

LOOKING AT MALE NURSE DISCRIMINATION AMONG NURSING STUDENTS WITH O'CONNOR'S FINGER DEXTERITY TEST: FUTURE OF GENDER DISCRIMINATION

Gulden Aynaci, PhD¹, and Hediye Gulmez, MsC¹

¹Trakya University, Health Science Undergraduate School, Edirne, Turkey

Corresponding Author: Gulden Aynaci: guldenaynaci@hotmail.com

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ABSTRACT

Background and objective

Hand dexterity and hand–eye coordination are very important in nursing profession. In nursing education, equal conditions for gaining experience should be established regardless of gender difference. The aim of this study was to evaluate the effects of gender difference on hand dexterity and hand–eye coordination.

Material and methods

This study included 100 undergraduate nursing students from the Trakya University, and they were evaluated using the O'Connor's finger dexterity test.

Results

Previous study results demonstrated that males were careful and willing to take care of their patients, but they felt that they had to be at the backstage because the occupation is a female-predominant one. They were very careful during the O'Connor's test. The average test duration for both the male and female students was similar. Students with longer hand and palm lengths had better hand dexterity. The larger wrist circumference and wrist width in male students than female students provided an advantage to the male nursing students. The O'Connor's test results demonstrated that gender discrimination in nursing profession is meaningless in terms of dexterity.

Conclusion

This study approaches gender discrimination in nursing with a different perspective. Male students are not less successful in hand and eye coordination and hand dexterity. It is important for males to have clinical learning without having sexual discrimination in order to provide high-quality patient care, it may help their career growth.

Keywords: *Gender discrimination; Hand–eye coordination; Male nurse; Male nursing students*

INTRODUCTION

Female nurses outnumber male nurses all over the world. However, every year more men choose to pursue careers in nursing. Traditionally, nursing is accepted as a feminine occupation. This may be demotivating for male nursing students and nurses.¹ Any difference in hand dexterity between male and female nursing students should be evaluated in this traditionally feminine-perceived occupation. Low availability of male role models in clinics may cause problems in the adaptation of male nursing students to clinics. In working environments, they may feel prejudice from patients, their relatives, and even from female colleagues.

The process of getting used to working environments may be difficult and may create tension on them.²

Hand dexterity and hand–eye coordination are very essential in the nursing profession. Finger dexterity is a controlled skill, and it is focused on tasks that require precision. The O’Connor finger dexterity test is an excellent motor skill task that measures finger dexterity and hand–eye coordination.

Previous studies have shown that all available hand dexterity tests measure different hand skills. Some are specific to the skills of the whole arm and hand. Some tests predominantly evaluate finger skills. For finger skills, tests are performed in which a subject can control small objects in a small area. The critical aspect of the finger dexterity concept is the ability to receive small objects, move over a small area, and place them in a specific location.^{3,4}

The O’Connor’s test is frequently used in studies that test hand dexterity.⁵⁻⁷ This test includes the ability to move small objects, to be fast and controlled, to provide hand–eye coordination capability, and to focus on the target.⁸ The O’Connor’s hand dexterity test requires that three pins need to be inserted in each hole. In nursing

vocational training to ensure obtaining adequate skills and to provide quality service to patients, good hand dexterity and good hand–eye coordination are necessary.

In nursing vocational education, equal and common rules and regulations for gaining experience should be established regardless of gender difference.

In developed nations, male nurses comprise 10% of nurses. In many societies, there are many gender-based prejudices against male nurses. In particular, it is essential that male nursing students learn about the contribution of male nurses to nursing history. This also requires the desire of male nursing students.

Male nurses often focus on four points. First, they like to climb steps to be managers. Two-thirds of people in managing positions in nursing profession are males. Second, in clinical practice, male nurses usually cause problems. This is because of their objections to non-nursing tasks that they are forced to perform. Third, men are more ambitious in their field of study and socialize more so that they can be accepted. Lastly, male nurses are expected to perform all heavy duties because of their higher physical capacities. Male nurses do not perform heavy duties more frequently than female nurses.⁹

Male nursing students face more obstacles than female nursing students during their education.¹⁰

METHOD

This study was performed with the undergraduate nursing students from Trakya University after their Obstetrics and Gynecology practice. Approval for this study was obtained from the ethics committee of the Trakya University Medical School (Decision no: 2017.16.09). Written informed consents were obtained from all the participants.

