

What factors influence nurses' behavior in supporting patient self-management? An explorative questionnaire study



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ABSTRACT

Background: A major challenge for nurses in hospital care is supporting chronically ill patients in self-managing their chronic condition. Self-management support requires a broad range of competencies and is often regarded as difficult to implement in daily practice. So far, we have no insight in nurses' behavior in daily practice with regard to self-management support and what factors may influence their behavior. **Objectives:** The aim of this survey was to explore (i) the self-reported behavior on self-management support of nurses in a university hospital; and (ii) the factors influencing this behavior.

Design: Total sample approach with cross-sectional design.

Participants and setting: Nurses employed by a university hospital received an invitation for the research through e-mail containing a link to the survey. Of the 2054 nurses who had been invited to participate, 598 responded (29.11%). The entire questionnaire was completed by 379 nurses, 32 of whom indicated they did not work with patients on a daily basis. After excluding those 32, the final sample included 347 valid responses (16.9%). 90.5% of the respondents was female, mean age was 38.8 years.

Methods: In a web-based questionnaire, the self-efficacy and performance in self-management support instrument (SEPS-36) was used, with additional questions about attitude, subjective norms, and perceived barriers for self-management support.

Results: This study shows that nurses are self-confident of their capabilities to support self-management. They also feel that most of the time they acted accordingly. Still, a significant gap between self-efficacy and behavior of self-management support was found ($p < 0.001$). Nurses themselves perceive lack of time and patients' lack of knowledge as barriers for self-management support, but this did not influence their behavior ($p > 0.05$). Regression analysis showed that perceived lack of own knowledge, the presumed absence of a patients' need for self-management support, and nurses' self-efficacy in self-management support are factors that influence the behavior of self-management support. 41.1% of the variance of behavior is explained by these three factors.

Conclusion: This study shows a significant gap between self-reported self-efficacy and behavior in self-management support in nurses working in a university hospital. To enhance self-management support, managers and educators should take these influential factors into account. A third of the nurses did not report a need for additional training on self-management support. This implies that programs should also aim to improve reflective skills and raising awareness.

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What is already known about the topic?

- The support of patients' self-management requires a broad range of competencies.

- Nurses often do not know exactly what is expected from them with regard to patient self-management support.
- Nurses' behavior in self-management support can be influenced by various factors such as attitude, subjective norms, and self-efficacy.

What this paper adds

- Nurses believe that they are able to support patients' self-management and report sufficient behavior of self-management

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support, but this study shows a significant gap between these two perceptions.

- Factors that influence the behavior of self-management support are perceived lack of own knowledge, the presumed absence of a patients' need for self-management support, and nurses' self-efficacy in self-management support.
- The most reported barrier to self-management support is lack of time, but this is not significantly associated with lower behavior of self-management support.

1. Introduction

One of the major tasks of nurses is supporting patients in self-managing their chronic condition (Alleyne et al., 2011; Kralik et al., 2004). Due to the increase in prevalence of chronic conditions, healthcare is shifting from an acute care model towards a chronic care model (WHO, 2005). Consequently, nurses are meeting chronically ill patients in more acute settings such as hospitals. Although patients with chronic conditions may encounter many different professionals, self-management support is often provided by nurses because they are highly trusted by patients (Alleyne et al., 2011; Elissen et al., 2013).

Self-management skills enable patients to incorporate the chronic condition into their lives and to remain as self-dependent as possible (Barlow et al., 2002). Self-management encompasses elements of autonomy and shared decision-making (Udlis, 2011). Therefore, the support of patients' self-management requires a broad range of competencies (Elissen et al., 2013; Sahlsten et al., 2007). In the literature, many different interpretations of the concepts of self-management and self-management support are given (Jonsdottir, 2013), and consequently nurses often do not know exactly what is expected from them with regard to self-

management support (Sadler et al., 2014). Studies of our research group showed that nurses have diverse views on self-management support. These views differ with respect to the relation between the patient and the goal of self-management. Where some nurses focus on the everyday life of patients and on coaching, other nurses stress the importance of optimal biomedical outcomes and promote adherence (Been-Dahmen et al., 2015; van Hooft et al., 2015a).

