics. The reduced version of the NAQ is based on the original 30-item questionnaire developed by Toth et al. (1998) which is one of the earliest instrument measuring attitudes towards nursing. We used the translated version of the NOT and the NAQ which was used in the study by ten Hoeve et al. (2016). In this study a forwards-backwards translation was performed for both questionnaires to ensure that the questionnaires were conceptually equivalent and applicable in the Dutch context.

3.3. The Nursing Orientation Tool (NOT)

The NOT measures students' orientation towards nursing by three subscales: caring (six items), nursing expertise (six items), and life orientation (five items) using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The caring orientation reflects students' meaningful experiences with caring/nursing. The nursing expertise orientation reflects students' meaningful experiences of being a nursing professional. The life orientation is based on the balance between study and family life situation. The validity and reliability of the tool were tested in previous research (Janhonen et al., 2000; Vanhanen and Janhonen, 2000b).

3.4. The Nursing Attitude Questionnaire (NAQ), reduced version

The reduced NAQ measures students' attitudes towards nursing by two subscales: nursing agency (14 items) and advocacy and empathy (4 items) using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Nursing agency involves the interrelation between acquiring nursing knowledge and its use in nursing practice (Orem, 2001). Advocacy and empathy corresponds to how nurses speak out and stand up for patients' needs (Hanks, 2008). The validity and reliability of the tool were tested in previous research (ten Hoeve et al., 2016).

3.5. Demographic characteristics

Demographic characteristics consisted of gender, age, living status, preliminary education, nursing as a first-choice programme, nursing/caring experiences, nursing career ambition, (previous) problems with the study programme, and students' consideration of withdrawal after five months of MBO-V training.

3.6. Data collection

The questionnaires were distributed and collected by the researchers (YtH and CvdB) or by nursing teachers during a scheduled lesson in September 2015 (pretest) and in January/February 2016 (posttest). Corresponding student numbers were collected to match the results of the pretest and posttest.

3.7. Data analysis

The total percentage of missing values in the dataset was 0.4% and <1.3% per variable. Therefore, available-case analysis (pairwise deletion) was performed. Individual questionnaires with >10% of missing values were excluded from analyses, as this may bias the results (Bennett, 2001).

Descriptive statistics using amounts and percentages for categorical/ordinal variables and means with standard deviation for continuous variables were used to express students' demographic characteristics and the results of the NOT and NAQ. Because of the homogeneous study population, the following continuous and categorical variables were dichotomized for further analysis: age: ≤17, ≥18; living status: with parent(s), independently; and previous vocational and non-vocational education. Using the Kolmogorov Smirnov test, we assessed the normality of the data for the whole NOT and NAQ and for each subscale. The data was found to be positively skewed. We therefore performed non-parametric tests using the median scores and interquartile ranges (Pallant, 2013).

The Wilcoxon signed-rank test was conducted to test whether students' OAs changed over time. This test was performed on the data for the whole NOT and NAQ and for each subscale, consecutively. If the OAs changed significantly (p-value <.05), the Wilcoxon signed-rank test was performed to determine which individual NOT and NAQ items differed significantly between the pretest and posttest.

The Mann-Whitney *U* test was performed to analyse comparisons between groups for the dependent variable, the NOT, the NAQ and each subscale. The categories for group analysis were gender, age (≤17/≥18), living status (with parents/independently), prior education (vocational/non-vocational), nursing as a first-choice programme (yes/no), nursing/caring experience (yes/no), and nursing career ambition (yes/no). In addition, univariate linear regression analyses were performed to test which of these demographic characteristics significantly influence positive OAs (p-value <.05). Where there were two or more independent variables which influenced positive OAs, a multivariate regression analysis using the backward stepwise selection was performed. For the regression analyses, the whole NOT and NAQ and each subscale were separately used as a dependent variable. The assumptions of linearity, normality, homoscedasticity, and multicollinearity of the regression analyses were checked to ensure no violations.

All the tests were two-sided, with a significance level of $p < .05$ by using IBM SPSS version 21.

Ethical approval

According to the Medical Research Involving Human Subjects Act, no approval was required from an ethical committee; students were not subject to procedures or were required to follow rules or behaviour and the questionnaires were short and did not ask sensitive questions that affect psychological integrity. First-year MBO-V students are usually minors (16–17 years). In the Netherlands, study participants aged 16 and over can decide independently to participate in research, without informed consent from parents. Ethical approval was granted by the deans and faculty boards of the ROCs. In the covering letter, students were informed about the confidentially and purpose of the study. Before the distribution of the questionnaires in the classroom, students were orally informed by the researchers (YtH and CvdB) or by nursing teachers about the content of the study and that participation was voluntary. Students were told that they could leave the questionnaire blank if they wish not to participate. Students were also assured in the cover letter and during the oral information that their data would be treated anonymously. Students gave consent by completing the questionnaires.

