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a development and psychometric validation study

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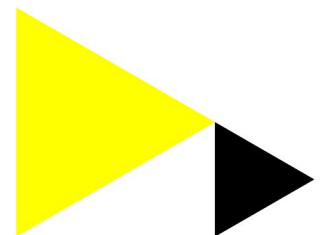
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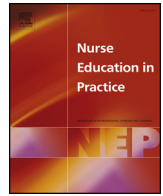
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The Scale on COmmunity care PERceptions (SCOPE) for nursing students: A development and psychometric validation study



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ABSTRACT

The aim of this study was to develop a valid instrument to measure student nurses' perceptions of community care (SCOPE). DeVellis' staged model for instrument development and validation was used. Scale construction of SCOPE was based on existing literature. Evaluation of its psychometric properties included exploratory factor analysis and reliability analysis. After pilot-testing, 1062 bachelor nursing students from six institutions in the Netherlands (response rate 81%) took part in the study. SCOPE is a 35-item scale containing: background variables, 11 measuring the affective component, 5 measuring community care perception as a placement, 17 as a future profession, and 2 on the reasons underlying student preference. Principal axis factoring yielded two factors in the affective component scale reflecting 'enjoyment' and 'utility', two in the placement scale reflecting 'learning possibilities' and 'personal satisfaction', and four in the profession scale: 'professional development', 'collaboration', 'caregiving', and 'complexity and workload'. Cronbach's α of the complete scale was 0.892 and of the subscales 0.862, 0.696, and 0.810 respectively. SCOPE is a psychometrically sound instrument for measuring students' perceptions of community care. By determining these perceptions, it becomes possible to positively influence them with targeted curriculum redesign, eventually contributing to decreasing the workforce shortage in community nursing.

1. Introduction

Healthcare is changing from patient care delivery in an institutional setting to care provided in the patient's own home. Shorter hospital stays have resulted in increasing numbers of care-dependent, often elderly, patients being discharged into the community (Philibin et al., 2010). Further, as prevalence of one or more chronic diseases increases with age, home healthcare delivery based on a single-disease framework is no longer sufficient (WHO, 2011). Combined, the demands associated with this long term complex care delivery to patients at home might pose an enormous challenge for the community care field.

Despite the international shift in healthcare delivery, nursing students have limited interest in a career in community care, causing a discrepancy between healthcare developments and available workforce (Bjørk et al., 2014; Norman, 2015). Traditionally, hospitals are the preferred setting of choice by students which is perceived as an interesting and glamorous, highly technological environment (Kloster et al.,

2007). Community care is seen as less attractive because of its more chronic care profile, where students expect to utilize almost no technical skills, with many untrained workers, and a high workload (Kloster et al., 2007).

Students' perceptions of community care, however, do not adequately reflect the realities of this field with its challenging roles and responsibilities, and thus strategies to increase awareness and understanding of this field are urgently required (Norman, 2015). Placements during education provide experiences in different healthcare areas that help students orient themselves towards a future career. As student nurses' pathways vary, this orientation process is complex and influenced by a broad range of variables (Hickey et al., 2012). Gaining insight on how students' perceptions of community care develop during their education, and the factors that influence this development will help understand the assumptions underlying the field's limited popularity. Educators could then redesign the curriculum based on these insights, positively influencing student willingness to work in

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community care, correcting misunderstandings or unrealistic expectations (Illingworth et al., 2013).

Several recent studies have investigated nursing students' career preferences related to different fields in healthcare (Bolan and Grainger, 2009; Happell and Gaskin, 2012; Kloster et al., 2007; McCann et al., 2010), with special attention to working with older people (Bleijenberg et al., 2012; Haron et al., 2013; Koh, 2012; Liu et al., 2013; Potter et al., 2013; Stevens, 2011). These, primarily, survey studies investigated student perceptions and opinions via self-developed or existing questionnaires. While scales for measuring preference for nursing as a career (Matutina et al., 2010), for mental health (Stevens and Dulhunty, 1992), and for working with older patients (Kogan, 1961; Rosencranz and McNevin, 1969) are available, no scale focussing on student perceptions of community care exists. This is undesirable given the lack of understanding of perceptions of this field, and the importance to positively influence students' willingness to see community nursing as a future profession. It is against this background that the instrument SCOPE (Scale on COMMunity care PERceptions) was designed and tested for validity evidence in this study.