The literature on competencies needed for self-management support is sparse. Often they are broadly formulated (WHO, 2005), applicable to specific contexts only (Lawn et al., 2009), or not aimed at nurse professionals (Pols, 2009). A detailed overview of required competencies for nurses was published only recently by our research group (van Hooft et al., 2015b). Six categories of competencies are described: five of these are named after the phases of the Five A's Model: Assess, Advise, Agree, Assist, and Arrange (Glasgow et al., 2003). This cyclic model is a framework for the process of self-management support and is therefore a useful explication of required competencies. The first phase (Assess) involves assessment of motivation and the beliefs of patients so the nurse is able to adjust her support to the specific needs of the patient (Glasgow et al., 2006; Lawn et al., 2009). In the second phase (Advise), the nurse gives information and instruction, as information is a prerequisite for the patient to make informed decisions (Udlis, 2011). The third phase (Agree) involves shared decision-making and relates to mutual goal setting (Schulman-Green et al., 2012; Stacey et al., 2008). In the next phase, the nurse Assists the patient with overcoming barriers in daily living with a chronic condition (Schulman-Green et al., 2012). The fifth phase (Arrange) involves follow-up care (Pols, 2009). The sixth category of the overview of competencies encompasses overall competencies for self-management support, like a partnership approach or deviating from protocols where necessary (Hostick and

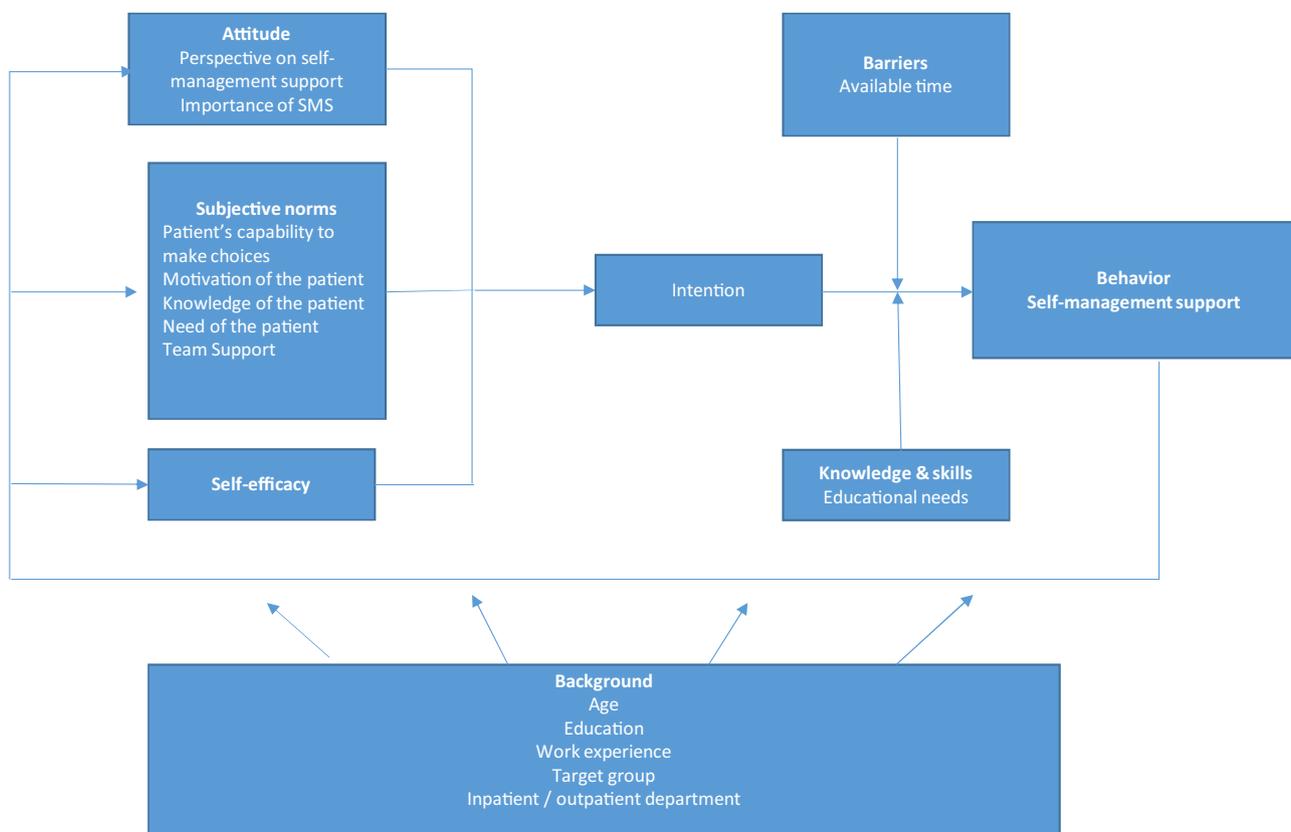


Fig. 1. The Attitude, Subjective norms, and Self-Efficacy (ASE) model (de Vries et al., 1988).