4. Results

Nine ROCs granted permission for this study. Of the 513 students included, 457 students completed the pretest and 422 the posttest, 89.1% and 82.3% respectively. Of these students, 362 completed both the pretest and posttest. Three students at the pretest and two at the posttest returned NOT and NAQ questionnaires with more than 10% missing values, and were therefore excluded from the analysis. The intercorrelations among the items were reasonable with a Cronbach's alpha of .74.

4.1. Demographic characteristics

The largest group were females (>86%). The students' ages ranged from 15 to 30 years. At the posttest, 5.1% (n = 23) of students had withdrawn from the study programme and another 10.5% (n = 44) had considered withdrawal. All the students' characteristics are presented in Table 1.

4.2. Orientation towards nursing

At the pretest, nursing expertise was the most dominant orientation in this group of students, mean score 4.08, and they agreed most with items which reflected their career opportunities and derived professional competencies. Students were also positively oriented towards caring, mean score 3.89, and agreed most with items which reflected their inner drive to take care of others. Students agreed less with items related to their life orientation scale, mean score 2.07. Their overall scores on the NOT at the pretest and the items which changed significantly at the posttest are shown in Table 2. The differences in the mean scores for individual items revealed that after five months of training, students scored significantly lower on items related to the caring orientation, which reflected their intrinsic motivation to become a nurse, namely that nursing is a calling (p = .022), that it is important for themselves to study nursing (p = .002) and that being a nurse gives life a meaningful content (p = .005). The same applies to the expertise

Table 1
Demographic characteristics.

	Pretest (n = 454)	Posttest (n = 420)
Gender % (n)		
Male	13.2 (60)	12.6 (52)
Female	86.6 (393)	87.3 (365)
Age, mean (SD)	17.0 (2,1)	17.4 (2.1)
15–17 years % (n)	76.0 (345)	69.1 (289)
≥18 years % (n)	23.6 (107)	30.9 (129)
Living with parent(s) % (n)	91.6 (416)	91.6 (383)
Preliminary education % (n)		
Vocational	85.9 (390)	
Non-vocational	14.1 (64)	
(previous) Problems with programme % (n)	45.8 (208)	66.5 (278)
Study related problems	39.9 (181)	29.2 (122)
Personal problems	13.0 (59)	10.3 (43)
Study and personal problems	7.5 (34)	6.0 (25)
Nursing/caring experience *% (n)*	50.2 (228)	48.1 (201)
Nursing as first-choice programme *% (n)*	83.9 (381)	
Career ambition % (n)		
Nursing career	92.3 (419)	84.2 (352)
Other career	5.5 (25)	12.7 (53)

Abbreviations: SD: standard deviation.

Table 2
Participants' responses and mean scores for 'caring orientation', 'nursing expertise' and 'life orientation' at the pretest (n = 454) and mean scores at the posttest (n = 362).

	SA	A	U	D	SD	Mean (SD)[a] pretest	Mean (SD)[a] posttest
	%	%	%	%	%		
Caring orientation scale						3.89 (0.47)	3.82 (0.50)
1) I've dreamt of becoming a nurse since I was a child	15.6	21.1	**25.1**	22.2	15.6	2.99 (1.30)	2.97 (1.32)
2) Nursing is a calling	9.9	**47.6**	34.1	6.2	1.1	3.60 (0.80)	3.48 (0.89)*
3) A nurse must have a powerful need to take care for others	**54.6**	43.6	1.1	–	–	4.54 (0.52)	4.51 (0.54)
4) It is important to me that I get to study nursing	35.2	**52.2**	10.8	1.3	–	4.22 (0.69)	4.09 (0.66)**
5) Working as a nurse gives my life a meaningful content	20.3	**50.9**	24.9	3.1	0.4	3.88 (0.78)	3.75 (0.74)**
6) I expect as a nurse I have an opportunity to develop as a person	28.6	**58.4**	12.1	0.4	0.2	4.15 (0.65)	4.12 (0.63)
Nursing expertise orientation scale						4.08 (0.40)	4.02 (0.40)
1) I chose nursing because of the variety of jobs available	34.1	**47.6**	12.8	4.2	1.1	4.10 (0.85)	4.06 (0.88)
2) I am confident I will become a good nurse	30.8	**56.8**	11.2	0.4	0.2	4.18 (0.65)	4.15 (0.63)
3) One of the most important qualities of a nurse is mental strength	24.0	**58.1**	16.7	0.4	–	4.06 (0.65)	3.98 (0.58)
4) In nursing I can choose my working field according to my personal interests	33.7	**55.3**	10.1	0.9	–	4.22 (0.65)	4.16 (0.64)
5) I expect this training to give me a possibility to progress in my career	32.8	**56.4**	9.5	0.4	–	4.23 (0.63)	4.14 (0.67)**
6) In nursing I can learn to understand myself and others better than in some other professions	17.2	**44.3**	30.6	7.0	0.4	3.71 (0.85)	3.61 (0.76)**
Life orientation scale						2.07 (0.54)	2.17 (0.52)
1) I would not have started studying nursing here if it had meant moving away from my family	4.4	9.3	**37.4**	31.7	16.7	2.53 (1.02)	2.84 (1.02)***
2) I would have applied to study here earlier but it was not possible because of where my family was living	0.4	0.9	13.9	13.2	**70.9**	1.46 (0.80)	1.45 (0.77)
3) My study is dependent on the financial situation in my family	2.0	10.1	21.1	16.1	**50.0**	1.97 (1.14)	2.09 (1.17)
4) I applied to study nursing because I was unemployed/going to be unemployed	0.4	1.3	5.1	7.0	**85.9**	1.23 (0.64)	1.24 (0.61)
5) I do not want to make decisions in my life that would risk my family being together	16.1	20.3	**37.9**	10.6	15.2	3.11 (1.25)	3.23 (1.12)