The study included 100 nursing students between May 2017 and December 2018; 74% of

the participants were females and 24% were males. This study aimed to evaluate the effects of gender difference, sociodemographic features, and anthropometric features on hand dexterity and hand–eye coordination using O'Connor's dexterity test.

Students' ages ranged between 18 and 27 years and their mean age was 19.9 years. The socio-demographic features, lifestyle features, and anthropometric features of hand in voluntary undergraduate nursing students were also measured.

This study was planned as a prospective study. To evaluate hand dexterity age, sex, sociodemographic features, anthropometric features of hand and dominant hand were recorded. The study was performed primarily with the dominant hand and then with the other hand. Students who had pain, numbness, limitation of upper extremity movements, history of musculoskeletal trauma in the last 6 months, structural abnormality of upper extremity, acute pain during the study, ocular infection or problems in visual acuity, difficulty in understanding the study, and who did not give consent to the study were excluded.

The O'Connor's test is a valuable hand dexterity measurement tool that has been used in many previous studies. It was developed by Hines Mildred and O'Connor Johnson. They evaluated participants who entered a job that required hand dexterity. The results of their studies showed that those who scored high on the O'Connor's test were more successful at work and had less job drop-out rates.⁸ Previous studies have shown that this test can be used to evaluate motor and cognitive characteristics of athletes. It is recommended among tests which can be used for the decision to continue playing.¹¹

The O'Connor's finger dexterity test was also safely used in dentistry students to evaluate fine motor skills and hand–eye coordination.^{12,13} This test is also used in clinical areas. It was used in studies based on physiotherapy.¹⁴

In this study, O'Connor's finger dexterity test was performed in both hands consecutively in nursing students. The skill in the test is defined as the time required to place three pins in each hole. The time taken to place all pins on the board was recorded for each hand. The results were recorded first from the dominant hand and then from the nondominant hand. The findings were evaluated according to academic success, duration of computer use, school grade, and sex, in particular.

Before the start of the actual O'Connor test, the participants were asked to perform the test with both hands twice to eliminate learning effects. The dominant hand and the non-dominant hand tests were completed when the person started the real test. To decrease bias, each participant was allowed to perform the test in a different order and a balanced distribution was aimed. Male and female nursing students were put in random order, and tests were performed at different times.

The participants were asked to place 300 thin pins that are 1.8 mm thick and 2.5 cm long to 100 holes. The size of the O'Connor test table is 30.5 × 14.5 × 2.2 cm. The distance between the holes was 1.2 cm. The depth of the holes was 1.9 cm, and their width was 0.5 cm. Hand dexterity was compared between the male and female nursing students.

The anthropometric measurements of each participant were taken. Anthropometric measurements in both female and male participants included measurements of hand length, forearm length, palm length, hand circumference, wrist circumference, and wrist width. The forearm length was measured between the olecranon and styloid processes of the radius while the elbow is at 90 degrees flexion. The hand length was measured between the styloid process of the radius and the tip of the middle finger. The wrist width was measured between the radius and the styloid process of the ulna. The palm length was measured between the midpoint of the proximal line

that separates finger root from the palm and the midpoint of the distal line between hand and ankle. The hand circumference was measured at the level of 2nd and 5th metacarpal heads.

Data were analyzed by a statistical software package. SPSS 20.0 Package Program was used for all statistical analyses. The results were tested by a variance analysis. Duration to complete the tests was measured separately. Descriptive statistics for numeric variables were given as mean and standard deviation. Differences between the results of O'Connor's finger dexterity test were evaluated using Student's t-test. Descriptive statistics for categorical variables were given with percentage and frequency. Normal distribution of the data was tested using the Shapiro-Wilk test. Comparisons between the two groups were performed using the Mann-Whitney U test. Comparisons among more than two groups were performed using the Kruskal-Wallis test. Associations between quantitative variables were evaluated using the Spearman's rho correlation coefficient. The significance level for all statistical analyses was accepted to be 5%.

RESULTS

This prospective study included 74 female and 26 male undergraduate nursing students from the Trakya University. The sociodemographic

features of the students were evaluated. The right hand was dominant in 87 students, and the left hand was dominant in 13 students. In the original article, the time to finish the test was started from 5.70 min. There were results above 15 min.⁸ In this study, the fastest of the female nursing students completed the test in 5.62 min and the fastest of the male nursing students completed the test in 6.52 min (Table 1).

