J Minim Invasive Surg Sci. 2017 May; 6(2):e12040. doi: 10.5812/minsurgery.12040.

Published online 2017 May 31. **Research Article**

Challenges in Nursing Care of Morbidly Obese Patients: Nurses' Viewpoints

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Received 2017 March 01; **Revised** 2017 April 10; **Accepted** 2017 May 08.

Abstract

Background: Parallel with the growing obesity problem in the world, the number of obese patients admitted to hospitals is soaring. With the hospitalization of the obese patients, healthcare team faces many challenges. Based on studies in many countries, most of the problems are related to inadequate equipment and space, shortage of nursing staff, high pressure on the staff for transferring patients, which causes physical damage. In this study, we examined problems related to the care of obese patients in Iran from the perspective of personnel in surgical wards and operating rooms.

Methods: This cross-sectional study was conducted in 2015. Data were collected using a three-section researcher-made questionnaire completed by the staff. The first part collected demographic information, while the second part pertained to patient's problems and the challenges that the staff faced regarding equipment and clinical activities. The third part covered personnel's opinion about priorities of care of obese patients. The collected data were analyzed by statistical tests in SPSS software, Chi-square test, fisher exact test and descriptive statistic.

Results: Two hundred people participated (25% male and 75% female) in this study. Regarding the equipment, the biggest challenges for the personnel were related to the lifters and then the clothing and bed sheets. Concerning clinical activities, repositioning the patient (56.1%), transferring between the wards and clinics and changing clothes were the biggest challenges. The participants believe the priorities for obese patient care include employing more staff and supplying equipment.

Conclusions: Taking the increasing number of obese patients in hospitals along with the importance of staff health, and providing appropriate patient care, it is necessary to provide the required equipment for obese patient care and to educate the staff for delivering high-quality care.

Keywords: Obesity, Nursing Care, Nurses, Patients, Equipment, Hospital

1. Background

Obesity is known as the most important, chronic, and recurring disease of the 21st century. It may increase disabilities, deaths, and costs related to the healthcare and treatment. More than 97 million Americans are considered overweight, of which 60 million are considered obese. The healthcare cost for obesity has been estimated 344 billion dollars in the United States (1). Several studies have been performed to investigate the extent of this problem in Iran. Prevalence of obesity in Iranian adult population ($\geq$ 18 years old) has been reported 21.5% and also the obesity was more common in women compared to men (2). Obesity is caused by various factors, including mental health problems, hypothyroidism, genetics, sleep disorders and apnea, steroids, and anti-diabetic medications (3). The obese population has almost doubled over the last three decades. The personnel tries to develop strategies to help them deliver efficient and safe care (1).

Hospitalization of obese patients has faced patients and healthcare team with many challenges (4). Professional healthcare teams should provide patients with optimum care through efficiently communicating with obese patients and addressing their problems (3). The personnel reports recorded in surgical centers which reveal their problems with inappropriate equipment and space, shortage of nursing personnel, high pressure while transferring patients, and incidence of physical injuries (5).

Problems with obese patients in operations include the management of anesthesia, intubation, and also holding the anesthesia mask during operations. The use of laryngeal mask airway is effective in ventilation of obese patients (6). The incidence of complex problems in endotra-

cheal intubation, effective airway management, proper circulation, and many critical practices in urgent conditions has urged nurses all over the world to receive special training on issues related to care of obese patients (7).

An educational objective in training nurses is the management of obese patients, which needs special equipment. The current curriculum does not cover courses on communication skills for care of obese patients (8). Obese patients who candidate for surgical operations should be examined specifically and accurately in terms of underlying diseases, BMI, and the amount of medications, especially for anesthesia, and should receive special care for the respiratory system, skin, and prevention of DVT besides the routine care for necessary surgical operations. The care of obese patients incurs pressure and tension on personnel's body when moving the patients. Therefore, it is a need to prevent damage to healthcare personnel while providing comfort and health to patients. The availability of lifting equipment is the best suggestion for prevention of physical damage to the personnel and risk of patient falls (9).