McClelland, 2002; Pols, 2009; Sandman et al., 2012). The essential competencies for self-management support are basis of the SEPSS-36 (Self-efficacy and Performance into Self-management Support), an instrument to assess how nurses use these competencies in daily practice (Duprez et al., 2016).

Nurses' behavior in self-management support can be influenced by various factors such as attitude, subjective norms, and self-efficacy as proposed in the ASE model (Fig. 1) (de Vries et al., 1988).

Based on the Theory of Planned Behavior (Ajzen, 1991) and the Theory of Reasoned Action (Fishbein and Ajzen, 2010), the ASE-model assumes that the intention to perform a certain behavior is the best predictor for such behavior. One of the factors influencing the intention to perform a certain behavior is 'attitude'. In a previous study we distinguished four dissimilar attitudes towards self-management support (van Hooft et al., 2015a). A nurse with a coach attitude regards self-management support as a natural part of her job; a nurse with a gatekeeper attitude believes that self-management support is a means to lower health care costs; a nurse with a clinician attitude regards self-management support as a way to increase patients' adherence; and, a nurse with an educator attitude believes that education about lifestyle changes is the most important component of self-management support.

The 'subjective norms' in the ASE-model refer to perceived support or pressure from others, such as patients or the team of professionals. Subjective norms related to self-management support as described in literature are for example 1) a team culture of having a focus on more urgent medical issues (Whitlock et al., 2002); 2) patient-related factors, such as (presumed) mental or physical inability to self-manage and making decisions (Barnes et al., 2013; Norris and Kilbride, 2014; Thorne et al., 2000), and 3) low patient demand for self-management support (Whitlock et al., 2002).

Self-efficacy, then, i.e. the belief one has about one's capabilities and the control to perform, is an important predictor of behavior. It bears upon the choices a person makes and on the person's reactions to obstacles encountered (Bandura, 1991). Low self-confidence of nurses regarding self-management support is described as a cause for hampering self-management support behavior (Whitlock et al., 2002).

While in the ASE-model, attitude, subjective norms, and self-efficacy determine the intention to perform a certain behavior, the actual behavior is also influenced by other factors; i.e. barriers and skills (de Vries et al., 1988). Lack of time is frequently described as a barrier to self-management support (Hook, 2006; Lawn and Schoo, 2010; Norris and Kilbride, 2014; Whitlock et al., 2002). Nurses having limited skills regarding self-management support is a previously described factor negatively influencing their behavior in self-management support (Lawn and Schoo, 2010; Whitlock et al., 2002). The work setting could also be of influence. Whereas nurses working in outpatient clinics often have scheduled appointments with patients for self-management support, ward nurses have to support patients during non-scheduled contacts.

So far, however, we have no insight in nurses' behavior with regard to self-management support competencies and what factors may influence their actual practice.

1.1. Aim

We performed a survey among nurses of a university hospital to assess (i) their self-reported behavior with regard to self-management support; and (ii) factors influencing their behavior.

The hypotheses we developed are described in Box 1.

2. Methods

The study employed a cross-sectional design, using a web-based questionnaire. Under Dutch law, no ethical approval is needed for research among professionals. Nonetheless, in order to protect the welfare of the research subjects, the study protocol was reviewed and approved by the University's Institutional Review Board. Confidentiality and anonymity of the nurses was ensured in an invitational e-mail.

2.1. Participants

The initial sample consisted of all nurses employed by a university hospital in Rotterdam, the Netherlands. Exclusion criteria were: working with anesthetized and highly sedated

Box 1. Hypotheses about factors that influence nurses' self-management support behavior.

Hypothesis 1: A positive attitude towards self-management support has a positive influence on the self-management support behavior of nurses.