Among the participants, 32 students were at 2nd grade, 64 students were at 3rd grade, and 4 students were at 4th grade. No significant difference was detected according to grade in test completion time with dominant hands of female students ($P = 0.092$). The test completion time was also not statistically significantly different in males according to grade ($P = 0.357$).

In this study, the O'Connor's test results obtained from male and female students were evaluated separately while many factors changed. Students who worked or who did not during their vocational training at the high school were also compared. In both males and females, those who had worked previously at a health-care facility completed the test at a shorter time period (Table 2).

Both male and female students finished the hand dexterity test earlier if they were graduated from a health-care vocational high school.

TABLE 1 Comparison of O'Connor's finger dexterity test results between female and male students in this study and in the original study

Distributions for O'Connor's finger dexterity test duration (minutes)	Women frequencies		Men frequencies	
	Our study students	Original data ^a	Our study students	Original data ^a
The fastest time	5.62	5.70	6.52	5.70
25th percentile	6.87	7.10	7.53	7.70
50th percentile	7.44	7.70	8.06	8.30
75th percentile	7.99	8.30	9.38	9.00
The slowest time	10.41	>15	12.62	>15

^aOriginal article by Hines Mildred and O'Connor Johnson.

TABLE 2 Evaluation of the O'Connor's test results according to personal and sociodemographic features

Parameters	Median O'Connor's test duration in females (50th percentile)	P	Median O'Connor's test duration in females (50th percentile)	P
High school				
Health vocational high school	7.48	0.797	7.83	0.205
Other high school	7.34		8.74	
Place of residence				
House	6,87	0.058	8.06	0.465
Dormitory	7.45		8.33	
Grade				
1	7.51	0.092	8.72	0.357
2	7.3268		8.02	
3	7.9830		10.40	
Family income status				
Low	8.48	0.164	7.8614	0.301
Intermediate	7.39		8.6502	
High	7.45		7,3037	
Mother education status				
Secondary school or less	7.37	0.900	8.65	0.929
High school	7.73		7.95	
University	7.48		8.02	
Father education status				
Secondary school or less	7.43	0.938	9.05	0.388
High school	7.42		7.78	
University	7.45		8.02	
Preschool education				
Yes	7.27	0.312	8.02	0.974
No	7.44		8.65	
Family residence				
Urban area	7.42	0.940	7.96	0.505
County	7.55		8.90	
Covering of student's expenses				
With difficulty	7.34	0.408	9.30	0.020*
No problem	7.45		7.84	
Number of siblings				
0-1	7.39	0.616	7.86	0.418
2	7.38		8.07	
>3	7.55		8.77	

*Indicates statistical significance.

No association was detected for paternal or maternal education and hand-dexterity tests of both males and females. However, it was observed that the O'Connor's finger dexterity test duration tended to shorten as the level of father education of the male students increased.

No statistically significant difference could be detected when the students were evaluated according to whether they received preschool education. But those who received preschool education were seen to be faster at the hand dexterity test. Participants whose family lived in rural areas tended to complete O'Connor's test at a longer duration than participants whose family live in urban locations.

Evaluation according to family economic status revealed that male students whose families had better economic conditions completed the test in shorter times.

Comparison according to success in school revealed that successful female students at the school were faster at O'Connor's test, but no such association was observed in males (Table 2).

Comparison of the participants according to the number of siblings did not yield a significant result. Only female students who had two or more siblings tended to have better hand dexterity. Whether the students stay at house or dormitory during their undergraduate education did not cause a difference in the hand dexterity. Male students had better hand dexterity results when their families covered student costs well, but there was no significant difference for females (Table 2).

No association was found between longer times spent on a computer, tablet, and PC and hand dexterity test completion times in both sexes (Table 3).

TABLE 3 Evaluation of the association between some parameters that require hand dexterity and O'Connor's test results of the participants

Parameters and frequencies (50th percentile)	Median O'Connor's test duration for females	P	Median O'Connor's test duration for males	P
Employment in a job that require hand dexterity				
Yes	7.29	0.900	8.06	0.562
No	7.45		8.27	
Hand dexterity				
Moderate	7.35	0.293	8.36	0.657
Good	7.80		7.78	
Duration of PC use				
<1 h	7.42	0.868	8.63	0.110
1-3 h	7.45		7.53	
>3 h	7.39		8.74	
Dominant hand				
Right	7.44	0.411	8.36	0.808
Left	7.99		8.03	
Academic success				
Moderate-good	7.32	0.185	8.02	0.580
Very good	7.55		8.74	

The average O'Connor's hand dexterity test duration of female students was 7.44 min for the dominant hand and 8.34 min for the nondominant hand. Males completed the test in 8.06 min with the dominant hand and in 8.34 min with the nondominant hand. No statistically significant difference was detected.