Abbreviations: SA = Strongly Agree (5); A = Agree (4); U = Uncertain (3); D = Disagree (2); SD = Strongly Disagree (1).
Highest scores are presented in bold.
* Wilcoxon signed-rank test: mean rank significantly lower at posttest, $p = <.05$.
** Wilcoxon signed-rank test: mean rank significantly lower at posttest, $p = <.01$.
*** Wilcoxon signed-rank test: mean rank significantly higher at posttest, $p = <.001$.
[a] Mean total score (±standard deviation) - (range 1.0–5.0).

scale for items which reflected professional (p = .003) and personal (p = .008) development. Regarding life orientation, at the posttest, students scored higher on items related to the necessity of having a balance between studying nursing and being with family (p = .000).

4.3. The influence of demographic characteristics on a positive orientation towards nursing

Table 3 shows the comparison of scores between groups of students for the whole NOT and the caring-, nursing expertise- and life orientation scale by their characteristics. Students who reported nursing as their first-choice programme and students who had an ambition for a career in nursing scored significantly more positively on the whole NOT questionnaire (respectively, p = .039 and p = .018) and felt more positively about the caring orientation (respectively, p = .000 and p = .008) than students who did not report nursing as their first-choice programme or who would have preferred a different career. For these students, the median scores were higher for the whole NOT questionnaire and for the items related to the caring orientation scale. Other demographic characteristics were not significantly related to students' orientation towards nursing or the subscales.

Univariate linear regression analyses showed that choosing nursing as a first-choice programme and having an ambition for a career in nursing influenced the overall orientation towards nursing and the orientation towards caring. Both variables were therefore entered into the multivariate regressions using backward stepwise selection. First, a multivariate regression showed that choosing nursing as a first-choice programme (β = 0.10, p = .045) and having an ambition for a career in nursing (β = 0.12, p = .011) influenced a more positive overall orientation towards nursing ($F_{(2,\ 440)} = 5.74$, p = .003, $R^2 = 0.03$, $R^2_{Adjusted} = 0.02$). Second, a multivariate linear regression showed that choosing nursing as a first-choice programme (β = 0.17, p = .000) and having an ambition for a career in nursing (β = 0.10, p = .026) contributed to having a more positive orientation towards caring ($F_{(2,\ 440)} = 10.10$, p = .000, $R^2 = 0.04$, $R^2_{Adjusted} = 0.04$).

4.4. Attitude towards nursing

At the pretest, students agreed most with the items on the advocacy and empathy subscale, mean score 4.20, and were positive about the fact that nurses are patients' advocates and value time at the bedside. Regarding nursing agency, mean score 3.76, this group of students saw nursing as an independent practice of equal importance to the service provided by physicians, but also that nurses improve patient care by contributing to the development of policies and the use of evidence-based practice. Their overall scores on the NAQ at the pretest and the items which changed significantly at the posttest are shown in Table 4. The differences in scores on individual items revealed that after five months of training, students (n = 362) were significantly less positive about the fact that nurses are kind and compassionate (p = .001) and value time at the bedside taking care of patients (p = .007).

4.5. The influence of demographic characteristics on a positive attitude towards nursing

Table 5 shows the comparison of scores between groups of students for the whole NAQ and the nursing agency- and advocacy and empathy scale by their characteristics. Students who did not report nursing as their first-choice programme were significantly more positive about nursing agency (p = .014) than students who had nursing as their first-choice programme. The median scores of these students were higher on items related to nursing agency. Other demographic characteristics

Table 3
Comparison of students' demographic characteristics and scores on orientation towards nursing at the pretest (n = 454).