SCOPE contains three subscales, as there is much support that perception, as attitudinal concept, consists of affective and cognitive components (Edwards, 1990). The first subscale measures the affective component of community care as a whole; the other two subscales measure cognitive attitudes of a placement as student, and of a profession as graduate in community care. Based on this, the psychometric evaluation of the instrument starts at the level of these three subscales, followed by an assessment of the consistency of the instrument as a whole. Though the subscales represent different constructs, it is relevant to test whether they correlate and thus influence each other, for example whether a negative perception of community care for a future profession is likely to be positively related to students' perception and willingness for a placement there.

2. Aim

Development, validation and cross-cultural adaptation of an instrument to measure student nurses' perceptions of community care, their preferences for practice placement in an area of healthcare, and the factors that determine these preferences.

3. Methods

3.1. Development of the instrument

Development of the Scale on COMMunity care PERceptions (SCOPE) was based on a staged model for instrument development which included: item generation, content validity testing through expert review, administration to a pilot sample, psychometric testing, and revision (DeVellis, 2012). SCOPE was developed before testing as a scale with 14 background variables, 34 perception items in three subscales, and two final items exploring reasons for a current healthcare field preference. The background variables are: gender, age, level of prior education, religion, country of birth (student and parents), and previous experience with community care in the role of patient, in family- or other relations working in community care, or as a (student) job. The three subscales contain the affective component of perception of: community care (12 items), community care for practice placement (5 items), and community care as a future profession (17 items).

3.2. Construction of scale 1: affective component scale

The Semantic Differential (SeD) technique was used to measure the affective component of community care perception. This is a method for quantifying the meaning attached to certain phenomena or concepts through a series of bipolar adjectives (Osgood et al., 1957). Semantic differential scales are useful for assessing the affective and cognitive

properties of attitudes, as they are psychometrically stable and applicable to multiple objects (Crites et al., 1994). Here, twelve pairs of adjectives derived from the scales 'Me at work' and 'My Job' (Scott, 1967) were used. Items ranged from 1 (negative adjective) to 10 (positive adjective). The items (i.e., pairs) were presented in a randomly reversed order; sometimes the positive adjective was on the left-hand side and sometimes the negative.

3.3. Construction of scales 2 and 3: placement- and profession scales

A systematic literature study was conducted to find articles relating to student nurses' perceptions of community care (Van Iersel et al., 2016). It resulted in the formulation of 22 aspects of community care, mentioned by nursing students as relevant in affecting their valuation for this area of practice. The items (i.e., aspects) were selected by four professors or senior lecturers in nursing with extensive knowledge in community nursing; discrepancies were resolved by consensus. Of the items, five were formulated on the perception of placement in community care, and 17 on the perception of a future profession in community care. Each item consisted of one construct with anchors at each end divided by a 10-point visual scale; the option 'I don't know' was added. The final two items measured current placement preference in six areas of practice (i.e., medical rehabilitation, mental healthcare, care for mentally handicapped, community care, elderly care and the general hospital), and three aspects named in the earlier profession subscale that primarily determined this preference.

3.4. Cross-cultural adaptation of SCOPE

SCOPE was developed for use in the Netherlands, and to be more broadly usable, translation of SCOPE was required. A choice was made here for cross-cultural adaptation as described by Guillemain et al. (1993) who propose five steps to preserve equivalence across cultures, namely: (1) translation, (2) back-translation, (3) committee review, (4) pre-testing, and eventually (5) weighting of scores. As steps (4) and (5) require a completely bilingual sample which was unavailable, the first three steps were undertaken.

In Step 1, two independent bilingual translators, one speaking British English and the other American English as mother tongue, translated the Dutch items into English. To detect divergent interpretations, the translators had different characteristics: one had a background in healthcare and was aware of the objectives underlying the material while the other did not. Back-translation (Step 2) into the source language, again was done independently by two different translators with the same characteristics as those in Step 1. Finally, a multidisciplinary committee consisting of five experts in the field of nursing education, health science and community care was constituted to compare source- and final versions of SCOPE.

