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Difficulties and limits of treatment of a patient with obesity

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Складності та обмеження
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Introduction

The treatment of obese patients is associated with various complications, which relate on the one hand to the material and technical equipment of the workplace, on the other hand to staffing. Patient's weight presents a big problem, especially in terms of excessive physical strain for healthcare professionals and also of the resulting risks. Obese and morbidly obese patients are exposed to several risks in healthcare facilities related to their transport, handling, their limited mobility and reduced lung capacity. These aspects significantly reduce the ability of these patients to engage in movement and thus help the healthcare professionals [8]. The nurse is confronted with many difficulties, limitations and problems when treating an obese patient. In many ways the care itself is very demanding. However, it is a patient who also has their bio-psycho-socio-spiritual needs that need to be saturated, so we choose holistic care and an empathic approach. The demanding areas of care for the obese patient in individual nursing approaches in the form of difficult hygiene, patient transfers, positioning and the primary needs management must be all the more balanced by humanity and understanding so to ensure the quality of nursing care.

Limitations of obese patients treatment in individual areas

Positioning, hygiene

Patients with obesity often suffer from skin problems, have an increased risk of developing pressure ulcers, scabies, perianal dermatitis, forearm ulcers and diabetic angiopathy [1]. An increased amount of subcutaneous fat that is poorly supplied with blood impairs wound healing. Common complications include wound infection and wound dehiscence. Some studies describe obesity as a protective factor in the prevention of pressure ulcers, but there is a 1.5-3-fold higher risk of developing pressure ulcers in extremely obese patients than in patients with normal weight [3]. The use of anti-decubitus devices should be a matter of course when treating

an obese patient, but it is always necessary to check the load-bearing capacity of the device. However, anti-decubitus mattresses do not replace patient positioning under any circumstances [9]. The care of the skin of an obese patient is primarily based on the prevention of skin damage and daily assessment of its condition by the nurse. A very effective strategy is positioning, treatment of predilection sites and the use of positioning aids. Examination and monitoring of the skin should include checking the condition of the skin folds, especially under the breasts, in the perianal area and in the folds under the abdomen. In addition to an increased risk of scabies and mycoses, skin folds in an obese patient also present a significant risk of pressure. Closing the capillaries inside the folds with pressure leads to tissue necrosis. Increased attention should be paid to the inserted catheter, monitor cable and drain, which should be placed so that they are not hidden in the folds or do not create pressure on the skin [10]. Impaired skin integrity can also be altered by shear forces when handling the patient. For this reason, it is necessary to use handling aids and to use more personnel when manipulating with the patient. Another limitation in the treatment of an obese patient is the change of bed linen and bed adjustment. The standard width of the bed can be a technical problem, too. In such bed it is not possible to turn the obese patient on their side so as to make the changing of linen easier, and to check and treat the back and the predilection sites of the patient. With the degree of obesity, the tolerance of changing the position also deteriorates, the higher the obesity, the worse the tolerance of the position change [4]. Unsuitable positions include the horizontal and the Trendelenburg positions, which usually lead to breathing problems and circulatory complications. The reverse Trendelenburg and Fowler positions proved to be the most suitable, as they release the pressure of the intra-abdominal contents and facilitate spontaneous breathing and breathing in the patient on artificial lung ventilation [10]. Devices that can make it easier for nurses to handle obese patients include a fabric positioning pad, electric hoist, rollboard, and modern aids include a slide sheet. The most easily available and most frequently used device is the

positioning pad. The pad can be used for rotation, transfer, or for moving the patient on the bed. The slide sheet has a special sliding surface and handles on the sides for better manipulation. The electric hoist is a tool used for hygiene, transfer and for adjusting the bed. Its biggest advantage is the facilitation of the work of the staff, making the transfer more comfortable for them from a physiological point of view. Rollboard is a manipulation device designed for easier transfer of the patient from bed to bed [11]. When planning the handling of an obese patient, factors that affect patient's safety should always be considered. These include, in particular, patient's ability to cooperate, their illness, their ability to carry weight, respiratory function, muscular strength and the availability of aids. An equally important part of safe patient handling is not only communication with the patient, but also communication within the multidisciplinary team [1,12].

