

Original Article

Development of relationship with patient self efficacy scale: Gender, department, and grade level differences

A Çevirme, N Uğurlu¹, Ü Sahranç², K Özdemir³, G Durat⁴, Ö Ertürk, S Şahin⁵

Department of Public Health Nursing, Sakarya University, Faculty of Health Sciences, ²Department of Educational Sciences, Sakarya University, Faculty of Education, ³Department of Midwifery, Sakarya University, Faculty of Health Sciences, ⁴Department of Psychiatric Health Nursing, Sakarya University, Faculty of Health Sciences, Sakarya, ¹Department of Mental Health and Psychiatric Nursing, Muğla Sıtkı Koçman University, Faculty of Health Sciences, Muğla, ⁵Department of Nursing of Obstetrics and Gynecology, Ankara Yıldırım Beyazıt University, Faculty of Health Sciences, Ankara, Turkey

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ABSTRACT

Background: Self-efficacy has become a cross-disciplinary concept. In the field of healthcare, this concept is considered crucial for nurses; who play an important role in improving the health and well-being of the community. **Aims:** The aim of this study was to develop a “Relationship-with-the-patient self-efficacy scale” (RPSES). **Methodology:** A sample of 331 university students (310 females and 21 males; 168 from the midwifery and 162 from the nursing departments) were enrolled in the study. Out of 24 items, 8 behavior items with the highest factor loadings were selected regarding the nurse-patient-relationship self-efficacy according to the results of the preliminary exploratory factor analysis. **Results:** The final exploratory factor analysis revealed that the selected 8 items of RPSES had a single factor, explaining 83.28% of the total variance. The Cronbach alpha reliability coefficient was calculated as 0.97. **Conclusion:** This scale has been demonstrated to be a valid and reliable instrument. The analyses unfolded that RPSES scores of the students were not different between men and women and did not differ by the departments the students attended; however, the RPSES scores were different by the grade levels of the students (juniors and seniors). The fourth graders’ RPSES scores were higher than those of third graders.

KEYWORDS: Exploratory factor analysis, gender, grade level, midwifery, nursing, relationship-with-the-patient, self-efficacy

INTRODUCTION

Nursing and midwifery professions require direct and intensive communication with individuals to assist them during medical care.^[1,2] In cases where an open and honest relationship cannot be established, the patient usually develops anxiety because he or she may develop a kind of distorted perception of the surroundings, disease information, and medical personnel’s behaviors. Consequently, the patient’s need to obtain information about the disease and prognosis increases, especially during medical care procedures. Nursing and midwifery

personnel have important and inevitable responsibilities to respond to such needs.^[3]

The responsibilities and roles of nurses and midwives include not only the provision of healthcare services to patients but also they include the establishment

Address for correspondence: Dr. A Çevirme, Sakarya University, School of Health, Public Health Nursing, Sakarya, Turkey.
E-mail: acevirme@sakarya.edu.tr

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of efficient relationships with patients.^[4] Nurses and midwives assume several roles during the provision of healthcare services to serve as a “teacher, service, and information provider, counselor, leader, technical expert, and surrogate”.^[5] The theory of interpersonal relations proposesthree interlocking stages as follows: (1) **The Orientation Phase** requires the nurse/midwife to introduce herself/himself, to provide explanations to respond tothe medical concerns of the patient, and to understand the patient as a whole using the data obtained. (2) **The Working Phase** with the identification and exploitation subphases requires the nurse/midwife to assume the role of a mediator, interviewer, counselor, recorder/observer, and teacher.^[4] In this phase, active listening helps understand potential patient vulnerabilities; which may arise due to undressing during medical procedures orwhich may occur due to emerging bodily sensations and reactions associated with the disease. The healthcare provider shows respect, understands patient concerns, and assists the patient in solving health-related problems by offering professional skills as a resource person to inform the patient about her/his health conditions. (3) **The Termination Phase** requires the healthcare provider to assist the patient during the hospital discharge process and prepare the patient to go back to normal life activities by arranging follow-up appointments and giving information about important side effects of the treatment and precautions to be followed.^[4]