Hypothesis 2: The preferred attitude (coach, educator, clinician, or gatekeeper) is significantly associated with the self-management support behavior of nurses.

Hypothesis 3: The perception that the team does not support self-management support has a negative influence on the self-management support behavior of nurses.

Hypothesis 4: The perception that patients are not capable to make choices has a negative influence on the self-management support behavior of nurses.

Hypothesis 5: The perception that patients are not motivated for self-management support has a negative influence on the self-management support behavior of nurses.

Hypothesis 6: The perception that patients do not have a need for self-management support has a negative influence on the self-management support behavior of nurses.

Hypothesis 7: The perception that patients have insufficient knowledge for self-management negatively influences self-management support behavior of nurses.

Hypothesis 8: Self-efficacy is positively correlated with the self-management support behavior of nurses.

Hypothesis 9: Lack of time negatively influences self-management support behavior of nurses.

Hypothesis 10: Insufficient knowledge about self-management support negatively influences the self-management support behavior of nurses.

Hypothesis 11: Nurses working at outpatient clinics have a higher score on self-management support behavior than nurses working at inpatient wards.

patients (e.g. in the operation room and the recovery room), or working at an emergency room.

2.2. Measurements

The questionnaire was divided into five sections: demographic variables, the nurse's attitude to patient self-management support, self-efficacy and behavior, subjective norms, and educational needs. The following background variables were collected: age, gender, educational level, work experience, and work setting.

2.2.1. Attitude towards self-management support (hypotheses 1 and 2)

Respondents were asked how they valued the importance of self-management support for nursing care, on a scale from 1 to 10. In addition, the respondents' attitude towards self-management support was measured with short descriptions of the four diverse attitudes on self-management support previously mentioned in the Introduction Section (van Hooft et al., 2015a). Nurses were asked to indicate which description fitted best and which fitted least.

2.2.2. Self-efficacy and behavior (hypothesis 8)

Self-perceived self-efficacy and behavior with regard to self-management support was assessed with the SEPSS-36. This newly developed and validated instrument consists of 36 items addressing competencies required for self-management support (Duprez et al., 2016). It assesses both self-efficacy and behavior for each item. The SEPSS-36 consists of six subscales containing six items each. As previously described in the Introduction Section, five subscales are based on the cyclic Five A's Model of Self-Management Support that distinguishes five sub-sequential phases: *Assess, Advise, Agree, Assist, and Arrange* (Glasgow et al., 2003). The sixth subscale involves overall competencies needed in each phase of the self-management process. Self-efficacy was assessed from the statement 'I think I can do this', to be rated on a five-point Likert scale ranging from 0 ('Not at all'), 1 ('Not sufficient'), 2 ('More or less'), 3 ('Sufficient'), to 4 ('Good'). Behavior was assessed from the statement 'I do this', with response categories ranging from 0 ('Never'), 1 ('Rarely'), 2 ('Occasionally'), 3 ('Frequently'), to 4 ('Always'). In the validation study, the Cronbach's alpha (α) for the measurement of self-efficacy was 0.96; for the measurement of behavior α was 0.95.

2.2.3. Subjective norms, barriers and knowledge (hypotheses 2–7, and 9–10)

Subjective norms related to patients (their motivation, knowledge, needs, and capabilities) and related to the team (support) were listed as potential barriers to self-management support (5 items).

Also, barriers such as lack of time and insufficient knowledge were added to this list (2 items).

The subjective norms, barriers, and knowledge were combined in one list of items. Respondents were asked to mark the three items they found most relevant to their situation.

Respondents were also asked to state their educational needs regarding self-management support. We formulated an educational need for each subscale of the SEPSS-36 (e.g. 'I need education about assessing the preferences and experiences with regard to the patient's illness'). Respondents were asked to indicate which educational needs were applicable to them.

2.3. Data collection

Data collection took place from December 2014 to January 2015. Eligible candidates received an invitation to participate via an e-mail that contained a link to the survey. The instructions on the

questionnaire included information about whom to contact if the nurse experienced any problems connecting with the online questionnaire. Nurses were able to complete the questionnaire at quiet moments during their work time, or in their own time. Reminders were sent to all potential respondents after two weeks and after four weeks. In addition, flyers drawing attention to the survey and paper versions of the questionnaire were distributed to all the departments to achieve a higher response rate (de Leeuw et al., 2008). As an incentive to complete the questionnaire, the team with the highest response rate was to receive a gift box with wellness products, e.g. body lotion and shower gel.