Nutrition and defecation

Food (including water) is a primary biological need of a man and is a prerequisite for maintaining health and life. In hospital patients, it is conducted per os, by enteral or parenteral administration. In critically ill patients, it is fully saturated parenterally, later switching to enteral nutrition and then to oral intake. This procedure is the same in patients with normal weight and with obesity. An obese patient has the same metabolic response to stress and disease as a non-obese patient, i.e. they are equally at risk for malnutrition despite their reserve and excess fat [13]. In a critical state, obese patients are not able to mobilize fat stores, therefore weight reduction during a critical state is not beneficial and appropriate nutritional support should not be denied to the patient [10]. Care should be taken to avoid aspiration when administering enteral nutrition by mouth or by a probe. The stomach volume in obese patients is greater than the stomach volume of non-obese individuals. Pressure on the stomach is also exerted due to excessive adipose tissue on the abdomen. An elevated position of the patient can reduce the risk of food return to the esophagus and thus the risk of aspiration is reduced [9,14]. Defecation and urination are also primary human physiological need, and in a patient with obesity, a permanent urinary catheter is often the option in the standard ward. The increased amount of adipose tissue around the thighs and genitals in an obese patient creates the potential for excessive moisture, in the perianal area scabies, mycoses, pressure ulcers and skin defects occur, which also leads to the risk of urinary tract infections. Permanent urinary catheter is therefore important to introduce aseptically, especially in an obese patient this procedure should be performed by 2 or more members of the medical staff. Due to the risks to the patient, checks on the function and position of the catheter and sites around the genitals and in the anal area should be at a higher frequency. The lining of the catheter to prevent bruising and subsequent skin damage should be a matter of course [10]. Equally challenging is the defecation in an obese patient. In most patients, peristalsis is also affected by medications and a reduced locomotor regime, which leads to constipation. As a solution, laxatives are used or a cleansing enema is applied. In obese patients, placing on a basin and the application of a cleansing enema is a demanding procedure and it is necessary

to use not only aids to facilitate the handling of the patient, but also a larger number of staff. On the contrary, with frequent excretion of loose stools, it is recommended to introduce a set for continuous stool drainage, which is a comfortable solution not only for the staff, but also for the patient [10]. Due to chronic constipation and strenuous stool excretion, hemorrhoids also often occur in obese patients. The basic activities of a nurse in supporting the patient's defecation include ensuring sufficient privacy, proposing exercises to support defecation, limiting the patient's flatulence using a rectal tube and administering medication according to the doctor's prescription. In an immobile obese patient, it is necessary to provide the patient with a basin for defecation, which is usually very difficult. Following defecation, it is necessary to implement thorough hygienic care of the patient's genitals, rectum and hands [15].

Examination of an obese patient

When examining an obese patient, certain complications might be expected. When measuring blood pressure non-invasively, it can be difficult to find a suitable cuff width. If the cuff is too small, the measured values are distorted. There are different cuff widths on the market, but the problem is that not every medical facility has them available. The use of an elongated cuff that does not have a corresponding length of inflatable section also leads to inaccurate measurement of blood pressure values. An alternative is to use a thigh cuff on the patient's arm. Sometimes, however, this cuff extends beyond the forearms due to its width. However, the results of a study comparing the values measured with the optimal size cuff with the values measured with the thigh or elongated cuff showed relatively large differences in the measured blood pressure. When using an extended cuff, the blood pressure is higher than it actually is. The best solution if a suitable cuff is not available is to measure the pressure on the patient's forearm, with the patient positioned so that the forearm is at heart level [2]. In obese patients, another complication from the point of view of the nursing approach is the im/possibility of identifying and injecting vascular access. The venous system of an obese person is deep under the layer of fat. The angle and depth of the injection must be adjusted to the changed anatomical ratio. It is possible to use sonographic control for cannulation, which increases the success of the procedure and also minimizes the risk of complications. In hospitalized obese patients, the insertion of a central venous catheter is becoming more common [1,3]. One of the problem areas in an obese patient is finding a suitable vein to insert the peripheral venous catheter. In obese patients, the veins are faint and invisible. Therefore, for better visibility, the nurse can use an arm massage or apply a warm compress or lower the patient's arm by the edge of the bed. If it is necessary to collect venous blood, it is possible to change the vacuum system for a disposable syringe and needle. When using a syringe with needle, it is necessary to handle the syringe plunger slowly due to the threat of hemolysis and trauma to the vessel wall [16]. It is also difficult to perform a physical examination. The auscultation of the patient must be performed by firmly pressing the stethoscope onto the desired area. If there are skin folds at the auscultation site, the assistance of another person

is required. Auscultation of the bowel sounds is also hampered by a large amount of subcutaneous fat. It is often impossible to examine the peristalsis of an obese patient. An evaluation of the electrocardiogram can also be difficult, because the recording is distorted by the more difficult penetration of voltage through the subcutaneous fat. Thus, the record shows low voltage complexes [3]. Also, examination of edema, jugular vein and anasarca is often poorly distinguishable. The measurements of pulse oximetry – oxygen level of the blood – may give inaccurate values, and cyanosis may not be easily distinguishable in an obese patient [1].