Variable	NOT			Caring orientation			Nursing expertise			Life orientation		
	Median (IQR)[a]	z	p[b]	Median (IQR)[a]	z	p[b]	Median (IQR)[a]	z	p[b]	Median (IQR)[a]	z	p[b]
Gender		−1.35	.892		−.793	.428		−.704	.481		−.442	.658
Female	3.41 (3.24–3.60)			3.83 (3.63–4.17)			4.00 (3.83–4.33)			2.00 (1.80–2.40)		
Male	3.41 (3.18–3.65)			3.83 (3.50–4.17)			4.17 (3.83–4.50)			2.20 (1.60–2.60)		
Age		−.192	.848		−.175	.861		−1.01	.311		−.008	.994
≤17	3.41 (3.24–3.59)			3.83 (3.67–4.17)			4.00 (3.83–4.33)			2.00 (1.80–2.40)		
≥18	3.41 (3.18–3.65)			3.83 (3.50–4.33)			4.17 (3.83–4.50)			2.00 (1.60–2.50)		
Living status		−.418	.676		−.641	.522		−.767	.443		−.912	.362
living at home	3.41 (3.24–3.64)			3.83 (3.67–4.17)			4.00 (3.83–4.33)			2.00 (1.80–2.40)		
living independent	3.41 (3.11–3.65)			3.83 (3.50–4.25)			4.17 (3.83–4.33)			2.20 (1.40–2.50)		
Preliminary education		−1.12	.263		−.695	.487		−.134	.893		−.748	.454
Vocational	3.41 (3.24–3.65)			3.83 (3.67–4.17)			4.00 (3.83–4.33)			2.00 (1.80–2.40)		
non-vocational	3.35 (3.19–3.59)			3.83 (3.50–4.17)			4.00 (3.83–4.33)			2.00 (1.60–2.60)		
Nursing experience		−1.34	.179		−1.31	.192		−.761	.447		−.534	.593
Yes	3.41 (3.24–3.65)			3.83 (3.67–4.33)			4.00 (3.83–4.33)			2.00 (1.80–2.40)		
No	3.41 (3.24–3.59)			3.83 (3.52–4.17)			4.00 (3.83–4.33)			2.00 (1.80–2.40)		
Nursing as first-choice		−2.06	.039*		−3.97	.000***		−.068	.946		−.204	.839
Yes	3.41 (3.24–3.65)			3.83 (3.67–4.33)			4.00 (3.83–4.33)			2.00 (1.80–2.40)		
No	3.35 (3.14–3.53)			3.67 (3.38–4.00)			4.08 (3.83–4.33)			2.20 (1.45–2.60)		
Nursing career choice		−2.37	.018*		−2.64	.008**		−1.82	.070		−.869	.385
Nursing career	3.41 (3.24–3.65)			3.83 (3.67–4.17)			4.17 (3.67–4.33)			2.00 (1.80–2.40)		
Other career	3.29 (3.03–3.44)			3.67 (3.50–3.83)			3.83 (3.67–4.33)			2.00 (1.60–2.40)		

Abbreviations: NOT: Nursing Orientation Tool; IQR: interquartile range.
* p-Value significant at 0.05.
** p-Value significant at 0.01.
*** p-Value significant at 0.001.
[a] Range 1.0–5.0.
[b] Mann-Whitney *U* test.

were not significantly related to students' attitude towards nursing or the subscales.

Univariate linear regression analyses showed that only choosing nursing as a first-choice programme influenced the attitude towards nursing agency. These results show that students who did not report nursing as a first-choice programme (β = −0.12, p = .009) contributed to having a more positive attitude towards nursing agency ($F_{(1, 451)}$ = 6.90, 95% CI [-0.182, −0.026], p = .009, R^2 = 0.02, $R^2_{Adjusted}$ = 0.01).

4.6. Changes in students' orientation and attitude towards nursing after five months of training

The changes and comparison of pretest and posttest scores on the

Table 4
Participants' responses and mean scores for 'nursing agency' and 'advocacy and empathy' at the pretest (n = 454) and mean scores at the posttest (n = 362).

	SA	A	U	D	SD	Mean (SD)[a] pretest	Mean (SD)[a] posttest
	%	%	%	%	%		
Nursing agency scale						3.76 (0.31)	3.75 (0.29)
1) Nurses consistently update their practice in relation to current healthcare trends	25.1	**59.9**	12.3	2.2	0.2	4.08 (0.69)	3.99 (0.66)
2) It takes intelligence to be a nurse	9.9	**50.4**	29.1	8.8	1.1	3.60 (0.83)	3.61 (0.79)
3) Nurses should have a baccalaureate degree for entrance into practice	1.5	7.3	**52.0**	21.4	17.2	2.54 (0.91)	2.54 (0.84)
4) Nurses with advanced degrees make important contributions to patient care	6.8	30.8	**51.1**	7.7	3.3	3.30 (0.84)	3.27 (0.76)
5) Nurses are capable of independent practice	42.1	**53.3**	2.6	0.9	0.2	4.37 (0.61)	4.23 (0.69)
6) The service given by nurses is as important as that given by physicians	32.4	**53.1**	11.0	2.9	–	4.16 (0.73)	4.17 (0.69)
7) Research is vital to nursing as a profession	11.5	**49.3**	36.6	2.0	0.2	3.70 (0.70)	3.73 (0.67)
8) Nurses participate in the development of health care policies	23.8	**63.7**	12.1	0.2	–	4.11 (0.60)	4.10 (0.58)
9) Nurses act as resource persons for individuals with health problems	20.5	**58.8**	17.2	2.6	0.4	3.97 (0.72)	3.95 (0.70)
10) Nurses integrate health teaching into their practice	7.0	**47.8**	43.0	1.3	–	3.61 (0.64)	3.68 (0.65)
11) Nurses speak out against inadequate working conditions	9.9	**46.0**	42.1	1.1	0.2	3.65 (0.68)	3.68 (0.65)
12) Nurses follow the physician's orders without questions	1.8	13.0	30.2	**41.0**	13.4	3.52 (0.94)	3.55 (0.93)
13) Nurses incorporate research findings into their clinical practice	14.3	**61.8**	23.6	0.7	0.2	3.89 (0.64)	3.96 (0.61)
14) The major goal of nursing research is to improve patient care	27.5	**58.1**	12.3	1.3	0.2	4.12 (0.68)	4.07 (0.67)
Advocacy and empathy scale						4.20 (0.44)	4.15 (0,41)
1) Nurses are patient's advocates	26.0	**61.0**	12.3	0.7	–	4.12 (0.63)	4.12 (0.60)
2) Nurses protect patients in the health care system	33.9	**59.5**	6.6	–	–	4.27 (0.58)	4.24 (0.61)
3) Nurses in general are kind, compassionate human beings	31.1	**54.8**	10.1	2.9	0.2	4.15 (0.73)	4.06 (0.68)*
4) Nurses value time at the bedside caring for patients.	33.0	**59.5**	6.8	0.4	–	4.25 (0.60)	4.17 (0.56)*