Students with longer hand and palm lengths had better hand dexterity ($P = 0.020$; $P = 0.02$, respectively). In both the dominant and the non-dominant hands, larger wrist circumference and wrist width were associated with better results in O'Connor's hand dexterity test (Table 4). The larger wrist circumference and wrist width in male students than female students provided an advantage to male nursing students.

The O'Connor's finger dexterity results also demonstrated that gender discrimination in the nursing profession is meaningless concerning dexterity.

DISCUSSION

This study approaches gender discrimination in nursing from a different perspective. Hand-eye coordination and finger dexterity are assessed using the O'Connor's test. The O'Connor's test has been used in several scientific areas.

A previous study has compared the O'Connor test results before and after two different

yoga techniques. There was a significant decrease in the O'Connor's test duration before and after yoga episodes.¹⁵

Studies that evaluated children with attention deficit hyperactivity disorder also used the O'Connor's test. Previous studies have evaluated the relation between anxiety and hand skills in pianists.

In some previous studies, students at higher grades of school were faster at hand dexterity tests because their awareness increased and anxiety about hand dexterity decreased. Encouraging self-confidence and increasing practices will improve hand-eye coordination, visual discrimination ability, and hand dexterity.^{16,17} Previous studies also evaluated hand dexterity of male and female nursing students, and male students were not found to be better.

Previous studies demonstrated that male nurses were careful, attentive, and willing to take care of their patients, but they felt they had to be at the backstage because the occupation is a female-predominant one.¹⁸ They were also careful and attentive during the O'Connor's finger dexterity test.

A previous study compared the performance of the hand dexterity test while wearing different gloves. The performance of the O'Connor's test decreased with some gloves. Another study evaluated the performance of the O'Connor's test while wearing wet gloves, and working with wet gloves was demonstrated to affect hand dexterity. No difference could be found between females and males.^{3,19} Also no difference could be found between males and females in the O'Connor's test durations.

Because of deeply rooted gender expectations in societies, many men cannot plan a career as a nurse.²⁰ The idea that male nursing students and nurses will not have good hand dexterity may break their enthusiasm and distance them from their occupations. This study demonstrated that male nursing students are not less successful than

TABLE 4 Association between anthropometric measures of hand and O'Connor's hand dexterity test

Parameters	P	
	Dominant hand	Nondominant hand
Hand length	0.020*	0.191
Palm length	0.002*	0.237
Hand circumference	0.329	0.344
Wrist circumference	<0.001*	0.001*
Wrist width	0.001*	0.013*

*Indicates statistical significance.

female students in hand–eye coordination and hand dexterity.

Some previous studies showed that male nursing students commonly face social pressures. They stated that they were ashamed of their occupations as nurses and they needed to hide their professions.¹⁸

Male nurses also frequently complain that women are preferred in recruitment in professional life. In some clinical studies, it was stated that male nursing students were frequently given non-nursing tasks and their education was left behind.^{1,18,21}

Male nursing students claim that they face gender discrimination in clinical fields. One of the most common problems of male nursing students in clinics is the frequent use of feminine addressing. Male nurses may lag behind because of prejudices that are faced during recruitment.

One of the problems faced by male nurses is the feeling of isolation in clinics as the number of their role models is small.²² Female and male nursing students should have equal learning opportunities for quality service delivery. Learning opportunities are essential to gain clinical experience.

Caring for patients and making a difference are personal rewards in male nurses that affect their desire to stay in the profession. Recruitment strategies should be introduced at an early age to promote nursing as a non-restricted, viable profession. With training, new generation's perception of a nurse should be normalized.²³

Male nurses working at maternity care and gynecology wards usually face some difficulties.²⁴ Discrimination and prejudice against male nurses are the leading causes of these difficulties.

Clinical trainers; professors at faculty; female nurses working in the field; health-care facility managers; and health-care professionals at prenatal, natal, and postnatal nursing care should help to maintain gender equality. There are several strategies to achieve these goals. One of the most

important tasks is to honor the desire of some women who may be uncomfortable in the presence of a male nurse.

In many societies, women prefer male obstetricians and gynecologists for examination and treatment. It should be ensured that the community also accepts male nurses for gynecology and maternity care.