Respiratory problems associated with obesity

Another problem in the handling and positioning of an obese patient is the fact that changes in the body in connection with the enlargement of adipose tissue have a negative effect on individual organs of the human body. Adipose tissue accumulating in the abdomen and diaphragm areas compresses the lungs and significantly reduces lung compliance. In the sitting position, most patients are compensated, problems occur when changing it to the position on the back [17]. A study by Phillips [1] on a sample of 1795 patients hospitalized in intensive care units showed an increased risk of developing respiratory distress syndrome in obese patients when a change of position is required. In addition, metabolically active adipose tissue increases oxygen consumption. Oxygen requirements of a body can reach up to four times that of a non-obese person [1]. Further studies on the positioning of obese patients have shown that the Trendelenburg position significantly reduces the partial pressure of oxygen in the blood, not only in morbid obesity, but even in overweight patients. If it is necessary to place the patient in this position, for example during an examination or insertion of a central venous catheter, staff should always have airway and resuscitation equipment ready. In obese patients with heart failure, cardiac arrest can occur even in a horizontal position on the back [1,17].

How to eliminate limitations in the treatment of obese patients?

A study by Jamadarkhana et al. [3] have shown that nurses are aware of the risks involved in handling an obese patient and declare that in addition to material equipment, sufficient personnel conditions are necessary to ensure safety when handling an obese patient. They also mentioned the need for precise handling protocols, which will be mastered and followed by all healthcare professionals treating obese patients. The authors also state that these measures facilitate

the communication within the team and improve the communication in risky situations. Regular retraining of staff on limits and also on the use of devices reduces the risk of injury on both sides, of the patients as well as of the healthcare professionals.

From abroad, an effort to minimize manual lifting of the patient is preferred. It is recommended to use ceiling lifting devices or mobile lifting devices that belong to the common equipment of medical facilities. In addition to providing greater patient safety, they also reduce the risk of injury of the personnel [18].

One of the approaches should be to place more emphasis on educating health professionals in the treatment of obese patients, as pointed out by various authors [19, 20]. Obesity is a distinct disease with its own specifics, and it is for these reasons that nursing students need to be educated in the issue, as according to Mangold and Markiewicz [19] students themselves declare a lack of this information. Authors Hansson et al. [21]. A research among nursing students at the University of Manchester has shown that students are aware of the lack of knowledge they could use in caring for an obese patient. Students perceived an increase in the responsibility placed on them, they were often in doubt as to whether they had sufficient erudition and communication skills to treat obese patients. They also lacked practical training in nursing care for obese patients (20). Arizona State University provides simulated nursing care to teach students, with an emphasis on safe and empathic treatment and a holistic approach to obese patients. The simulation training program was based on evidence-based practice. Students learned to recognize nursing diagnoses and plan nursing care for an obese patient. Students who completed this course felt more competent to perform nursing care for an obese patient [19]. Following gradual steps, starting with teaching students about the treatment of obese patients, with accessibility to appropriate technical, material and personnel conditions, it is possible to achieve effective, good-quality and safe nursing care for obese patients in practice.

Conclusions

As part of nursing care, the treatment of an obese patient involves many challenging situations, especially related to staffing and material and technical equipment. The nurse is confronted with many problems when treating an obese patient. Limitations in treatment occur especially in the areas of hygiene, positioning, transport, examination, defecation and urination. For these reasons, nursing care should be all the more balanced by empathy, humanity, understanding and by respecting the principles of holism [22].

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Aim: the paper provides an insight into the specifics, complexity and limitations of treating obese patients in the practice of a nurse.

Methods. The work is a result of summarizing a literature review on the issue.