Abbreviations: SA = Strongly Agree (5); A = Agree (4); U = Uncertain (3); D = Disagree (2); SD = Strongly Disagree (1).
Note: Highest scores are presented in bold.
* Wilcoxon signed-rank test: mean rank significantly lower at posttest, $p = <.01$.
[a] Mean total score (±standard deviation) - (range 1.0–5.0).

Table 5
Comparison of students' demographic characteristics and scores on attitude towards nursing at the pretest (n = 454).

Variable	NAQ			Nursing agency			Advocacy and empathy		
	Median (IQR)[a]	z	p[b]	Median (IQR)[a]	z	p[b]	Median (IQR)[a]	z	p[b]
Gender		−.118	.906		−.212	.832		−.123	.902
Female	3.83 (3.67–4.00)			3.71 (3.57–3.93)			4.25 (4.00–4.50)		
Male	3.86 (3.62–4.06)			3.71 (3.51–3.98)			4.24 (4.00–4.50)		
Age		−.325	.745		−.603	.546		−.600	.549
≤17	3.83 (3.61–4.03)			3.71 (3.57–3.93)			4.25 (4.00–4.50)		
≥18	3.89 (3.67–4.06)			3.78 (3.57–3.93)			4.00 (4.00–4.50)		
Living status		−.887	.375		−.888	.375		−.465	.642
living at home	3.83 (3.61–4.06)			3.71 (3.57–3.93)			4.25 (4.00–4.50)		
living independent	3.88 (3.67–3.97)			3.76 (3.61–3.93)			4.00 (4.00–4.63)		
Preliminary education		−.146	.884		−.436	.663		−.540	.589
Vocational	3.83 (3.62–4.00)			3.71 (3.57–3.93)			4.25 (4.00–4.50)		
non-vocational	3.80 (3.67–4.06)			3.75 (3.57–4.00)			4.00 (3.81–4.50)		
Nursing experience		−.312	.755		−.518	.604		−.019	.985
Yes	3.83 (3.67–4.06)			3.71 (3.57–3.93)			4.25 (4.00–4.50)		
No	3.83 (3.61–4.00)			3.71 (3.55–3.93)			4.25 (4.00–4.50)		
Nursing as first-choice		−1.94	.053		−2.46	.014*		−.066	.947
Yes	3.83 (3.61–4.00)			3.71 (3.54–3.93)			4.25 (4.00–4.50)		
No	3.91 (3.72–4.10)			3.85 (3.57–4.07)			4.25 (4.00–4.50)		
Nursing career choice		−.451	.652		−.022	.983		−1.54	.124
Nursing career	3.83 (3.67–4.06)			3.71 (3.57–3.93)			4.25 (4.00–4.50)		
Other career	3.88 (3.54–4.06)			3.71 (3.50–4.00)			4.00 (3.75–4.50)		

Abbreviations: NAQ: Nursing Attitude Questionnaire; IQR: interquartile range.
* p-Value significant at 0.05.
[a] Range 1.0 - 5.0.
[b] Mann-Whitney U-test.

Table 6
Comparison of the median scores on orientation and attitude towards nursing between the pretest and posttest (n = 362).