Obese patients should receive skin care at skin folds, the genital area, etc., which should be cleaned to reduce the risk of infections and bad smells. Despite the healthcare interventions, obese patients suffer various underlying conditions that increase the risk of skin damage and delay healing of surgical wounds. Accordingly, healthcare personnel and patients should be trained for taking measures appropriate for preventing those conditions. It is necessary that the technology of appropriate equipment for the care of obese patients be revised (10).

Although Iran reports the same statistics for the obese population as developed countries, few studies have been performed on the provision of needs for patients and their caregivers, and most of Iran's hospitals are in unfavorable conditions even for the provision of minimum requirements of favorable care services (11). Moreover, the lack of professional courses on the care of obese patients in the nursing curriculum has resulted in personnel's limited knowledge for the provision of favorable physical and mental services to patients. This may in turn increase complications caused by anesthesia, surgical operations, and hospitalization, incur high treatment costs and dissatisfy patients (12). This study was conducted to examine personnel's perspective about the problems with the care of obese patients in surgical wards and operation rooms of hospitals affiliated to Alborz University of Medical Sciences in 2014.

2. Methods

This study is a cross-sectional study that was conducted in the Alborz training hospitals of University of Medical Sciences in 2015. The study samples were selected based on access and the population of the participants in the surgery wards and operating rooms of the participating hospitals. The inclusion criteria were consent form obtaining, working in surgery wards or operating rooms, not being on scholarship, and having at least two years of experience of working in surgery wards. In total, 200 nurses, nurse assists, operating room technician or specialist and anesthesiology technician or specialist are participated here.

Questionnaire were designed based on relevant previous literature. It was developed in three parts: personnel's demographic information, two critical areas of the problem facing the surgical personnel, and the priority of personnel's needs for the provision of favorable services to patients. An open-ended question was asked at the end of the questionnaire in order that the personnel mention items if any recquired question has been ignored in the above parts. Content validity was used to confirm the validity of the questionnaire through the opinions of relevant experienced faculty members, and the content validity index was calculated. The content validity ratio (CVR) for the questionnaire items, evaluated based on ten expert assessors, was 79% (Lawshe model) and the items with smaller CVR were discarded. Moreover, the calculated content validity index (CVI) for the items was 86% which was higher than the least acceptable value of 78% based on Waltz and Bausell method (13). The Cronbach's alpha was calculated as 94% that confirmed the reliability of the questionnaire.

Upon the approval of this study by the university, adoption of permission from the university, and coordination with the hospital authorities, the questionnaires were given to the personnel working in surgical wards and operation rooms. The personnel completed the survey after briefing them and obtaining their consent. Once the questionnaires were completed by the personnel willing to participate in the study, the collected data were entered into SPSS software. The data were analyzed using descriptive statistics, Chi-square and fisher exact test.

3. Results

The surgical ward and operation room personnel participating in this study comprised 200 people (50 male, 150 female). Tables 1 and 2 summarize the demographic data, and the information about the work experience for the participants, respectively.

By the analysis of the relationship between demographic characteristics and the problems raised in three subjects of equipment, clinical measures and priorities suggested by the participants, the following results were obtained. Chi-square test results showed significant relationship between sex and problems with equipment (P =

Table 1. Demographic Data for the Participants in This Study[a]

Demographic Data	Value
Sex	
Male	50 (25)
Female	150 (75)
Material status	
Single	73 (36.5)
Married	127 (63.5)
Education	
Diploma	16 (8)
Technician	32 (16)
BSc	148 (74)
MSc	4 (2)
Vocation	
Nurse	96 (48)
Anesthesia nurse	32 (16)
Surgical thechnolo	56 (28)
Nurse assistant	16 (8)

[a]Values are expressed as No. (%).

0.007), the kind of job and the problems related to equipment (P = 0.011) and working shift and the problems associated with equipment (P = 0.024). Furthermore, based on Chi-square test, a significant relationship was observed between the problems related to clinical measures and job type (P = 0.043), the problems associated with clinical measures and work shift (P = 0.025), and the problems related to clinical practice and sex (P = 0.026). No significant relationship was observed in other investigations.