Even though such healthcare-related interpersonal relation skills are generally taught in the first 2 years of healthcare education in developed countries,^[6] there is a lack of specific patient–nurse relationship courses in the healthcare education curricula in Turkey. On the other hand, students have the opportunity of observing the relationship between patients and experienced nurses/midwives during the internship periods in the clinic. Also, student nurses and midwives can build up skills of relationship establishment with patients by following instructions and explanations provided by the academic staff in the clinic.

General interpersonal relationship behaviors include professional communication requirements like active listening, introducing oneself, empathic understanding, instilling hope and humor, informing the patient, accepting silence, providing clear explanations; focusing, reflecting, and approval, and asking necessary questions help the patient tofeel that -(s) he is understood, cared, and respected by the nurse/midwife.^[7] These kinds of behaviors of the nurse/midwife improve the quality of relationships in healthcare by leading the patient to build up trust andfind an opportunity to express himself/

herself. Therefore, the nurse/midwife should have self-confidence and self-efficacy during communication with the patient.

Self-efficacy is defined as one’s belief about one’scapacity to organize and execute future events or situations.^[8] One’s self-efficacy affectshis/her emotions, thoughts, motivation, and behaviors. Expectations about self-efficacy determine the types of behaviors during actions and help estimate the extent and duration of efforts to be spent.^[9] In short, self-efficacy can be defined as being aware of one’scapacities to perform a job in any field.^[10] Self-efficacy as a personal belief or perception about one’s capacity to perform general behaviors is called general self-efficacy. Self-efficacy, referring to a specified set of behaviors related to a specified field, is called specific self-efficacy.^[11-14] A person might believe that (s) he can succeed in one field while failing in another field.^[15] Interpersonal self-efficacy is a type of specific self-efficacy.^[16]

In general, self-efficacy corresponds to one relying on his/her resources rather than being skillful. In this regard, self-efficacy develops as a result of proper education anddeveloping personal qualifications. Regardless of the reason causing lower or higher self-efficacy levels, individuals with low self-efficacy levels usually experience negative feelings like despair, worry, and anxiety. In contrast, individuals with high self-efficacy levels are likely to experience positive feelings because they are good at decision making, comprehension, and academic achievement; they spend a high extent of efforts to achieve their goals; they are goal-oriented and proactive,^[17] and they are likely to experience job satisfaction.^[18]

In the last decades, self-efficacy has become an interdisciplinary concept. This concept is thought to be very crucial for nurses and midwives; who have an important role in healthcare to improve the health and well-being of the society.^[19] In this regard, the assessment of self-efficacy in the nurse/midwife-patient relationship, as a specific type of self-efficacy, becomes critical because nurses and midwives assume inevitably important roles and responsibilities inhealth care. A thorough literature review showed that no scales were available at present to measure the self-efficacy among nurses and midwives in establishing relationship with patients. Therefore, the present study aimed to develop a “Relationship-with-the-patient self-efficacy scale” (RPSES). Also, during the test construction process, the differences in mean scores between genders, education departments, and grade levels were investigated.

METHODOLOGY

Participants

The study was approved by the Ethical Committee for Clinical Investigations of the Sakarya University, School of Medicine (Number: 71522473/050.01.04/104). After the eligible individuals were duly informed, oral consent, and written consent forms were obtained from the participants according to the principles of the Declaration of Helsinki. The sample size of the study was calculated by multiplying the number of items of the RPSES by 5 to 10 in alignment with the literature.^[5,4,18] As the number of items in RPSES was 24, the sample size calculation showed that 240 individuals were needed to be included in the study. Compatible with the previous studies in the literature, 331 university students (310 females, 21 males) were enrolled in the scale development phase of the study. Of the participants, 168 were students at the midwifery department and 162 were students at the department of nursing. The school department of one of the participants was not specified. In total 78 participants were first-year students, 59 were second-year students, 103 were third-year students, and 65 were fourth-year students. Seven students did not specify which year students they were.