4. Validation process

4.1. Ethical considerations

The Ethical Review Board of the Open University of the Netherlands approved the study (reference number U2014/07279/HVM). Students were informed about the research project via their institutions' digital learning environments. They were also informed that, although student ID-numbers were registered, data were processed anonymously and that all information was confidential.

4.2. Content validity

The questionnaire was evaluated for face validity by an interdisciplinary team of ten senior researchers in the fields of education and community nursing; special attention was given to item construction, in order to avoid ambiguity or incomprehensibility (Streiner and Norman,

2008). They critically scrutinized the scales on completeness, and the items in terms of possible misunderstanding and ambiguity.

4.3. Pilot-testing

The scale then was piloted in a group of second year bachelor nursing students at a university not involved in the present study ($n = 57$). Data from the scale were statistically analysed using SPSS 22[®]. The Cronbach's α of the total scale was 0.914; affective component scale = .885, placement scale = .761, profession scale = .809. In a feedback session, students remarked that they experienced no inappropriate questions. The time required to complete the questionnaire was noted, and it was decided that its administration should allow for 10 min. All items were retained. After determining face validity- and pilot-testing, the scale was administered to a larger sample for final testing.

4.4. Population

Nursing students from six Dutch universities of applied sciences in the first semester of their program took part ($n = 1062$). Maximal variation sampling was conducted in selecting the institutions based on differences in influential characteristics (Creswell, 2008) such as urbanisation, religious identity, and geographic distribution. The respondents were 88% female, which is normal for the Dutch population of nursing students ($M_{age} = 18.8$ years, $SD = 2.4$). The survey was administered in class and had a response rate of 81%.

4.5. Statistical analysis

All data of the questionnaires were manually entered by double data entry and then analysed using SPSS 22[®]. The five reverse-scored items in the affective component scale were recoded.

Missing values. Four cases were not properly filled in and were removed. The sample size therefore was $n = 1058$. In the subscales *placement* and *profession*, the cases with the value 'I don't know' required some consideration. On the one hand, removal from the analysis neither influenced the values of factor loadings nor scale reliability, but did result in a relatively large number of missing values. On the other hand, one might argue that the value 'I don't know' also represents an opinion, and therefore cannot be considered a missing value at random (De Vet et al., 2005). For this reason, an appropriate solution is to recode the value 'I don't know' to a value in the middle of the possible range from 1 to 10. The value 6 was chosen above 5 as it was closer to the mean of all items (being 6.72) with the value 'I don't know' being used as a missing value. Thus, to make comparison possible, two different analyses on the subscales *placement* and *profession* were performed and are reported. First, the values 'I don't know' were recoded as a missing value and excluded from the analyses, and in the second step, the analyses were performed with the value 'I don't know' recoded as value 6.

Construct validity. To evaluate whether the questionnaire items could be grouped into clusters representing different dimensions of the underlying constructs, exploratory factor analysis (EFA) by common factor analysis (principal axis factoring [PAF]) with oblique (promax) rotation was performed. EFA, a hypothesis generating technique, is suitable for the evaluation of new scales, when clear-cut ideas about the factor structure are not yet available (De Vet et al., 2005). Common factor analysis, in contrast to component analysis, is used when relationships among variables are unknown (Beavers et al., 2013; Floyd and Widaman, 1999). Oblique rotation allows for correlations between the dimensions, and is therefore more suitable for psychological constructs than orthogonal rotation (Beavers et al., 2013; Field, 2009). For justification of methods and optimal reporting of factor analysis, two (analogous) checklists (De Vet et al., 2005; Floyd and Widaman, 1999), and rules of thumb for interpretation of factor structure from a literature review on EFA (Beavers et al., 2013) were used.

To decide whether an EFA on the first sample was appropriate, the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was calculated, identifying whether factor analysis should yield distinct and reliable factors. The KMO statistic varies between 0 and 1, and a value > 0.70 is considered good (Beavers et al., 2013; Field, 2009). The Bartlett's test of sphericity was used to identify whether the correlations between the variables were overall significantly different, which is the case in a significant result (Beavers et al., 2013; Field, 2009). To evaluate item fit with the scales, item-total correlations were calculated. Given the large sample size, a factor loading of ≥ 0.38 was considered an appropriate cut-off point, and the Kaiser criterion was used to retain components with eigenvalues > 1.0 (Floyd and Widaman, 1999). A condition for factor extraction was that each factor accounted for at least 5% of the variance, which is a requirement to consider a factor to be meaningful (Polit and Beck, 2008), and 50% of the total variance explained by the factors was considered to be acceptable (Beavers et al., 2013). Reliability for each factor was evaluated by calculating Cronbach's α , and correlations between the factors were calculated. PAF, in contrast to other methods for factor analysis, requires no distributional assumptions (Beavers et al., 2013), therefore no calculations on means (SD) were performed.