Variable	Pretest	Posttest	z	p[b]
	Median (IQR)[a]	Median (IQR)[a]		
NOT	3.41 (3.24–3.65)	3.41 (3.24–3.59)	−1.70	.089
Caring orientation	3.83 (3.65–4.17)	3.83 (3.50–4.17)	−3.57	.000**
Nursing expertise	4.08 (3.83–4.33)	4.00 (3.83–4.33)	−3.16	.002*
Life orientation	2.00 (1.80–2.40)	2.20 (1.80–2.60)	−2.98	.003*
NAQ	3.83 (3.67–4.06)	3.83 (3.67–4.00)	−1.76	.079
Nursing agency	3.71 (3.57–4.00)	3.71 (3.57–3.93)	−.854	.398
Advocacy & empathy	4.25 (4.00–4.50)	4.00 (4.00–4.50)	−3.16	.002*

Abbreviations: NOT: Nursing Orientation Tool; NAQ: Nursing Attitude Questionnaire; IQR: interquartile range.
* p-Value significant at 0.01.
** p-Value significant at 0.001.
[a] Range 1.0–5.0.
[b] Wilcoxon signed-rank test.

NOT and its subscales and the NAQ and its subscales are shown in Table 6. With regard the to NOT, the results show that after five months of training there was no significant change in the overall orientation towards nursing ($p = .089$). On the subscales of the NOT, however, most students reported a significantly less positive orientation towards caring ($p = .000$) and nursing expertise ($p = .002$), and a higher life orientation ($p = .003$).

With regard to the NAQ and its subscales, the results show that the overall attitude towards nursing did not differ significantly between pretest and posttest ($p = .079$). With respect to the subscales, students were significantly less positive regarding advocacy and empathy ($p = .002$), while nursing agency did not reveal a significant change after five months of training ($p = .398$).

5. Discussion

The first aim of this study was to identify the OAs of MBO-V students at the start of their training. The results show that first-year MBO-V students are positive towards nursing expertise, caring, advocacy and empathy, and nursing agency. In this, the need to take care of others, working at the bedside, having career opportunities, and improving patient care by contributing to the development of policies and the use of evidence-based practice are important items for first-year MBO-V students. They also agree on nursing being as important as the work of physicians. These results are similar to other studies which investigated OAs among Bachelor's students (Bolan and Grainger, 2009; Grainger and Bolan, 2006; ten Hoeve et al., 2016). However, the finding that first-year MBO-V students are mostly oriented to nursing expertise is inconsistent with the results described in previous studies, which found that first-year Bachelor's students are more life-oriented towards nursing (Bolan and Grainger, 2009; Grainger and Bolan, 2006; Vanhanen and Janhonen, 2000a). However, these studies also revealed that nursing expertise becomes more dominant in the course of a nursing education programme. This indicates that first-year MBO-V students are well prepared for the professional competencies acquired in nursing. In the Netherlands, most MBO-V students follow a 'health and welfare' course during their preliminary vocational training at the secondary level, with the aim of preparing themselves to work in social services or health care. This indicates the importance of students' previous education in influencing their career choices.

The second aim of this study concerns how the OAs of MBO-V students evolve over time. After the first five months of training, students scored higher on the items related to life orientation (finding a balance between studies and personal life) and scored lower on items related to caring and nursing expertise. For example, students held less strong views on the importance of professional development in nursing, the inner drive to take care of others, and being compassionate as nurses. This suggests that MBO-V students' expectations of the nursing profession are incongruent with what they perceive during their training. It also suggests that there is a mismatch between their prior knowledge about nursing and its reality. Changing perceptions of nursing cannot be separated from expectations, because first-year students' perception of nursing roles are often based on superficial knowledge (Jirwe and Rudman, 2012; Vanhanen et al., 1999). Especially with regard to the

caring concept, which can be considered a highly important reason for students to choose a career in nursing (Cook et al., 2003; Halperin and Mashiach-Eizenberg, 2014), there is often a mismatch. This misconception was also noticed by ten Hoeve et al. (2014) who found a discrepancy in the interpretation of the concept of caring before and during nursing education. The students in this study did not undergo clinical placements during the first five months, which could explain the unmet expectations related to caring. Previous studies have shown that students perceive more stress and demotivation and are more likely to withdraw from their training when confronted with experiences which do not match their views (Bolan and Grainger, 2009; O'Donnell, 2011; Price, 2009b). These results are important for nursing educators to tailor future retention policies.

The transition from secondary to vocational education can be challenging for students. Larose et al. (2005) have discussed that students not only have to adapt to the new social environment, but it is also expected of students to show more responsibility for their academic progress and personal life. The increasing life orientation found in this study could arise from the struggle students experience managing their studies and personal lives. The study of Last and Fulbrook (2003) supports the perceived challenges which students experience when confronted with new educational demands and simultaneously balancing their social lives.

The third aim of this study was to explore the relationship between OAs and students' demographic characteristics. In line with previous studies (Salamonson et al., 2014; ten Hoeve et al., 2016; Vanhanen and Janhonen, 2000b), it was not unexpected to find that selecting nursing as first-choice programme and aiming for a career in nursing influence a more positive orientation to nursing, in particular with respect to caring, than students who did not report nursing as their first-choice programme or who desired another career. This is also consistent with other studies which found that students' main motivation for becoming nurses stemmed from the desire to care for others and altruistic beliefs (Crick et al., 2014; Phillips et al., 2015; Safadi et al., 2011). Moreover, such autonomous motives for becoming a nurse have been found to influence students' career choices and educational outcomes (Jirwe and Rudman, 2012). For example, Salamonson et al. (2014) have demonstrated that students who selected nursing as their first-choice programme were more likely to complete the programme than students who did not.