Maternal mental health is unarguably critical, but it is also important to recognize that the perinatal period is stressful also for fathers.

Although many postpartum studies have largely focused on mothers, there is a growing literature on needs and concerns of fathers at this period.²⁴ This understanding of paternal needs and the concerns during the postpartum period will also contribute to the well-being of mothers and newborns. Male nurses' support for the father and information sharing are expected to be more comfortable.

Research is continuing for prenatal, natal, and postnatal periods. Results show that positive paternal health improves the general health of the family unit and more resources are needed for fathers who demand information.

There is increasing criticism that prenatal, natal, and postnatal services always target mothers although fathers also need help to prepare for parenthood. Recognizing the needs of fathers brings the question about the best source of information for fathers. It is evident that fathers will be more comfortable to get these services from male nurses. However, the increasing number of male nurses in maternal and fetal health-care services will bring its difficulties. From a logistic point of view, the proportion of male nurses vary internationally, but it is generally low.

Given that mental health needs of the mothers are generally provided by women and the women traditionally search it, a question might be how the research will be affected with a more focus on fathers in reproductive health care? Several studies have emphasized that fathers will be

uncomfortable when discussing their concerns with female staff in obstetric wards.²⁵

Insufficient paternal awareness may lead to the neglect of mother and baby. Previous research demonstrated that attention and responsiveness of fathers vary in accordance with the gender of the health-care provider.²⁶

It is important for male nursing students to have clinical learning without having sexual discrimination in order to provide high-quality patient care. Inadequate clinical skills of male nurses may compromise the quality of nursing care given to patients.

CONCLUSION

It is obvious that being a female is not a prerequisite to be successful in nursing profession. The perception that nursing is a feminine profession should be changed. Another advantage of male nurses is their strength which makes them more effective at health-care facilities. This also should not lead to the isolation of male nurses. Male students who choose the nursing profession should be encouraged at universities and clinics. We tried to change the idea that nursing is a feminine profession and males are disadvantaged in this profession. Lack of a difference in hand dexterity measurements may lead to other studies at the field of patient care.

In conclusion, reproductive health and other areas of nursing care should not be seen as the area of a particular gender. Doing so may prevent their career growth and also lead to missing valuable opportunities to gain remarkable perspectives and insights.

There is a need for a wide range of studies to improve the working conditions of male nursing students, to improve their position in nursing care, and to increase their motivation. This study establishes a different point of view to an important problem and may provide insight for larger studies that will be carried out in the future.

CONFLICT OF INTEREST

The authors declare no conflicts of interest with respect to research, authorship and/or publication of this article. No financial support was received to conduct this study.

REFERENCES

1. Ndou NP, Moloko-Phiri SS. Four-year diploma male students' experiences in a profession traditionally perceived as a female domain at a selected public college of nursing in Limpopo, South Africa. *Curationis*. 2018;41(1). <http://dx.doi.org/10.4102/curationis.v41i1.1932>
2. Buthelezi SF, Fakude LP, Martin PD, Daniels FM. Clinical learning experiences of male nursing students in a Bachelor of Nursing programme: Strategies to overcome challenges. *Curationis*. 2015;38(2):1–7. <http://dx.doi.org/10.4102/curationis.v38i2.1517>
3. Gauvin C, Tellier C, Daigle R, Petitjean-Roget T, editors. Evaluation of dexterity tests for gloves. *Proceedings of the 3rd European Conference on Protective Clothing and NOKOBETEF*; 2006.
4. Gallus J, Mathiowetz V. Test–retest reliability of the Purdue Pegboard for persons with multiple sclerosis. *Am J Occup Ther*. 2003;57(1):108–11. <http://dx.doi.org/10.5014/ajot.57.1.108>
5. Yancosek KE, Howell D. A narrative review of dexterity assessments. *J Hand Ther*. 2009;22(3):258–70. <http://dx.doi.org/10.1016/j.jht.2008.11.004>
6. Johnson RF, Sleeper LA, editors. Effects of chemical protective handwear and headgear on manual dexterity. *Proceedings of the Human Factors Society Annual Meeting*; 1986; Sage; Los Angeles, CA. <http://dx.doi.org/10.1177/154193128603001011>
7. Agarwal S, Patel S. Effect of long term smoking on manual dexterity—an observational study on chronic smokers between the ages of 25 to 60 years. *Indian J Appl Res*. 2018;8(6):1121–6.
8. Hines E. A measure of finger dexterity. *Personnel J*. 1926;4:379–82.
9. Simpson R. Masculinity at work: The experiences of men in female dominated occupations. *Work Employ Soc*. 2004;18(2):349–68. <http://dx.doi.org/10.1177/09500172004042773>