Total scale and subscales: reliability and correlations. Cronbach's α was calculated to determine the internal consistency of the total scale and each of the three subscales, and Pearson's correlation coefficient r was calculated to assess to what extent the three subscales measured an overarching construct. A correlation between 0.2 and 0.8, and a Cronbach's α value of ≥ 0.70 for each scale was considered as suitable (Field, 2009).

5. Results

5.1. Construct validity affective component scale

Corrected item-total correlations ranged from 0.024 to 0.769. Without the item 'taxing-effortless', the lowest correlation measured was 0.350. The Kaiser-Meyer-Olkin measure $KMO = 0.874$, and Bartlett's test of sphericity $\chi^2(66) = 5522.471$, $p < .001$. PAF with promax rotation of the 12 items resulted in two factors with eigenvalues > 1.0 , which accounted for 56.5% of the variance in the data. The loadings of the eight items on the first factor appeared to reflect 'enjoyment', accounting for 40.2% of the variance. The loadings of the three items on the second factor appeared to reflect 'utility', and accounted for a further 16.3% of the variance. The item 'taxing-effortless' required consideration as it did not load on either. As this item's relevance was limited, and it was also found to decrease the scale's reliability, it was removed. The two factors were subjected to an item analysis which produced a Cronbach's α of 0.878 for factor 1 and 0.810 for factor 2 (see Table 1). Correlation between the factors was 0.309.

5.2. Construct validity placement scale

As mentioned before, the analyses were performed with the value 'I don't know' as missing value and as value 6, and the results are reported in the same order. Corrected item-total correlations ranged from 0.320 (0.330) to 0.566 (0.553). The KMO was 0.701 (0.698), and Bartlett's test of sphericity was $\chi^2(10) = 731.505$ (885.752), $p < .001$. PAF with promax rotation resulted in two factors with eigenvalues > 1.0 , which accounted for 66.7% (64.7%) of the variance in the data. The loadings of the three items on the first factor appeared to reflect 'learning possibilities' and accounted for 46.2% (44.6%) of the variance. The loadings of the two items on the second factor, appeared to reflect 'personal satisfaction', accounting for a further 20.5% (20.1%) of the variance. Cronbach's α of factor 1 was 0.650 (0.617) and α of factor 2 was 0.602 (0.596) (see Table 2). Correlation between the two factors was 0.486 (0.544).

Table 1
Affective component scale: Principal axis factoring with promax rotation.

Item	Item description	n	Factor 1	Factor 2
11	stupid-fun	1054	.873	-.005
1	dull-interesting	1049	.845	-.097
3	unpleasant-pleasant	1048	.798	.031
10	unattractive-attractive	1048	.782	-.091
4	annoying-agreeable	1049	.781	.024
2	boring-fascinating	1048	.628	.037
5	uncomfortable-comfortable	1048	.418	.075
6	old fashioned-modern	1043	.393	.072
7	unimportant-important	1049	.043	.893
8	bad-good	1053	-.012	.836
9	useless-meaningful	1054	.116	.564
-	taxing-effortless	1053	.168	-.224
Eigenvalues			4.824	1.951
% of variance			40.2%	16.3%
Cronbach's α			.878	.810

Table 2
Placement scale: Principal axis factoring with promax rotation, with value 'I don't know' as missing (and as value 6).

Item	Item description	n ^a	Factor 1	Factor 2
13	contact with mentors	977	.730 (.749)	-.037 (-.138)
15	mentor will have time to evaluate	899	.711 (.631)	-.128 (.038)
16	possibilities to plan learning activities	870	.427 (.392)	.228 (.245)
12	variety in the caregiving	1007	-.145 (-.141)	.810 (.726)
14	opportunities to learn new things	1018	.362 (.249)	.438 (.555)
Eigenvalues			2.309 (2.231)	1.026 (1.003)
% of variance			46.2% (44.6%)	20.5% (20.1%)
Cronbach's α			.650 (.617)	.602 (.596)

^a n is calculated with the value 'I don't know' as a missing value; with the value 'I don't know' recoded as 6, n increases.