Tables 3 and 4 recapitulate the participants' perspectives about the problems with the care of obese patients regarding the equipment (Table 3) and clinical practices (Table 4). Moreover, Table 5 presents the priorities reported by the participants for improved care of obese patients.

Regarding the equipment, the most common problem pertained to lifters (43.5%), followed by clothes and bed sheets (34.9%) and sphygmomanometer cuffs (33.3%). Concerning clinical practices, the most frequent problems included moving the patients on beds and between wards (56.1%) and changing clothes and bed sheets (51.8%). The priorities needed by nurses included mostly the supply of enough personnel with the frequency of 45.7% and adequate, appropriate equipment with the frequency of 42.5%.

It should be noted that none of the participants did not answer to third section questionnaire so it was omitted.

4. Discussion

Based on the results of this study, in problems related to equipment, the most reported cases were related to the lifts with 43.5%, followed by clothing and bedding and lack of proper blood pressure cuff, with 34.9% and 33.3%, respectively. In problems related to clinical examinations, the most reported case was patient's repositioning on the bed with 56.1%. After that, transferring between the wards, change of patients' clothes and bed sheets with 51.8% were cases with the most complaints. Similarly, Beitz state that modernization of equipment technology and utilization of appropriate devices should be one the specific objectives of any care plan for obese patients (10). The lack of proper lifting equipment can risk personnel safety during repositioning of patients on the bed and their transporting and between the wards, and in some cases might lead to severe damage to nurses. They also emphasized the supply of suitable equipment and environment, providing training courses on familiarity with obese patients' individual needs for the personnel, and acquisition of skills required for the care of obese patients. Blackett et al., reported provision of occupational safety and health for health personnel, especially nurses, as a significant concern. They also specified that the cost of lifting equipment for hospital wards is insignificant as compared with the expenses related to the loss of trained professional personnel in surgical and special care wards (1). Based on the results of more than 30 years of research, Ann Rose concluded that the physical health is at risk if heavy objects are moved without using appropriate equipment. Therefore, the care of obese patients, especially those who cannot move and who are not able to care for themselves necessitates additional personnel supplied with proper lifting equipment and a standard protocol on the methods of care and use of the equipment. Such facilities are necessary, particularly for tasks such as changing clothes and bed sheets of patients, repositioning, and skin care (14). Moreover, Vieira ER study showed that some health personnel chooses to avoid caring obese patients because they do not want to jeopardize their health. Therefore, suitable equipment should be available for moving and repositioning of patients in wards where obese patients are admitted (15).

In another study which completed in 2009 in Brazil, Sposito Tanaka and coworkers reported the challenges experienced by 70 nurses in recovery and surgery wards, in working with an obese patient who underwent weight loss surgery. Their results showed that the biggest challenges were related to insufficient space in the operating room, inadequate equipment, lack of experience and knowledge by nurses on the physical and psychological needs of obese

Table 2. Information About the Participants' Work Experience of and Their Work Shifts[a]

Work Experience in Perioperative Field, y			Work Experience, y			Work Shifts		
10 <	5 - 10	5 >	10 <	9 - 5	5 >	Rotation	Evening	Morning
54 (27)	32 (16)	114 (57)	84 (42)	34 (17)	82 (41)	158 (79)	3 (1.5)	39 (19.5)

[a]Values are expressed as No. (%).

Table 3. Problems with Care of Obese Patients Regarding the Equipment from the Perspective of Nurses

Row	Item	Frequency of Problem				
		Not at all	Little	Moderate	High	Very high
1	Lifters and aids for lifting patients	5.8	13.6	9.4	27.7	43.5
2	Sphygmomanometers with appropriate cuff size	5.2	9.9	20.8	33.3	30.7
3	Clothes and bed sheets with appropriate size	4.7	10.9	15.6	34.9	33.9
4	Wheelchairs with appropriate size	8.4	14.1	22.5	31.4	23.6
5	Chairs with appropriate size	9.6	12.8	22.9	28.2	26.6
6	Suitable venipuncture tools	7.9	19.4	26.2	21.5	25.1
7	Walkers for overweight people	8.6	12.4	25.8	24.2	29.0
8	Operating tables with appropriate size	9.3	10.4	23.0	27.3	30.1
9	Stretchers with appropriate size	10.0	13.2	18.9	30.0	27.9
10	Bathrooms with appropriate size	10.5	17.9	20.0	26.3	25.3

