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INTRAMUSCULAR INJECTIONS IN THE VENTROGLUTEAL REGION: NURSING PRACTICE AFTER CONVERGENT CARE RESEARCH

INJEÇÕES INTRAMUSCULARES NA REGIÃO VENTROGLÚTEA: PRÁTICA DA ENFERMAGEM APÓS PESQUISA CONVERGENTE ASSISTENCIAL

INYECCIONES INTRAMUSCULARES EN LA REGIÓN VENTROGLÚTEO: LA PRÁCTICA DE ENFERMERÍA DESPUÉS DE UNA INVESTIGACIÓN CONVERGENTE ASISTENCIAL

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ABSTRACT

Objective: to present to nursing professionals the ventrogluteal region for the application of intramuscular drugs. ***Method:*** field study, care convergent, of qualitative research, conducted at two small-sized hospitals. Data collection was carried out in three stages: participant observation, permanent education workshops and interviews, and the interpretation and analysis were carried out at the same time of the collection, following the phases proposed by the method. ***Results:*** information initially revealed preference to the dorsogluteal region. However, after the survey, subjects were unanimous to indicate the ventrogluteal region as their first choice to administer intramuscular drugs. In addition, there was an increase in theoretical and practical knowledge, which allowed the professionals to describe the technique of geometric delimitation of the ventrogluteal region in a correct way, highlighting the advantages and anatomical characteristics of the place. ***Conclusion:*** this study approached assistance and research, and stimulated changes in the contexts of nursing performance. ***Descriptors:*** Intramuscular Injections; Nursing; Ongoing Education.

RESUMO

Objetivo: apresentar aos profissionais de enfermagem a região ventroglútea para a aplicação de medicamentos intramusculares. ***Método:*** estudo de campo, convergente assistencial, de pesquisa de abordagem qualitativa, realizada em dois hospitais de pequeno porte. A coleta de dados foi realizada em três etapas: observação participante, oficinas de educação permanente e entrevistas, sendo a interpretação e análise realizadas simultaneamente a coleta, seguindo as fases propostas pelo método. ***Resultados:*** informações revelaram inicialmente preferência à região dorsoglútea. Contudo, após a pesquisa, os sujeitos foram unânimes ao indicar a região ventroglútea como primeira escolha para administração de medicamentos intramusculares. Além disso, houve um acréscimo de conhecimentos teóricos e práticos, o que permitiu aos profissionais descrever a técnica de delimitação geométrica da região ventroglútea de forma correta, ressaltando as vantagens e características anatômicas do local. ***Conclusão:*** esse estudo aproximou assistência e pesquisa, e estimulou mudanças nos contextos de atuação da enfermagem. ***Descritores:*** Injeções Intramusculares; Enfermagem; Educação Continuada.

RESUMEN

Objetivo: presentar a los profesionales de enfermería la región ventroglúteo para la aplicación de medicamentos por vía intramuscular. ***Método:*** estudio de campo, convergente asistencial, de investigación cualitativa, llevada a cabo en dos hospitales pequeños. La recolección de datos se llevó a cabo en tres etapas: observación del participante, talleres de educación continua y entrevistas, y la interpretación y el análisis fueron realizados simultáneamente a la recogida, siguiendo los pasos propuestos por el método. ***Resultados:*** informaciones revelaron preferencia inicial a la región dorsoglútea. Sin embargo, después del estudio, los sujetos fueron unánimes en señalar la región glúteo como la primera opción para la administración de medicamentos por vía intramuscular. Además, hubo un aumento de los conocimientos teóricos y prácticos, lo que permitió a los profesionales describieren la técnica de delimitación geométrica de la región ventroglúteo correctamente, señalando las ventajas y las características anatómicas del sitio. ***Conclusión:*** este estudio aproximó la asistencia y la investigación, y animó a los cambios en contextos de la práctica de enfermería. ***Descriptores:*** Inyecciones Intramusculares; Enfermería; Educación Continua.