5.3. Construct validity profession scale

Corrected item-total correlations varied from 0.036 (0.029) to 0.553 (0.523). Without the item 'elderly patients', the lowest correlation measured was 0.180 (0.194). The KMO was 0.848 (0.852) and Bartlett's test of sphericity was $\chi^2(136) = 2407.119$ (3420.849), $p < .001$. PAF with promax rotation resulted in four factors with eigenvalues > 1.0 , which accounted for 51.5% (50.2%) of the variance in the data. The loadings of the four items on the first factor appeared to reflect 'professional development', and accounted for 26.2% (25%) of the variance. The loadings of the four items on the second factor appeared to reflect 'collaboration', accounting for 11.5% (11.8%) of the variance. The items on the third factor appeared to reflect 'caregiving', loading most highly by five items, accounted for 7.4% (6.9%) of the variance. The fourth factor, loading most highly by four items, accounted for 6.4% (6.5%) of the variance. It appeared to reflect 'complexity and workload'. The items 'occupational health work-environment' and 'technical nursing skills needed' did not load ≥ 0.38 on any factor and were used in interpretation of respectively component two and four, in which they loaded most highly. These two items correlated well with the other items, did not decrease the Cronbach's α of the profession scale, and as their content is of importance, it was decided not to remove them. Cronbach's α of factor 1 was 0.740 (0.711), of factor 2 α was 0.678 (0.653), of factor 3 was 0.613 (0.609) and of factor 4 was 0.595 (0.588) (see Table 3). Correlation between factors 1 and 2 was 0.575 (0.567), between 1 and 3 0.366 (0.356), between 1 and 4 0.371 (0.371),

between 2 and 3 was 0.267 (0.184), between 2 and 4 0.202 (0.216) and between 3 and 4 0.401 (0.430).

5.4. Total scale and subscale analyses: reliability and correlations

Reliability of the total scale was calculated using a measure of internal consistency. With the item 'taxing-effortless' removed, the Cronbach's α was respectively .892 ($n = 534$, value 'I don't know' as missing), and 0.886 ($n = 941$, value 'I don't know' as 6). Cronbach's α of the 11 items of the affective component scale was 0.862 ($n = 1008$), and analyses with the value 'I don't know' as missing and as 6 were performed on the placement and profession scales (see Table 4).

Pearson's correlation r (with the value 'I don't know' as a missing value and as value 6 respectively) between the subscales affective component and placement, was 0.414 (0.404) ($p < .01$), the subscales affective component and profession .480 (0.505) ($p < .01$), and the subscales placement and profession .621 (0.578) ($p < .01$).

6. Discussion

This article reports on the development, validation, and cross-cultural adaptation of a new instrument to measure student nurses' perceptions of community care (SCOPE [appendix 1]). Because revision included inter alia deletion of one item, the final version of SCOPE is a 35-item instrument. The choice for an Exploratory Factor Analysis (EFA) was related to the fact that this was the first validity check of the newly developed instrument; whether relationships existed between the variables and what they may have been was not known beforehand. Given the phase of development of SCOPE, the reliability of all factors is good or at least acceptable. Reliability analyses of the whole scale and of the affective component, placement, and profession scale, as well as correlations between the scales and between the factors in each scale, contribute to the positive results of the validation process. The affective component, placement, and profession scale together form a coherent whole showing the measurement of an overarching construct. While this is confirmed by the value of the correlations, each scale - where all correlations are lower than 0.8 - also contributes some unique information on its own (Field, 2009).