Interestingly, this study found that not having nursing as a first-choice programme influenced a positive attitude towards nursing agency. It could be argued that these students are more focused on developing competencies related to improving patients' outcomes rather than caring for patients. This statement is supported by Miers et al. (2007, p.1196) who found that *'service orientation'* is a motivator for choosing nursing as a career and that wanting to take care of others is not the only interest of students who choose nursing. Students might choose nursing for various reasons not identified in this study.

5.1. Strengths and limitations

This study is one of the first studies investigating OAs among MBO-V students and included students from the northern and central Netherlands region, which enhances its generalizability in the Dutch context. A limitation of the study is that the explained variance in the influencing characteristics for positive OAs is low. Nonetheless, the revealed significant influencing characteristics indicate the importance of the association with students' OAs.

6. Conclusions

MBO-V students at the start of their training feel positively towards the nursing expertise, caring, advocacy and empathy, and nursing agency aspects of the profession. Students agree the most with items which reflect personal and professional development and the use of knowledge in nursing practice. After five months, students are more life oriented, while the orientation towards nursing expertise, caring, and the attitude towards advocacy and empathy decreased. These changing perceptions may be predictive of withdrawal from or retention in the training programme. When expectations are not met, this may lead to disappointments and even attrition. Therefore, acknowledgement of students' OAs and demographic characteristics before and during training can give nursing educators insight into students' expectations, to address their needs and to improve retention.

6.1. Recommendations

The results challenge nurse educators to be aware themselves and make students aware of their OAs towards nursing before and during training. Addressing students' expectations and developing a realistic image of nursing could contribute to an informed and deliberate career choice for students during recruitment and selection processes. The results, especially the changing OAs, also specify how to tailor the content of the study programme to align with MBO-V student expectations which support retention. In addition to supervision training, it is recommended that students undergo clinical placements under proper guidance during the first semester with the focus on caring for people.

In the time available, we collected data during the first five months of training. A longitudinal study is recommended to follow students until the end of their programme to determine whether their OAs change throughout the programme. A mixed-methods design should be considered to investigate different reasons for nursing career choices and retention in relation to OAs and demographic characteristics, and to gain an understanding of the factors associated with attrition.

Conflicts of interest

None.

Funding sources

No external funding was received.

Ethical approval details

Not applicable.

Acknowledgements

The authors thank the students, deans and faculty boards at Alfa College, Drenthe College, MBO Utrecht, Menso Alting College, Noorderpoort College, and ROC Friesland College.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.nepr.2019.04.007.

References

Bennett, D.A., 2001. How can I deal with missing data in my study? Aust. N. Z. J. Public Health 25, 464–469.

Bolan, C., Grainger, P., 2009. Students in the BN program–do their perceptions change? Nurse Educ. Today 29, 775–779.

Capaciteitsorgaan, 2016. [online] Available at: http://capaciteitsorgaan.nl/app/uploads/2016/10/2016_10_21-Capaciteitsplan-2016-Deelrapport-8-FZO-DEFINITIEF.pdf Accessed date: 30 October 2016.

CBS, 2016. [online] Available at: http://statline.cbs.nl/Statweb/publication/?VW=T&DM=SLNL&PA=81628NED&D1=75,78,83&D2=9-13&HD=160317-1450&HDR=G1 Accessed date: 22 May 2016.

Cedefop, [No date] European qualification framework. [online] Available at: http://www.cedefop.europa.eu/nl/events-and-projects/projects/european-qualifications-