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INTRODUCTION

Knowledge of the specificities of a drug's administration site, evaluating its advantages and disadvantages, is a relevant condition in the clinical practice of health professionals.[1] In that context, the medication administration is the nurse's responsibility and attribution, in addition, since the nurse stays with patients most of his/her time, it allows monitoring the effects and adverse reactions of the drugs. Therefore, those professionals need to have extensive knowledge of pharmacodynamics, pharmacokinetics, growth, development, anatomy and human physiology, nutrition and mathematics.[1]

The intramuscular (IM) route, the focus of this investigation, has an immediate action from aqueous solutions with slow and persistent action from solutions of prolonged release, besides being suitable for moderate volumes, oily medications and some irritants. Nevertheless, there is contraindication of that route during the use of anticoagulants, besides having a specific indication for certain injectable. Thus, it is relevant to evaluate the patient's nutritional status, for the proper choice of the muscle.[2]

The health team, especially the nursing team, should know and respect IM medication administration techniques, as well as the most appropriate sites to reduce complications. It is an invasive procedure, there are several aspects to be evaluated, such as: the type and the irritability of the drug, the thickness of the adipose tissue, the size and the length of the needle, the compatibility between the muscular structure and the volume of medication to be applied.[3]

The selection of the areas to administer IM drugs should preferably follow the sequence: ventrogluteal (VG), dorsoglutea (DG), anterolateral thigh face (ALTF) and finally, deltoid.[4] In that dimension, the VG region, proposed in 1954 by Von Hochstetter and his team, is considered the safest for IM application due to its particularities: greater thickness of the muscular wombs, free space of vessels and important nerves, both in adults and children, smaller thickness of subcutaneous tissue, easy access, both in a ventral, dorsal or lateral decubitus, in addition to being limited by palpable bone structures and the epidermis has a lower concentration of anaerobic pathogenic germs when compared to dorsogluteal.[4]

A recent study, focused on investigating the utilization rates of the VG region for IM administration by nursing professionals at hospitals in the northern region of the State of Rio Grande do Sul (RS), identified that 32.4% of the participating professionals know the technique of IM application in the VG region, while 66.2% were unaware of it and 1.4% did not respond to the questioning. The same study revealed that, in relation to IM injection in the VG region, only 5.9% of professionals usually apply at that location, but most of them, 57.3% do not use that technique, and another 36.8% did not respond to the question. It reveals the lack of knowledge of the VG injection technique and its applicability, which, even indicated as first choice, is little used.[5]

The aforementioned data based and served as justification for the accomplishment of this research, whose objective is to present to the nursing professionals the ventrogluteal region for the application of intramuscular drugs.

METHOD

Field study, convergent care, of qualitative approach. Qualitative research analyzes the human expressions present in the relationships, in the subjects and in the representations.[6] In turn, the convergent care research (CCR) characterizes by assistance actions gradually incorporated in the process of research and vice versa, that is, it requires the active participation of the research subjects and is oriented towards the resolution or minimization of problems in practice or to provide changes and/or introduction of innovations in health processes. In it, the researcher commits him/herself with the construction of a new knowledge for the renovation of the care practices in the studied field.[7]

The path of the CCR should contain four steps in its research process, namely: design, instrumentation, research and analysis. In the first phase, one determines the subject, the research question, the purposes, the objectives, the literature review, the introduction and the justification.[7] The choice of the place of research, the participants, the methods and techniques to obtain the information is performed during the instrumentation phase, being, in this study, two small hospitals in the northern region of the state of RS as investigation site, and nursing professionals (nurses, technicians and assistants) as the subject. In the research phase, especially the interviews and participant observation, which value listening to the other with sensitivity, configure strategies to obtain data. In turn, the process of information analysis consisted of four phases: apprehension, synthesis, theorization and transference, as the method predicts,

being the results grouped into categories for better discussion.[7]

In this sense, in order to satisfactorily contemplate the CCR phases established by the pioneer researchers of the methodology[7], the work was structured in three stages. In the first stage, the professionals were clarified about the purpose and method of the study and invited to participate by signing the Informed Consent Form (ICF), thus constituting a group of 22 subjects. Among the 14 professionals from hospital A, eight were observed in the diurnal period and six, in the nocturnal period; and, among the eight professionals from Hospital B, six were observed in the daytime period and two, at night. They were all observed in a participant manner, during three shifts of six hours of work. At this stage, the researchers remained nine shifts in each hospital, being three in the morning, three in the afternoon and three in the evening, accompanying professionals from all sectors and units, regarding the application of IM medications. The information that emerged from those observations was recorded in a field diary.