10. Bartfay WJ, Bartfay E. Canadian view of men in nursing explored. *Men Nurs.* 2007;2(2):32–7. <http://dx.doi.org/10.1097/01.MIN.0000266940.93559.50>
11. Pearce AJ, Hoy K, Rogers MA, et al. Acute motor, neurocognitive and neurophysiological change following concussion injury in Australian amateur football. A prospective multimodal investigation. *J Sci Med Sport.* 2015;18(5):500–6. <http://dx.doi.org/10.1016/j.jsams.2014.07.010>
12. De Andrés AG, Sánchez E, Hidalgo JJ, et al. Appraisal of psychomotor skills of dental students at University Complutense of Madrid. *Eur J Dent Educ.* 2004;8(1):24–30. <http://dx.doi.org/10.1111/j.1600-0579.2004.00296.x>
13. Lugassy D, Levanon Y, Pilo R, et al. Predicting the clinical performance of dental students with a manual dexterity test. *PLoS One.* 2018;13(3):e0193980. <http://dx.doi.org/10.1371/journal.pone.0193980>
14. Kidgell DJ, Frazer AK, Pearce AJ. The effect of task complexity influencing bilateral transfer. *Int J Exerc Sci.* 2017;10(8):1174–83.
15. Telles S, Singh N, Balkrishna A. Finger dexterity and visual discrimination following two yoga breathing practices. *Int J Yoga.* 2012;5(1):37. <http://dx.doi.org/10.4103/0973-6131.91710>
16. Brossard-Racine M, Majnemer A, Shevell M, et al. Handwriting capacity in children newly diagnosed with attention deficit hyperactivity disorder. *Res Dev Disabil.* 2011;32(6):2927–34. <http://dx.doi.org/10.1016/j.ridd.2011.05.010>
17. Yoshie M, Kudo K, Murakoshi T, et al. Music performance anxiety in skilled pianists: Effects of social-evaluative performance situation on subjective, autonomic, and electromyographic reactions. *Exp Brain Res.* 2009;199(2):117. <http://dx.doi.org/10.1007/s00221-009-1979-y>
18. Wang H, Li X, Hu X, et al. Perceptions of nursing profession and learning experiences of male students in baccalaureate nursing program in Changsha, China. *Nurse Educ Today.* 2011; 31(1):36–42. <http://dx.doi.org/10.1016/j.nedt.2010.03.011>
19. Berger MA, Krul AJ, Daanen HA. Task specificity of finger dexterity tests. *Appl Ergonom.* 2009; 40(1):145–7. <http://dx.doi.org/10.1016/j.apergo.2008.01.014>
20. Ross DJ. Perceptions of men in the nursing profession: Historical and contemporary issues. *Links Health Soc Care.* 2017;2(1):4–20.
21. Yu M, Kang KJ, Yu SJ, et al. Factors affecting retention intention of male nurses working health care institution in Korea. *J Korean Acad Nurs Admin.* 2017;23(3):280–9. <http://dx.doi.org/10.1111/jkana.2017.23.3.280>
22. Mott J, Lee OD. Navigating unfamiliar waters: Men in nursing academia. *J Prof Nurs.* 2018;34(1):42–6. <http://dx.doi.org/10.1016/j.profnurs.2017.07.005>
23. Rajacich D, Kane D, Williston C, et al., editors. If they do call you a nurse, it is always a “male nurse”: Experiences of men in the nursing profession. *Nurs Forum.* 2013;48(1):71–80. <http://dx.doi.org/10.1111/nuf.12008>
24. Newham J, Alderdice F. If gender matters in maternity care, does it matter in maternity care research? *J Reproduc and Infant Physc.* 2017; 35 (3): 209–11.
25. Pilkenton D, Schorn MN. Midwifery. *Men Nurs.* 2008;3(1):29–33. <http://dx.doi.org/10.1097/01.MIN.0000310888.82818.15>
26. Alden KR, Lowdermilk DL, Cashion MC, et al. *Maternity and women’s health care-E-book.* Elsevier Health Sciences; 2013. 888–97. <https://books.google.com.tr/books>