The literature on students' perceptions of community care supports the underlying constructs of the scales. The factor analysis of the affective component scale revealed the factors 'enjoyment' and 'utility'. Most students have been found to prefer a challenging and interesting environment reflecting the enjoyment students experience in a high level of action (Happell, 1999). This explains the popularity of a practice placement in an acute care setting in a general hospital (Happell, 1999; McCann et al., 2010). 'Utility' can be seen as altruism, the meaning students give to caring about the needs of others, which is one of the reasons for choosing the nursing profession (Mimura et al., 2009). The factors 'learning possibilities' and 'personal satisfaction' are found in the placement scale. 'Learning possibilities' reflects the importance students give to both personal contact with a mentor and a structured approach to learning activities (Bjørk et al., 2014). 'Personal satisfaction' is represented by freedom of action and the ability to perform in the role of nurse (Anderson and Kiger, 2008). The first factor in the profession scale 'professional development' refers to the importance students give to high work status, variety in care, and technical nursing skills (McCann et al., 2010). The second, 'collaboration', reflects the importance students give to the variety of people they work within the context of practice (Murphy et al., 2012). 'Caregiving' can be seen as the opportunity to work independently, thus building confidence in performing different roles of nursing (Anderson and Kiger, 2008). The final factor 'complexity and workload' refers to perceived stressful work situations that are or will be encountered in community nursing, where the role of the nurse often is described as a 'Jack of all trades' (Philibin et al., 2010).

The validation process confirmed that the instrument measures an

Table 3
 Profession scale: Principal axis factoring with promax rotation, with value 'I don't know' as missing (and as value 6).

Item	Item description	n ^a	Factor 1	Factor 2	Factor 3	Factor 4
33	opportunities for advancement	961	.656 (.613)	.115 (.167)	–.058 (–.096)	.021 (.037)
30	patients' possible health improvement	955	.635 (.523)	–.053 (.023)	0.99 (.085)	–.058 (–.040)
29	high status work	950	.537 (.542)	.154 (.145)	–.012 (–.028)	.040 (.014)
23	variety in the caregiving	1014	.534 (.623)	–.064 (–.111)	.114 (.118)	.147 (.075)
19	collaboration with colleagues	1025	–.099 (–.047)	.885 (.796)	–.166 (–.141)	.016 (–.001)
20	collaboration with other disciplines	980	.122 (.072)	.469 (.474)	.032 (.028)	.098 (.126)
31	enthusiastic colleagues	941	.240 (.228)	.441 (.447)	.276 (.242)	–.165 (–.139)
24	occupational health work-environment	848	.286 (.276)	.295 (.263)	.028 (.010)	–.104 (–.134)
25	individual responsibility	1040	.088 (.066)	–.125 (–.122)	.579 (.578)	.051 (.068)
22	freedom of action	995	.195 (.247)	–.147 (–.176)	.510 (.530)	–.030 (–.095)
17	enjoyable relationships with patients	1021	.052 (.062)	.116 (.153)	.498 (.444)	–.034 (–.014)
28	elderly patients	1043	–.397 (–.371)	.058 (.047)	.470 (.446)	.057 (.067)
32	contact with family/kin	1021	.077 (–.006)	.067 (.143)	.433 (.416)	.062 (.099)
26	feelings of work pressure	1006	.069 (.046)	–.063 (–.038)	.032 (.049)	.607 (.619)
27	complex patient care needs	967	.362 (.360)	.043 (.012)	–.158 (–.137)	.486 (.494)
18	physically demanding work	1020	–.255 (–.211)	.006 (.005)	.275 (.241)	.406 (.410)
21	technical nursing skills needed	1042	.069 (.178)	.189 (.114)	.185 (.228)	.278 (.185)
Eigenvalue			4.449 (4.249)	1.953 (2.004)	1.265 (1.181)	1.094 (1.100)
% of variance			26.2% (25%)	11.5% (11.8%)	7.4% (6.9%)	6.4% (6.5%)
Cronbach's α			.740 (.711)	.678 (.653)	.613 (.609)	.595 (.588)

^a n is calculated with the value 'I don't know' as a missing value; with the value 'I don't know' recoded as 6, n increases.

Table 4
 Reliability of the subscales placement and profession.

Scale	Items	Value 'I don't know' = missing Cronbach's α (n)	Value 'I don't know' = 6 Cronbach's α (n)
Placement	5	.696 (775)	.679 (1033)
Profession	17	.810 (635)	.799 (986)

overarching construct, so the affective and cognitive components (i.e., placement and profession) of community care are interrelated; in particular, the perception of placement and profession correlate relatively highly. An explanation could be that these two concepts reinforce each other in two directions. A positive perception of community care for a future career will likely encourage students to see this field as attractive for a placement, while by a negative perception students will not likely aspire a placement in community care, leading to a missed chance to correct possible (negative) misconceptions. If 'unknown is unloved', improving perception of a placement is, thus, a key-factor for the ability to meet the challenges community care offers.