The second stage characterized by three permanent health education (PHE) workshops with professionals. The PHE is a strategy to transform the professional action, which can occur through the articulation between theory and practice between the subjects-workers, associated with the institutional policy of where they work.[8] The workshops were carried out concomitantly with the first stage, in a group with the different categories of nursing according to the availability of subjects' schedules, and the focus of the discussions dealt with the anatomy and physiology of the VG region, its innervation and vascularization, the advantages, the geometric delimitation through the Hochstetter technique and practices associated with the procedure with the supervision of researchers.

The third and last stage focused on finalizing the data collection and was carried out after the permanent education workshops, when the researchers intentionally stayed a few days away from the hospitals and, after that period, they returned to perform three shifts (one in the morning, one in the afternoon and one in the evening) of participant observation, in addition to individually interviewing professionals. In that phase, all the study subjects were observed in their professional practice related to IM medication administration and interviewed, using a semi-structured guide. The interviews were recorded and fully transcribed, maintaining the anonymity of the subjects, who were identified by the letter 'P' for the word 'professional' and the corresponding arabic numbering.

This study was approved by the Research Ethics Committee of the Federal University of Santa Maria, with the opinion 351.924 of July 15, 2013. It also supported the guidelines and provisions of Resolution 466 of December 12, 2012 of the Council National Health[9], which describes the guidelines and norms that regulate the investigation processes involving human beings in Brazil.

RESULTS AND DISCUSSION

The hospitals, the focus of the research, are small, located in cities in the northern interior of the state of RS. Hospital A has 37 beds, being 18 allocated to the mental health department and 19, to the medical clinic. The nursing team has three nurses and 14 nursing technicians, totaling 17 professionals. Hospital B has 53 beds, with obstetrical and gynecological services, medical clinic, surgical and pediatric clinic. The nursing team of that institution consists of three nurses, 11 nursing technicians and three nursing assistants, with 17 professionals.

The municipality A has 4,098 inhabitants and a geographical area of 128 km² and the municipality B has 10,897 inhabitants and area of 301 Km².[10]

As for the subjects, 22 professionals participated in the study: 14 (63.64%) from hospital A and eight (36.36%) from hospital B. Of the total, 19 (86.36%) were women and three (13.64%), men. Four (18.18%) are nurses, 17 (77.27%) are nursing technicians and one (4.55%) is nursing assistant. The total range of subjects' ages ranged from 22 to 54 years and the period of health care ranged from six months to 34 years.

♦ Addiction to the dorsogluteal region as first choice

The administration of IM medications is a complex procedure that requires clinical attention and knowledge of nursing.[11] In the context of the IM medication application, the VG region is considered scientifically the most indicated.[4] However, it is minimally used, as identified in studies carried out in the states of São Paulo[3-4,12] and RS.[5] In addition to that data, another study revealed that nurses, in their practice, continue to use and multiply teaching to nursing students to apply IM injection in the DG region as first-choice place, even after numerous evidences about the complications associated to the use of that region. The adherence to the VG region

becomes a challenge, mainly due to the lack of nurses with greater theoretical and practical mastery to manipulate that anatomical site.[13]

At this moment, it is important to point out that, according to the observation made by the researchers in the first stage of the study, before the accomplishment of this CCR, all the participants used the dorsogluteal region, denominated popularly like buttock, for the administration of IM drugs. The following statements also evidence that fact:

> *[...] more indicated in the gluteus, in the superior external quadrant. Because it was the technique that we learned in the course that I attended in 2002 (P2).*
>
> *In the buttock. Because we always did there, it seemed more practical. In my training, I learned it in the buttock and, regarding the ventrogluteal region, they only mentioned it in the classroom, but we have never done it, in order to put into practice (P8).*

From the observation, the permanent education workshops and the verbal expressions selected and transcribed above, subjects generally did not know the VG region and, if they knew it, it was only the name without further information about the advantages, characteristics of the region and technique of Hochstetter. Thus, the application of IM drugs in the gluteal region with predominance of the buttock is visible in all the interviewees' speeches. It indicates the difficulty of transformation and suggests a more theoretical and practical approach in the contents of educational institutions, requiring professors to practice the VG application technique, because it is more effective and safer.