2.4. Analysis

Descriptive data were generated for all variables. Statistical analyses were performed using SPSS21 (SPSS Inc., Chicago, IL, USA). Level of significance was set at p -value $p < 0.05$. Prior to analysis the data was screened for repetitive response patterns ($>10\%$ of the answers the same on the SEPSS-36; $n=5$), and missing subscale scores ($>10\%$ of the items of the subscale). The data of the dependent variables were checked for normal distribution.

To determine self-efficacy and behavior, sum scores were calculated for each of the six subscales (range 0–4), as well as total sum scores for self-efficacy and behavior (total range of 0–24). Also, differences between the sum scores of self-efficacy and behavior were calculated.

We used different tests for the different hypotheses. These tests are described below. All t -tests were two-tailed.

Hypothesis 1. A positive attitude towards self-management support.

Pearson's correlation tests served to determine the correlation between the scores on perceived importance of self-management support and sum scores of behavior.

Hypothesis 2. The preferred attitude.

One-way ANOVA variance analysis with a Bonferoni post hoc test was performed to measure associations between the descriptions of the attitude towards self-management support and the sum scores on behavior.

Hypothesis 3–7. Subjective norms.

Frequencies were calculated for all subjective norms variables. To test for differences in sum scores of behavior between the different groups we used independent samples t -test for all subjective norms.

Hypothesis 8. Self-efficacy.

Pearson's correlation test was performed to determine the correlation between the scores on self-efficacy and behavior. A paired sample t -test was conducted to analyze differences in means between sum scores on self-efficacy and behavior.

Hypothesis 9–10. Lack of time and Insufficient knowledge about self-management support.

Correlations between sum scores and educational level were assessed with Spearman's correlation tests. One-way ANOVA variance analysis with a Bonferoni post hoc test was performed to measure associations between behavior and educational level.

Independent samples t -tests were performed to compare differences in sum scores of behavior between nurses who perceived lack of skills or lack of time as a barrier and nurses who did not.

Hypothesis 11. Work setting (outpatient versus inpatient wards).

Independent samples *t*-tests were performed to compare differences in sum scores of behavior between nurses working at an inpatient ward and at an outpatient department.

2.4.1. Predictors of self-management support behavior

To determine which factors influence the behavior of self-management support a stepwise regression analysis was executed with the significant variables of the ASE-model.

3. Results

3.1. Response

Of the 2054 nurses who had been invited to participate, 598 responded (29.11%). The entire questionnaire was completed by 379 nurses, 32 of whom indicated they did not work with patients on a daily basis (e.g. team managers). After excluding those 32 from data-analysis, the final sample included 347 valid responses (16.9%). Characteristics of the respondents are shown in Table 1.

In the current study the α for self-efficacy was 0.95, and the α for behavior 0.94.

3.2. Behavior

The mean scores of the subscales for behavior varied from 1.47 to 2.47. The total mean (SD) sum score of behavior was 11.69 (3.40), which implies that, on average, nurses tend to carry out self-management support activities more than rarely, but less than frequently (Table 2).

3.3. Attitude

The importance of self-management support for nursing care was rated with a mean (SD) value of 7.92 (1.13). Higher importance was significantly related to a higher score on behavior ($r=0.215$; $p=0.001$), indicating that a positive attitude towards self-

management is related to a positive perception of nurses' own self-management support behavior (hypothesis 1).

The most preferred attitude towards self-management support was the coach attitude (38.0%; $n=132$). Next came the educator (32.6%; $n=113$), the clinician (15.6%; $n=54$), and the gatekeeper (13.8%; $n=48$) attitudes. Analysis of variance showed no significant difference in the sum scores of behavior between the different attitudes, implying that the preferred attitude (coach, educator, clinician, or gatekeeper) was not significantly associated with nurses' self-management support behavior (hypothesis 2).