Procedure

The development process of the RPSES: First, an item pool was prepared based on the previously published articles in the literature.^[20-23] As the literature review revealed 8 types of behavior associated with the relationship with the patient, the scale was constructed with 8 items. For each of these behavior types, 3 items were developed so that the most representative item related to each type of behavior could be identified. As a result, the item number at first was 24. Then, the items in the item pool were evaluated by three academicians, one from the psychological counseling department and two from the school of health sciences. These experts made the required revisions in the items. Finally, the item pool became ready to conduct the pilot study.

In the pilot study, 35 midwifery and nursing students from the first and second years in the Faculty of Health Sciences were asked whether they clearly understood the items. The researcher took notes of the feedback received from these students. Based on the feedback, five items were revised. For example, the item, “I introduce myself to the patient”, was revised as “Before the procedure, I first introduce myself politely to the patient.” The item, “I inform the patient”, was revised as “I politely answer the questions of the patient and his/her relatives about the procedure.” The item, “I provide the necessary psychological support for all individuals”, was revised as “I provide the necessary

psychological comfort for all individuals (no matter whether they are pregnant/patient/healthy).” The item, “I relax the patient” was revised as “I assist the patient to do breathing exercises (breathing and relaxation) so that s/he can relax.” The item, “I make explanations to the patient”, was revised as “I explain all the processes to the patient briefly and politely to prevent him/her from being stressed due to uncertainty.”

In order to determine the factor structure of the scale, an exploratory factor analysis (EFA) was performed. First, the scree plot was examined to see the factor numbers of the scale. For the reliability analysis, the Cronbach-alpha formula was used. For the item analysis, the results of the item-total correlation test were examined. The scale was evaluated based on the total score since it comprised no sub-scales. The reliability and validity analyses were performed using the SPSS 17.0 software.

RESULTS

Structural validity

According to Büyüköztürk (2010),^[24] the value yielded by the Kaiser–Meyer–Olkin (KMO) test should be higher

Table 1: Results of the first and the last exploratory factor analyses

1 st EFA		2 nd EFA	
Items	Factor loading	Items	Factor loading
RPSES1	0.700	RPSES5	0.891
RPSES2	0.902	RPSES12	0.899
RPSES3	0.871	RPSES17	0.887
RPSES4	0.847	RPSES18	0.945
RPSES5	0.897	RPSES19	0.929
RPSES6	0.889	RPSES22	0.929
RPSES7	0.861	RPSES23	0.908
RPSES8	0.891	RPSES24	0.911
RPSES9	0.471		
RPSES10	0.916		
RPSES11	0.901		
RPSES12	0.891		
RPSES13	0.519		
RPSES14	0.904		
RPSES15	0.861		
RPSES16	0.890		
RPSES17	0.872		
RPSES18	0.924		
RPSES19	0.914		
RPSES20	0.870		
RPSES21	0.527		
RPSES22	0.919		
RPSES23	0.894		
RPSES24	0.894		
Eigen value: 17.125		Eigen value: 6.663	
Total variance explained: 71.353		Total variance explained: 83.284	

Table 2: Item-total correlations and Cronbach's Alpha Coefficients after item revisions

Item number	Rjx (Corrected Item-Total Correlation)	Cronbach's Alpha if Item Deleted
RPSES5	0.857	0.969
RPSES12	0.868	0.968
RPSES17	0.852	0.969
RPSES18	0.925	0.965
RPSES19	0.906	0.966
RPSES22	0.905	0.966
RPSES23	0.879	0.967
RPSES24	0.883	0.967