Comparing moments that preceded and after the completion of this study, relevant information was obtained in the researched care contexts, because, after the completion of this CCR, 100% of the subjects reported adherence or attempted to adhere to the VG region, elucidated by the researchers at the observation stage and by the professionals' statements:

> *I am directly using the VG region because I did a test asking the patient whether it was more comfortable or not, explaining all those benefits that you taught me. And they loved it, they say it's a lot less painful (P8).*
>
> *I am using only the VG region, because I found it better, I found it easier, faster, and you do not have to turn the patient (P10).*
>
> *Ventrogluteal, all VG practically (P22).*

With the use of that convergent care methodology, one can perceive its significant potential to change and transform in the spaces of nursing performance. In a survey conducted in 2012 at three hospitals in the northern region of the state of Rio Grande do Sul, with 68 subjects, only one described the technique of geometric delimitation of the VG region, that is, the Hoschestetter technique, correctly.[5] As a parameter, there was the following guide: "The area is demarcated by placing the dominant hand palm over the major trochanter of the femur and the index finger on the anterior superior iliac spine, pushing the middle finger as far as possible along the iliac crest, forming a triangle between those two fingers. The injection site is the barycenter of this triangle formed by the index and middle fingers and the iliac crest".[2:182]

Thus, comparing another study carried out in the northern region of RS[5] with the current one, after conducting the present investigation, all 22 interviewees correctly described, using simple words, the location of the triangle of VG application, which can be seen in the following lines:

> *The trochanter is located first, after the iliac crest, with the hand up, the thumb in front of the person, between the middle fingers and the index finger is the correct region of the application. You apply it in the center, or near the center (P3).*
>
> *First, we find the bigger trochanter, then you will put the palm of your hand on the larger trochanter, then you will find the iliac crest, the beginning of the iliac crest, will delimit it with the index finger, open the middle finger and apply in the middle (P18).*

Moreover, the researchers prove those expressions during the periods of participant observation in the third stage of this study.

In this line of discussion, a study on the frequency of intramuscular injections in the VG region aimed to have that region used more frequently by the nursing team after a training workshop, resulting in an important change in care practice and an improvement in the quality of care provided to patients.[3] Nevertheless, that premise did not materialize, because the results showed that the VG region is little used by the team, even after they participated in the training workshop. One of the reasons given for the non-choice of the VG region was the ease of access of the DG region, evidencing that nursing professionals do not seem to consider patient safety in the execution of the procedure.[3] This latter information also emerged in the current study; however, there is scientific evidence of the advantages of the VG region since the 1950s.[14] Those data allow

reflecting that there is a theoretical and practical deficit in the contextualization of the VG region in graduate and technical courses that do not sufficiently train their students to use that site as the first choice to administer IM drugs.

A study, which aimed to identify the frequency of intramuscular injections in the VG region administered by nursing professionals, before and after the training workshop, revealed that, prior to the training, among the 525 administered injections, 99% were performed in the DG region, and there was no application in the VG region. After training, in a contingent of 448 injections, 93.3% continued to apply in the DG region, and 5.1% started to use the VG region. However, it indicates that the use of the DG region is still more usual than the VG region.[3] Comparing the results of that publication with those of the present research, the CCR approach was more resolvable, since, initially, there was a similar VG situation, but, after the research stages, there were positive data regarding adherence to the GV region, stimulating a change in the cultural context that implies the application of IM medications.

The field research, more specifically the CCR, allows, in addition to data collection, intervening in partnership with services and professionals, adding reflections and possible changes in work processes, qualifying the provided assistance and increasing the satisfaction of professionals and patients.

♦ Inclusion of the ventrogluteal region in clinical practice: what nursing professionals say

When administering an injectable in the muscular womb, the nursing professional needs to take care of the anatomical variations, such as: biotype, age, sex, race and local conditions (shape, length, width, thickness and disposition of muscle fibers).[15] Regarding the search for alternatives to eliminate complications related to the use of the gluteus maximus muscle, in the IM application, Von Hochstetter identified and verified that the GV region is the place that offers the lowest risk to the patient.[14] The author also states that there were reports of tissue necrosis lesions, muscle contractures, fibrosis and even loss of joint movements in adults and children who took IM medication, common occurrences when using the deltoid, gluteus maximus, and vastus lateralis muscles of the thigh.