3.4. Subjective norms

With regard to subjective norms, respondents mentioned a patient's lack of knowledge (37.5%, $n=130$), patients' lack of ability to make choices (21.0%, $n=73$), and unmotivated patients (16.1%, $n=56$) as the most important factors influencing their behavior of self-management support (Table 3). But the respondents who found these subjective norms relevant for their situation did not have a significantly lower sum score on behavior, so the perception that patients are not capable of making choices (hypothesis 4), that patients are not motivated for self-management support (hypothesis 5), and that patients have insufficient knowledge for self-management (hypothesis 7) did not negatively influence self-management support behavior of nurses. Respondents who held the opinion that patients do not have a need for self-management support (11.0%, $n=38$) had a significantly lower sum score on behavior than respondents who did not hold that opinion ($t=-3.055$; $df=253$; $p=0.002$). This means that the perception that patients do not have a need for self-management support had a negative influence on the self-management support behavior of nurses (hypothesis 6). Only 9 respondents perceived that the team did not support them in self-management support (hypothesis 3). We could not draw any conclusions based on this low number.

3.5. Self-efficacy

The total mean (SD) sum score of self-efficacy was 16.96 (3.03), which implies that most nurses are self-confident about their self-management support competencies. Self-efficacy was significant related with behavior, $r=0.60$, $p<0.001$ (hypothesis 8).

The difference between the total sum scores of behavior and self-efficacy was significant ($t=29.03$; $df=254$; $p<0.001$) (Table 2), indicating a lower behavior than expected based on the scores on self-efficacy.

3.6. Barriers and knowledge

Lack of time (46.4%) was seen as the most important barrier to self-management support (Table 3). However, the respondents in question did not have a lower score on self-management behavior than other respondents ($t=0.21$; $df=160.28$; $p=0.83$). So lack of time did not negatively influence self-management support behavior of nurses (hypothesis 9).

No relationship was found between educational level and behavior. With regard to knowledge and skills on self-management support, 17.9% ($n=62$) of the nurses perceived their own knowledge about self-management support as insufficient. These respondents had a significantly lower score on behavior of self-management support (mean (SD) value of 10.00 (3.12)), than respondents who did not hold that opinion about their knowledge (mean (SD) value of 12.24 (3.32)) ($t=-4.68$; $df=253$; $p<0.001$). This means that insufficient knowledge about self-management support negatively influenced the self-management support behavior of nurses (hypothesis 10).

Table 1
Demographic characteristics of the respondents.

Characteristics (n = 347)	n	(%)
<i>Gender</i>		
Female	314	(90.5)
Male	33	(9.5)
<i>Age (years)</i>		
20–29	111	(32.0)
30–39	81	(23.3)
40–49	63	(18.2)
>49	92	(26.5)
<i>Setting</i>		
Inpatient department	288	(83.0)
Outpatient department	59	(17.0)
<i>Work experience (years)</i>		
0–5	70	(20.2)
6–10	72	(20.7)
11–15	45	(13.0)
>15	160	(46.1)
<i>Educational degree</i>		
Student nurse	2	(0.6)
Basic degree in nursing	90	(25.9)
Bachelor degree in nursing	142	(40.9)
Master degree in nursing	20	(5.8)
Scientific degree	5	(1.4)
Other additional education	51	(14.7)
Missing	37	(10.7)

Table 2
Scores on behavior and self-efficacy.

Subscales (n)	Score behavior				Score self-efficacy				Mean difference	Educational needs% of all cases (n)
	Mean sum score	SD	Min ^a	Max	Mean sum score	SD	Min	Max		
Assess (347)	2.07	0.71	0.00	4.00	2.93	0.61	0.50	4.00	0.85*	6.9% (24)
Advise (322)	2.11	0.65	0.00	4.00	2.97	0.56	1.33	4.00	0.85*	7.8% (27)
Agree (298)	1.60	0.77	0.00	3.83	2.65	0.69	0.00	4.00	1.04*	20.2% (70)
Assist (273)	1.86	0.75	0.00	4.00	2.78	0.63	0.83	4.00	0.92*	14.7% (51)
Arrange (263)	1.48	0.76	0.00	3.83	2.49	0.72	0.67	4.00	1.01*	13.0% (45)
Overall (255)	2.47	0.68	0.83	4.00	3.04	0.51	1.50	4.00	0.57*	7.5% (26)
Total sum score	11.69	3.40	3.83	21.00	16.96	3.03	5.67	24.00	5.27*	
No educational needs										34.0% (118)

Note: SD, standard deviation; mean difference tested with a two-tailed paired samples *t*-test.