Table 4. Problems with Care of Obese Patients Regarding Clinical Practices from the Perspective of Nurses

Row	Item	Frequency of Problem				
		Not at all	Little	Moderate	High	Very high
1	Venipuncture and fluid therapy	5.7	11.9	25.8	27.8	28.9
2	Catheterization	8.3	15.5	26.9	28.5	20.7
3	Dressing	8.9	25.0	29.2	17.2	19.8
4	Suturing	9.4	19.4	26.7	24.1	20.4
5	Moving on the bed	1.0	4.1	11.2	27.6	56.1
6	Blood pressure measurement	2.1	12.3	20.5	38.5	26.7
7	Endotracheal intubation	4.5	9.0	17.4	34.8	34.3
8	Intragastric intubation	5.6	14.4	22.2	28.3	29.4
9	Transferring patients between wards	3.1	6.2	9.3	29.5	51.8
10	Changing clothes and bed sheets	3.1	6.2	9.3	29.5	51.8

patients (16).

Singh et al. investigated the views of patients and nurses about the facilities in the emergency department to take care of obese patients. They observed a meaningful correlation between the importance of proper facilities in the perspective of patients and nurses and patient' body mass index (BMI). Moreover, only a small number of nurses had a good knowledge of the appropriate size of bed, closet, and toilet for obese patients. Therefore, they concluded that emergency departments should be equipped with the special facilities and their staff needs to be trained regarding the caring for obese patients (17).

Our analysis shows that from the perspective of nurses the priorities in the care of obese patients include providing sufficient personnel (45.7%) and proper equipment (42.5%) which are consistent with Sposito Tanaka (16), Ann

Table 5. Priorities Reported by Nurses for Improved Care of Obese Patients

Row	Item	At All	Low	Moderate	High	Very High
1	Provision of appropriate and adequate comfort and care equipment	0	5.4	16.1	36.0	42.5
2	Use of experienced personnel for venipuncture, dressing, catheterization, and so forth in these wards instead of interns with little experience	1.1	10.8	19.9	31.2	37.1
3	Training of personnel for evaluation and management of physical problems of obese patients	0.5	7.0	22.6	31.7	38.2
4	Training of personnel for evaluation and management of mental needs of obese patients	0	8.6	23.1	33.9	34.4
5	Supply of enough personnel for providing more care to obese patients	1.1	4.3	18.8	30.1	45.7

Rose (14), and Singh studies (17). As another important priority, the nurses in our study also explicated the importance of specialized training about the characteristics and special care of the obese patients. Likewise, in Rush's study, training of patient and medical team has been listed as one of the most important aspects in the care of obese patients which can reduce the risk of complications (18). In agreement with our results, Sposito Tanaka study also showed that the lack of experience and knowledge of nurses about the physical and psychological needs of obese patients was a significant challenge (16).

4.1. Conclusion

Due to increased number of obese patients who undergo surgery, it seems that health system policy makers and hospital officials should put more emphasis on the safety and health of their employees along with providing the right of safety and health for obese patients. They also need to prioritize the equipping of hospitals with the special equipment for caring for obese patients and recruiting an appropriate number of experienced and well-trained personnel.

4.2. Limitation of Study

Due to the busy schedule of the nurses, they often did not have enough time to complete the questionnaire at the moment we gave it to them. Therefore, some of the questions or different parts of a questionnaire might have been answered in different work shifts and different wards and by more than one nurse. Furthermore, there were some unanswered questions mainly due to the busy schedule and tiredness of the nurses who participated in this study.

Acknowledgments

The authors thank the vice-president for research of the Alborz University of Medical Sciences for financial support. The management of Shahid Bahonar, Kamali, and Shahid Madani medical education centers are acknowledged for executive support. We would also like to thank the nurses who participated in our research. This work would not have been possible without their assistance.

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