SCOPE is important for both the field of community care and education. Gaining a deeper insight into students' perceptions allows care managers and student mentors to create challenging and interesting placements. Community care is a field which is becoming, although too slowly and still to a limited degree, increasingly popular during the period of education, and students' perceptions and experiences vary from 'challenging, self-directed and meaningful' to 'lack of time' and 'few challenges' (Kloster et al., 2007). If the community care field can decrease the aforementioned impediments and enhance positive placement experiences, it is likely that more students will see this field as being desirable. To influence students' perceptions, nursing educators are working on curriculum redesign, shifting their focus from preparing students for work in the hospital to preparation for the advanced nursing roles in the community. Students have only a limited idea of community nursing, often underestimating the complexity of the field, being less visible than in the technical environment of acute care (Van Iersel et al., 2016). SCOPE can disclose these misperceptions giving substance to themes in education, and help in designing effective pre-placement orientation. Therefore, SCOPE can be used both for the design of a 'tailor-made' curriculum and as a tool for evaluating the curriculum's success. Curricula are often evaluated in terms of student competencies or data regarding student pass rates. SCOPE, however,

gives educational institutions a way to also evaluate their curriculum on students' perceptions.

There are some limitations which need to be noted. First, some factors, especially in the placement- and profession scales, show a moderate reliability (Cronbach's α between .59 and .70). Although this is considered to be adequate, consideration should be given to adding one or more items in a subsequent round of testing. Second, there are technical problems in scale validation with dimensions having three or fewer items (Polit and Beck, 2008). This is an additional reason for adding items in the placement scale. Third, developing evidence regarding the psychometric adequacy of an instrument takes more steps than just one validation study. Opportunities for future study therefore include further testing of the instrument, as here, the Dutch version of SCOPE is psychometrically tested. If this study aims to determine the factor pattern in the use of the English version of this instrument, exploratory factor analysis can be carried out again; in later studies that adopt this scale from another culture, a confirmatory analysis will be more suitable (De Vet et al., 2005).

7. Conclusion

In summary, SCOPE shows satisfactory psychometrical properties in a large sample of nursing students. The rationale for its development was twofold. SCOPE, first, provides information which gives direction to the design and development of a new curriculum for nursing with as goal bridging the gap between home care and institutional care. Second, it makes it possible to determine, across time, the success of the new curriculum. The analyses in this study indicate SCOPE is suitable for both of these purposes. As the workforce shortage in community nursing is a problem in many Western countries, the relevance of the content of the instrument is high. It is for this reason recommended for potential future use also in international contexts.

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Conflicts of interest

None.

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Appendix 1. SCOPE: Scale on COMMUNITY care PERceptions*Questionnaire for Bachelor Nursing Students' Perceptions of Community Care*

The number of people receiving community care in their homes is rapidly increasing due to both an aging population and developments in the health care profession itself. Therefore, more registered nurses are needed who choose community care. We are interested in your expectations and perceptions of learning and working in community care. Completing the questionnaire will take no longer than 10 min.

➤ **First a few general questions:**

What educational institution are you attending now? _____

What is your student registration number? _____
(this will not be used to identify you as a person, but to enable the comparison of your perceptions now with your perceptions and expectations in the future)

I am: Male Female

What is your date of birth? (day-month-year) _____

What is your postal code (or if you are living in student housing, the postal code of your parents or guardians)?

What is your level of education completed (e.g., high school, vocational college...)?

Experience in community care, for example as a part-time job or placement: Are you currently working or have you ever worked or apprenticed in community care (either paid or unpaid)?
 Yes No

Experience with family or friends working in community care: Do you have family or friends working in community care?
 Yes No

Experience in community care in your private situation: Has someone in your family or have you yourself received community care in the past or is receiving it now?
 Yes No

Do you belong to a church, or a specific religious group?
 Yes No

If so, which? _____

In what country were you born? _____

Where was your father born? _____

Where was your mother born? _____

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