^a observed range.

* significance $p < 0.05$.

Table 3
Subjective norms, barriers and knowledge for self-management support (n = 347).

	% of all cases (n)
<i>Subjective norms</i>	
I believe my patients have insufficient knowledge for self-management of their chronic condition	37.5% (130)
I believe my patients are not capable to make choices by themselves	21.0% (73)
I believe my patients are not motivated for self-management of their chronic condition	16.1% (56)
I believe my patients don't have the need for self-management of their chronic condition	11.0% (38)
I don't feel supported by my team	2.6% (9)
<i>Barriers and knowledge</i>	
I do not have enough time	46.4% (161)
I notice that my own knowledge is insufficient to support the self-management of my patients	17.9% (62)

Almost one third of the nurses felt that they did not require additional education about self-management ($n = 118$). Nurses who did report a need for education (66%) indicated that this is most needed on mutual goal-setting (20.2%, $n = 70$), assisting patients in helping overcome problems related to the disease (14.7%, $n = 51$), and in arranging follow-up care (13.0%, $n = 45$).

3.7. Background variables

Respondents working in an inpatient ward had a significantly lower sum score on behavior (mean (SD) value of 11.45 (3.31)) than nurses working in outpatient departments (mean (SD) value of 13.11 (3.66)); ($t = -2.82$; $df = 253$; $p = 0.005$) (hypothesis 11). They also had a significantly lower score on self-efficacy (mean (SD)

value of 16.72 (2.88)) than nurses working in an outpatient clinic (mean (SD) value of 18.29 (3.50)); ($t = -2.98$; $df = 253$; $p = 0.003$).

3.8. Predictors of self-management support behavior

Stepwise regression analysis showed that three factors were significant predictors for self-management support behavior. We first controlled for setting (inpatient or outpatient ward). This accounted for 3.1% of the variance (adjusted R^2 2.7%). In the subsequent steps the *importance of self-management support*, the *presumed absence of a patients' need for self-management support*, the *perceived knowledge gap*, and *self-efficacy* respectively, were entered. In the final model, importance of self-management support (attitude) and setting were mediated by self-efficacy. The

Table 4
Determinants of self-management support behavior.

Behavior	Step 1		Step 2		Step 3		Step 4	
	β	P Value						
<i>Background</i>								
Working in an inpatient ward or outpatient department	0.18	0.005	0.14	0.020	0.13	0.025	0.06	0.274
<i>Attitude</i>								
Importance			0.19	0.002	0.15	0.010	0.06	0.228
<i>Subjective norms & knowledge</i>								
Patients do not have a need					-0.19	0.001	-0.16	0.002
Own insufficient knowledge					-0.26	<0.001	-0.14	0.005
<i>Self-efficacy</i>								
							0.53	<0.001
Explained variance	$R^2 = 0.03$	<0.05	$R^2 = 0.07$	<0.001	$R^2 = 0.17$	<0.001	$R^2 = 0.41$	<0.001
F-value (df)	7.97 (253)		8.96 (252)		12.37 (250)		34.68 (249)	

Note: Stepwise regression analysis; β , standardized coefficients; df, degrees of freedom.

final model explained 41.1% of the variance of behavior of self-management support (adjusted R^2 39.9%) (Table 4).

4. Discussion

In this study we used the SEPSS-36 to determine the self-management support behavior of nurses. This instrument is able to operationalize self-management support competencies, which is an important feature in this regard because nurses' interpretations of the concept of self-management support tend to differ (Been-Dahmen et al., 2015). Several factors were found to influence whether nurses actually support patients' self-management in practice. One of these factors is knowledge about how to provide self-management support, which is in line with a previous study on determinants of self-management support (Kosmala-Anderson et al., 2010). Interestingly, one third of the nurses indicated they did not need extra education, and only 17.9% reported to find their own knowledge of self-management support lacking. Another influential factor is the assumption that patients have no need for self-management support. These two factors were both significantly associated with a lower score on behavior. A tendency not to involve patients in the self-management or decision process was described earlier (Aasen et al., 2012). Although it has been acknowledged that every patient with a chronic condition has certain adaptive tasks to fulfill (Corbin and Strauss, 1985; Kralik et al., 2004; Schulman-Green et al., 2012), nurses may be reluctant to give patients more autonomy and have a paternalistic attitude because they foresee health threats if patients make 'the wrong choices' (Dwarswaard and van de Bovenkamp, 2015).