framework-eqf Accessed date: 12 March2018.
CIBG [No Date]. [online] Available at: https://english.bigregister.nl/registration/procedures/legislation Accessed date: 12 march 2018.
Cook, T.H., Gilmer, M.J., Bess, C.J., 2003. Beginning students' definitions of nursing: an inductive framework of professional identity. J. Nurs. Educ. 42 (7), 311–317.
Crick, P., Perkinton, L., Davies, F., 2014. Why do student nurses want to be nurses? Nurs. Times 110, 12–15.
Grainger, P., Bolan, C., 2006. Perceptions of nursing as a career choice of students in the Baccalaureate nursing program. Nurse Educ. Today 26, 38–44.
Halperin, O., Mashiach-Eizenberg, M., 2014. Becoming a nurse - a study of career choice and professional adaptation among Israeli Jewish and Arab nursing students: a quantitative research study. Nurse Educ. Today 34, 1330–1334.
Hanks, R.G., 2008. The lived experience of nursing advocacy. Nurs. Ethics 15, 468–477.
Janhonen, S., Vanhanen, L., Atwood, J., 2000. Developing and testing a cognitive orientation to nursing measurement tool. Nord. J. Nurs. Res. 20, 22–27.
Jirwe, M., Rudman, A., 2012. Why choose a career in nursing? J. Adv. Nurs. 68, 1615–1623.
Larose, S., Bernier, A., Tarabulsy, G.M., 2005. Attachment state of mind, learning dispositions, and academic performance during the college transition. Dev. Psychol. 41, 281–289.
Last, L., Fulbrook, P., 2003. Why do student nurses leave? Suggestions from a Delphi study. Nurse Educ. Today 23, 449–458.
Miers, M.E., Rickaby, C.E., Pollard, K.C., 2007. Career choices in health care: is nursing a special case? A content analysis of survey data. Int. J. Nurs. Stud. 44, 1196–1209.
Mistiaen, P., Kroezen, M., Triemstra, M., Francke, A.L., 2011. Verpleegkundigen en verzorgenden in internationaal perspectief. Een literatuurstudie naar rollen en posities van beroepsbeoefenaren in de verpleging en verzorging. NIVEL.
O'Donnell, H., 2011. Expectations and voluntary attrition in nursing students. Nurse Educ. Pract. 11, 54–63.
Orem, D.E., 2001. Anonymous Nursing Concepts of Practice, sixth ed. Mosby, St. Louis, pp. 16.
Oxford Dictionaries [online] Available at: http://www.oxforddictionaries.com/definition/english/orientation Accessed date: 22 May 2016.
Pallant, J., 2013. SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS, fifth ed. Open University Press/McGraw-Hill, Maidenhead.
Phillips, J., Cooper, K., Rosser, E., Scammell, J., Heaslip, V., White, S., Donaldson, I., Jack, E., Hemingway, A., Harding, A., 2015. An exploration of the perceptions of caring held by students entering nursing programmes in the United Kingdom: a longitudinal qualitative study phase 1. Nurse Educ. Pract. 15, 403–408.
Price, S., 2009a. Future directions for career choice research in nursing: a discussion paper. Int. J. Nurs. Stud. 46, 268–276.
Price, S.L., 2009b. Becoming a nurse: a meta-study of early professional socialization and career choice in nursing. J. Adv. Nurs. 65, 11–19.
Robson, A., Robson, F., 2016. Investigation of nurses' intention to leave: a study of a sample of UK nurses. J. Health Organ. Manag. 30, 154–173.
Ryan, R.M., Deci, E.L., 2000. Intrinsic and extrinsic motivations: classic definitions and new directions. Contemp. Educ. Psychol. 25, 54–67.
Sabanciogullari, S., Dogan, S., 2015. Effects of the professional identity development programme on the professional identity, job satisfaction and burnout levels of nurses: a pilot study. Int. J. Nurs. Pract. 21, 847–857.
Safadi, R.R., Saleh, M.Y., Nassar, O.S., Amre, H.M., Froelicher, E.S., 2011. Nursing students' perceptions of nursing: a descriptive study of four cohorts. Int. Nurs. Rev. 58, 420–427.
Salamonson, Y., Everett, B., Cooper, M., Lombardo, L., Weaver, R., Davidson, P.M., 2014. Nursing as first choice predicts nursing program completion. Nurse Educ. Today 34, 127–131.
Schuurmans, M.e.a., 2012. V&V 2020 Deel 3 Beroepsprofiel Verpleegkundige. Utrecht.
ten Hoeve, Y., Jansen, G., Roodbol, P., 2014. The nursing profession: public image, self-concept and professional identity. A discussion paper. J. Adv. Nurs. 70, 295–309.
ten Hoeve, Y., Castelein, S., Jansen, W., Jansen, G., Roodbol, P., 2016. Predicting factors of positive orientation and attitudes towards nursing: a quantitative cross-sectional study. Nurse Educ. Today 40, 111–117.
Terpstra, D., Berg, A.v.d., Mierlo, C.v., Zijlstra, H., Landman, J., Schuurmans, M., Kempff, M., 2015. Toekomstbestendige beroepen in de verpleging en verzorging: Rapport stuurgroep over de beroepsprofielen en de overgangsregeling.
Toth, J.C., Dobratz, M.A., Boni, M.S., 1998. Attitude toward nursing of students earning a second degree and traditional baccalaureate students: are they different? Nurs. Outlook 46, 273–278.
Van der Velden, L.F.J., Francke, A.L., Batenburg, R.S., 2011. Vraag- en aanbodontwikkelingen in de verpleging en verzorging in Nederland. Een kennissynthese van bestaande literatuur en gegevensbronnen. NIVEL.
Vanhanen, L., Janhonen, S., 2000a. Changes in students' orientations to nursing during nursing education. Nurse Educ. Today 20, 654–661.
Vanhanen, L., Janhonen, S., 2000b. Factors associated with students' orientations to nursing. J. Adv. Nurs. 31, 1054–1062.
Vanhanen, L., Hentinen, M., Janhonen, S., 1999. Students' orientations to nursing at the beginning of nursing education. Nordic Journal of Nursing Research & Clinical Studies/Vård i Norden 19 (3), 18–23.