Results. The most common complications in the treatment of obese patients include access, identification and puncture of vascular access; in non-invasive blood pressure measurement, it may be difficult to find a suitable cuff width. In the nursing care of an obese patient, electrocardiogram evaluation is also a challenge, as it is often distorted by the difficult penetration of tension through subcutaneous fat. The standard width of a bed preventing positioning and adequate hygienic care may present another technical problem. Obesity increases probability of poorer hygiene, which may be associated with a worse level of bandaging and increased risk of infection and pressure ulcers.

Conclusions. LeeFong and Rose et al. emphasize that staffing of the workplace is important for the safety of both, the personnel and the obese patient. Jamadarkhana, et al. authors emphasize the need for proper equipment of medical facilities. Based on the elaboration of a literature review, we are entitled to state that it is necessary to improve the conditions for effective provision of nursing care to obese patients by providing better conditions in the technical, material and personnel area, not only in terms of safety of these patients, but also for protection of the health professionals. It is desirable to address this issue to nursing students already during the undergraduate education, so that they come to practice prepared.

Key words: obesity, patient, nurse, nursing care.

Мета: в статті автори дають уявлення про специфіку, складності та обмеження лікування пацієнтів з ожирінням в практиці медсестри.

Методи. Робота є результатом узагальнення огляду літератури з цього питання.

Результати. Найбільш поширені ускладнення при лікуванні пацієнтів з ожирінням включають доступ, ідентифікацію та забезпечення судинного доступу. При неінвазивному вимірі артеріального тиску може бути важко знайти підходящу ширину манжети. У догляді у пацієнтів з ожирінням, оцінка електрокардіограми також є проблемою, оскільки вона часто викривлена складним проникненням напруги через підшкірний жир. Стандартна ширина ліжка заважає позиціонування і адекватній гігієнічній допомозі, може створити іншу технічну проблему. Ожиріння збільшує ймовірність погіршення гігієни, яка може бути пов'язана з гіршим рівнем перев'язки і підвищеним ризиком інфікування і трофічних виразок.

Висновки. Leefong і Rose et al. підкреслив, що персонал на робочому місці важливий для безпеки як персоналу, так і пацієнта з ожирінням. Jamadarkhana, et al. наголошують на необхідності належного обладнання медичних установ. Грунтуючись на розробці огляду літератури, ми маємо право на твердження, що необхідно поліпшити умови для ефективного забезпечення догляду за пацієнтами з ожирінням, надаючи кращі умови в технічному, матеріальному і кадровому забезпеченні, не тільки з точки зору безпеки цих пацієнтів, а й для захисту медичних працівників. Бажано вирішити цю проблему для студентів вже під час навчання в бакалавраті, щоб вони приходили на практику підготовленими.

Ключові слова: ожиріння, пацієнт, медсестра, догляд за хворими.

Цель: в статье авторы дают представление о специфике, сложности и ограничениях лечения пациентов с ожирением в практике медсестры.

Методы. Работа является результатом обобщения обзора литературы по этому вопросу.

Результаты. наиболее распространенные осложнения при лечении пациентов с ожирением включают доступ, идентификацию и прокол сосудистого доступа; При неинвазивном измерении артериального давления может быть трудно найти подходящую ширину манжеты. В уходе у пациентов с ожирением, оценка электрокардиограммы также является проблемой, поскольку она часто искажена сложным проникновением напряжения через подкожный жир. Стандартная ширина кровати, предотвращает позиционирование и адекватную гигиеническую помощь, может представить другую техническую проблему. Ожирение увеличивает вероятность ухудшения гигиены, которая может быть связана с худшим уровнем перевязки и повышенным риском инфицирования и трофических язв.

Выводы. Leefong и Rose et al. подчеркнул, что персонал на рабочем месте важен для безопасности как персонала, так и пациента с ожирением. Jamadarkhana, et al. подчеркивают необходимость надлежащего оборудования медицинских учреждений. Основываясь на разработке обзора литературы, мы имеем право на утверждение, что необходимо улучшить условия для эффективного обеспечения ухода за пациентами с ожирением, предоставляя лучшие условия в техническом, материальном и кадровом обеспечении, не только с точки зрения безопасности этих пациентов, но и для защиты медицинских работников. Желательно решить эту проблему для студентов уже во время обучения в бакалаврате, чтобы они приходили на практику подготовленными.

Ключевые слова: ожирение, пациент, медсестра, уход за больными.

Конфлікт інтересів: відсутній.

Conflicts of interest: absent.

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