In this approach, administering a medication seems to be a simple task for nursing professionals; however, there are several factors intrinsic to the application of an IM drug, such as the adequate explanation to the patient, the choice of the most appropriate place, the knowledge of the risks and benefits of such muscle and the adverse reactions after the application.[16]

Therefore, researchers have identified that nursing professionals generally do not use the GV region to administer medications and 67.16% reported not knowing about their geometric delimitation.[5] Data from another study[3] corroborate that same result and the evidences from this CCR, since they show that the IM administration in the GV region is new for the interviewed individuals and, therefore, they do not know the real importance of that place to administer medicines.

In view of the above, the low adherence to the VG region is justified by the lack of specific knowledge of the place, causing insecurity and difficulty to abandon traditional regions and incorporate new techniques.[3] In this line, researchers[17:381] confirm that CCR focus on "the creative synthesis of an associative process of the research approach and nursing practice developed in the character of simultaneity". Furthermore, research showed that nursing professionals should be researchers of their daily care actions, because, in that way, the instruments of study are useful both for the research as for the care.[18] Regarding the authors mentioned above, this CCR also confirms how lapsing care problems through research instruments is relevant and decisive, because, in this case, almost all the professionals adhered to the VG region, with a theoretical-practical basis and satisfaction using the Hochstetter technique. Such statements can be confirmed by the expressions:

> *The most difficult thing at the beginning is insecurity, but I think that, because of easeness, the ventrogluteal region is much more accessible, so for us who work with bedridden patients, it becomes much easier because it does not need to change the patient's position (P14).*
>
> *[...] look at the many things you have said, the nerves are deeper, it does not bleed, it is less painful, it does not develop a swelling problem... I was very happy because it is another option that I did not know (P15).*

When narrowing the discussions of this last thematic axis, with the perspective of concluding them, there are good results, which have potentiated changes in the work processes of the nursing teams surveyed. Those changes in attitudes were also observable by the researchers during the

participant observation. In this perspective, the theoretical approaches of the workshops added knowledge to the professionals, which allow discerning and basing patients the reason to use the VG region:

> *[...] one of the advantages that I loved is the possibility of doing it in any position. This is great because you do not have to keep turning the patient (P1).*
>
> *[...] less painful site, easy access in bedridden or injured patients and lower risk of injury, even in children (P3).*
>
> *[...] there is no risk of sciatic nerve, less risk of contamination, since it is further from the buttock (P7).*
>
> *[...] it is to be less painful, it is more difficult to injure a nerve, comfort for the patient and for professional (P20).*

Based on the reflections, this research approached theory and practice in the nursing care work process, allowing an experience with unique results, because the CCR guides the researcher, improving knowledge regarding the environment in which the study is developed,[19] "therefore, this type of research is committed to the direct improvement of the social context researched".[20:26] In addition, the convergent care methodology improves the work spaces, qualifies and innovates the contexts of nursing insertion.[21] Corroborating, authors affirm that it is necessary to invest in permanent education in the field of administration of IM medicines in the VG region, with the purpose of stimulating theoretical appropriation to increase the use and applicability of that place, potentializing the transformation of care practice and qualifying care in the perspective of completeness.[22] Thus, researching, innovating, discussing and adding new technologies to the professionals inserted in the network is a culturally challenging task, but rewarding, because it allows following the evolution, being jointly responsible for the training process and seeing after days, months or years, changes being implemented.

CONCLUSION

The investigation showed, in previous phase, the attachment to traditional sites for the application of medicines via IM, such as the DG region, but, in a moment after the CCR, the respondents were unanimous to indicate the GV region, which allows concluding that the used method introduced behaviors assimilated by nursing professionals regarding advances related to the VG region, demonstrating that the proposed goal was achieved.

Moreover, research has essentially contributed to the construction of knowledge and sought to strengthen such activity, which enriches not only academic learning, but also what researchers can offer to society, allowing minimizing the practical gaps through the discussion and diffusion of scientific knowledge.

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