Lack of time was acknowledged as an important barrier to self-management support, which is in line with other studies (Whitlock et al., 2002). Previous studies showed that education of patients, making nursing care plans or talking with patients are activities nurses tend to drop first when they run out of time (Ausserhofer et al., 2014; West et al., 2005). Many tasks described in the SEPSS-36 involve such activities. However, in this study lack of time was not significantly related to the self-reported self-management support behavior.

Several patient-related factors were also considered influential on the behavior of self-management support. For example, patients having no need for self-management support, being incapable of making choices, or lacking the knowledge to adequately self-manage their condition. This is a remarkable finding, since motivating and informing patients are crucial aspects of self-management support itself (Glasgow et al., 2003; Jones et al., 2011).

Many barriers for self-management support described in literature are external factors (Barnes et al., 2013; Lawn and Schoo, 2010; Norris and Kilbride, 2014; Thorne et al., 2000; Whitlock et al., 2002). Also in this study, most of the barriers nurses found applicable to their situation were considered to be beyond nurses' own sphere of influence, e.g. lack of time and patient-related factors. This could be labeled as external attribution, in which failures (not performing as one could can be regarded as a failure) often are ascribed to determinants external to the person (Weiner, 2000). Identifying this external attribution is important for educational practice because learning difficulties may arise when (student) nurses believe that failures are caused by external, stable, and uncontrollable factors (Weiner, 2000). Education and additional courses teaching self-management support should aim at teaching (student) nurses strategies to cope with these external factors (Dunn et al., 2013).

We hypothesized that the attitudes towards self-management support, derived from a previous Q-methodological study (van Hooft et al., 2015a), would determine nurses' behavior, but we could not establish this correlation. Although the results showed

diversity in attitudes, it is possible that responses to the questions about the described attitude or about the behavior were biased by social desirability. Of course, Q-methodology reveals existing differences in attitudes of groups, rather than differences in behavior (Cross, 2005).

Compared to a large survey among European nurses working in a general hospital on non-specialized nursing units, the response rate in the present study was low (Aiken et al., 2012; Sermeus et al., 2011). This could have influenced the results, but it is unknown in what direction. Some nurses reported that they found the questionnaire difficult as they could not relate to the subject very well. In the Netherlands, self-management is not yet well-established amongst nurses, and nurses may be under the impression that they do not treat chronic patients in hospitals. Nurses who already have an interest in self-management may have been more tempted to complete the questionnaire. This could explain the fact that the respondents overall regarded themselves as rather self-sufficient in self-management support.

This study shows that nurses were self-confident of their capabilities to support self-management. They also felt that most of the time they acted accordingly. Still, a significant gap between self-efficacy and behavior of self-management support was found. This suggests that believing to have the capability to support the self-management of patients may not always relate to actual practice. The largest gap was found in the subscale *Agree*, which was also the subscale whose subject was related with the highest need for education. Since the *Agree* phase requires shared decision-making skills, training aimed at integrating these skills in daily practice could help reduce this gap. Nurses valued the importance of self-management support as high (almost 8 out of 10). Still, they sometimes felt hampered to put the concept into action. We recommend that nurses receive support in reflecting further on the association between their positive views of how self-management support is part of their everyday practice and the reality of care work they face. This could also enhance their self-efficacy, as this is an important factor contributing to self-management support behavior.

Self-reported behavior may be different from directly observed patient-nurse interactions. We recommend additional observations for a more practice-based assessment of how self-management support is executed in practice. These observations may also raise awareness about the way nurses actually support self-management.

5. Conclusion

This study showed a significant gap between self-reported self-efficacy and behavior in self-management support in nurses working in a university hospital. The behavior of self-management support was influenced by perceived lack of own knowledge, by the presumed absence of a patients' need for self-management support, and by nurses' self-efficacy in self-management support. To enhance self-management support, managers and educators should take these factors into account. A third of the nurses did not report a need for additional training on self-management support. This implies that programs should also aim to improve reflective skills and raising awareness.

Conflict of interest

None declared.

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Ethical approval

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