Table 3: Comparison of the RPSES scores between the genders, education departments, and the grade levels of the students

		n	\bar{X}	sd	df	t	p
Gender	Female	310	21.3774	4.89	329	-1.054	0.293
	Male	21	22.5238	3.65			
Department	Midwifery	168	21.1488	5.33	328	-1.188	0.236
	Nursing	162	21.7778	4.25			
Grade level	Junior	84	22.6190	2.33	147	-3.137	0.002
	Senior	65	23.5077	1.00			

than 0.60 and the Bartlett test should be significant to carry out a factor analysis with a given data set. The results showed that the KMO sampling adequacy test coefficient was 0.97 and the Bartlett Sphericity Test was significant $\chi^2 = 10823.21$ ($p < 0.001$). The items were factorable. After taking into consideration, the results from the KMO sampling adequacy and the Bartlett Sphericity tests, the varimax rotation was applied. The scree plot was examined within the results of the rotation. Figure 1 illustrates the factor numbers. The scree plot clearly showed that the scale's items could be reduced to a single factor structure. Also, the first exploratory factor analysis was made. The results are presented in Table 1, which shows the factor structure as a single factor based on the scree plot results. To obtain the minimum number of items among the selected eight types of behavior, the factor loading items with the highest value were selected and the remaining items were eliminated. In this context, RPSES1 and RPSES9 were deleted regarding the first behavior (*answering the questions of the patient and the relative related to the process*). For the second behavior (*preparing the patient for the medical procedures*), RPSES2 and RPSES10 were deleted. For the third behavior (*introducing oneself politely to the patient before the process*), RPSES3 and RPSES11 were deleted. For the fourth behavior (*informing the patient just before any process to help the patient feel relieved*), RPSES 4 and RPSES 20 were deleted. For the fifth behavior (*providing psychological comfort for every individual (pregnant, sick or healthy)*), RPSES 13 and

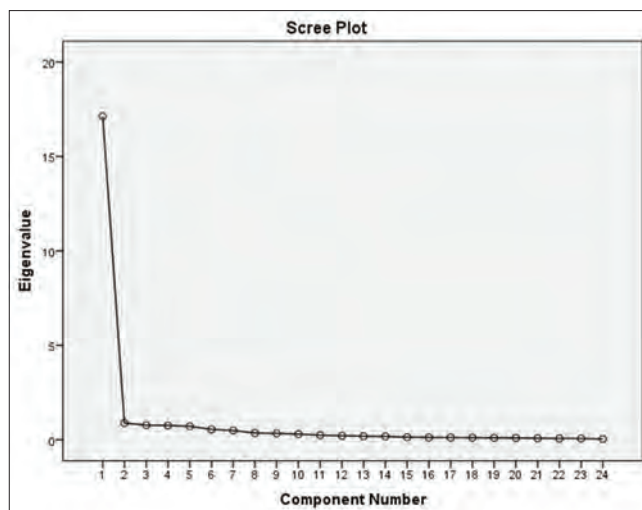


Figure 1: The factor numbers

RPSES 21 were deleted. For the sixth behavior (*friendly and warm physical contact with the patient to help him/her feel more secure*), RPSES 6 and RPSES14 were deleted. For the seventh behavior (*assisting the patient to perform breathing exercises to feel comfortable*), RPSES 7 and RPSES15 were deleted. For the eighth behavior (*explaining every process of the procedure to help the patient not feel nervous because of uncertainty*), RPSES8 and RPSES16 were deleted. The remaining items were re-examined with EFA. The results are presented in Table 1.

Reliability

The reliability analysis was conducted using Cronbach's alpha coefficient. The reliability of the scale was found to be 0.97.

Item analysis

For item analysis, the corrected item-total correlations were calculated. The corrected item-total correlation scores of RPSES ranged from 0.85 to 0.92, showing that almost all item-total correlations were above 0.30. The results are presented in Table 2.^[25]

Other results

Differences According To The Gender And Grade Levels

We examined the nurse-patient-relationship self-efficacy (RPSES) scores of the students by the gender, the department the students attended, and the grade levels of the students by using the independent samplest-test, Welch's t-test, and Tamhane T2. The results are shown in Table 3. The analyses revealed that the RPSES scores of the students were not different between women and men or by the department they studied. However, the RPSES scores were different by the grade level (juniors and seniors), with the higher RPSES scores in the fourth graders compared to the third graders. The results are presented in Table 3.

DISCUSSION

The results of the study have shown that RPSES has a single factor with the Eigen value of 6.663, explaining 83.28% of the total variance. In the literature, it is stated that the Eigen value of a factor should be higher than 1.0.^[24] In this context, the RPSES with a single factor has been found to have an appropriate Eigen value.

In the literature, it is reported that items with a loading value of <0.30,^[24] 0.50, and 0.70.^[26] can be omitted. Our study demonstrated that the factor loadings of all of the RPSES items were higher than 0.70. Therefore, no items were omitted based on the results of the second EFA. This finding indicates that the factor loadings of the items are quite high.

In the literature, Flynn and Cynthia^[27] stated that a reliability level of 0.60 or higher was acceptable to recognize the reliability of a scale. In this regard, the results of the reliability analysis have shown that the reliability score of the RPSES is quite high. Furthermore, the item analysis of RPSES has shown that the scale has appropriate item discrimination powers. Büyüköztürk^[25] stated that the item-total correlation test results of 0.30 and higher were acceptable. Based on the above-mentioned information in the literature, the newly developed RPSES is found to be a valid and reliable instrument, which is crucial to measure the self-efficacy of student nurses and midwifery students about nurse-patient relationships.

Despite high validity and reliability scores, there were some limitations in the scale development process. The lack of test-retest reliability analysis is one limitation of our study. Therefore, future studies focusing on the test-retest reliability of the scale are considered important.

Using the independent samples *t*-test and Welch's *t*-test with Tamhane T2; this study examined the RPSES scores of the students between the genders, the education departments, and the grade levels. RPSES scores of the participating students were not different between the genders and education departments; however, the scores were different between the grade levels of the students (juniors and seniors). The RPSES scores of the seniors were found out to be higher than those of juniors. To the best of author's knowledge, there is no study available in the literature explaining the different RPSES scores between the grade levels of the students when there are no score differences between the genders and education departments. We believe that the difference can be analyzed by examining the curricula of the students. Both of the nursing and midwifery departments share similar courses in their curricula; including

physiology, anatomy, microbiology, biochemistry, pharmacology, pathology, histology, surgical diseases, internal diseases, gynecologic diseases, and first aid and emergency care. First, it is observed that students from both departments had similar educational backgrounds. Second, the items of relationship with the patient did not include department-specific behaviors pertained to nursing or midwifery. Third, the theoretical information about the nurse-patient-relationship self-efficacy is given to the students from either of these departments in most of the courses but only during the first two years.

The difference in the RPSES scores by the grade levels of the students can be attributed to gaining experience and knowledge in relationships with patients in the third- and fourth-years of education. Students from the third- and fourth grades start interacting with patients more frequently compared to the first- and second-year students. The first and second-year students trust their theoretical knowledge about relationships with patients; however, this is a *pseudo* effect because of their lack of real-life experiences with patients. In their third and fourth years, the students are required to establish relationships with patients more frequently. Also, the third-year students experience more difficulties in their relationships with patients because of inexperience, causing them to feel less self-efficacious. Thanks to the internship programs and clinical practices, seniors in both nursing and midwifery departments have the opportunity to build relationship experiences further; enabling both juniors and seniors to evaluate their self-efficacy perceptions through real-life experiences. To better test the findings and proposed discussions in this article, future studies can be conducted on students from each grade level of educational institutions.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed. During the data collection phase, the rules in the Helsinki Declaration were followed.

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Conflicts of interest

There are no conflicts of interest.

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