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ORIGINAL ARTICLE

AMPUTATION SURGERIES PERFORMED IN PUBLIC HOSPITALS OF REFERENCE CIRURGIAS DE AMPUTAÇÃO REALIZADAS EM HOSPITAIS PÚBLICOS DE REFERÊNCIA CIRUGÍAS DE AMPUTACIÓN REALIZADAS EN HOSPITALES PÚBLICOS DE REFERENCIA

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ABSTRACT

Objective: characterizing the amputation surgeries in limbs, except ends, carried out in public hospitals of reference, between 2008 and 2010. **Method:** this is a quantitative study with a sample determined by amputation surgery reports conducted; the statistical analysis was performed by SEstatNET. The research project was approved by the Research Ethics Committee, Opinion n° 95.521. **Results:** it is emphasized that men are the majority and the same are younger than the women. External causes were one of the reasons related to amputation and affect young adults and, as age increases, the greater is the relation to chronic degenerative diseases. **Conclusion:** there must be actions that promote health that reduce the rate of these diseases; however the effectiveness of public policies involved in decreasing the rates of risk factors amputation is needed. **Descriptors:** Amputation; People with Disabilities; Health Personnel.

RESUMO

Objetivo: caracterizar as cirurgias de amputação em membros, exceto extremidades, realizadas em hospitais públicos de referência, entre 2008 e 2010. **Método:** estudo quantitativo com amostra determinada pelos relatórios de cirurgias de amputação realizadas; a análise estatística foi realizada pelo SEstatNET. O projeto de pesquisa teve a aprovação pelo Comitê de Ética em Pesquisa, parecer n° 95.521. **Resultados:** destaca-se que os homens são a maioria e os mesmos são mais jovens que as mulheres. As causas externas foram um dos motivos relacionados à amputação e atinge os adultos jovens e conforme a idade aumenta maior é a relação com as doenças crônico-degenerativas. **Conclusão:** deve haver ações que promovam à saúde que diminuam o índice desses agravos, no entanto a efetivação das políticas públicas envolvidas na diminuição dos índices dos fatores de risco de amputação se faz necessária. **Descritores:** Amputação; Pessoas com Deficiência; Pessoal de Saúde.

RESUMEN

Objetivo: caracterizar las cirugías de amputación de los miembros, excepto extremidades, llevadas a cabo en los hospitales públicos de referencia, entre 2008 y 2010. **Método:** es un estudio cuantitativo con una muestra determinada por los informes de cirugías de amputación realizadas; el análisis estadístico se realizó mediante SEstatNET. El proyecto de investigación fue aprobado por el Comité de Ética en Investigación, Dictamen n° 95.521. **Resultados:** se destaca que los hombres son la mayoría y son más jóvenes que las mujeres. Las causas externas fueron una de las razones relacionadas con la amputación y afecta a los adultos jóvenes y a medida que la edad aumenta la mayor relación con enfermedades crónico degenerativas. **Conclusión:** debe haber acciones que promueven la salud que reducen la tasa de estas enfermedades, sin embargo, se necesita la eficacia de las políticas públicas que intervienen en la disminución de las tasas de los factores de riesgo de amputación. **Descriptor:** Amputación; Personas con Discapacidad; Personal de Salud.

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INTRODUCTION

Most people at some point of life will come across some dependence - for a long or short time, to a greater or lesser level.¹ Considering this, it is up to society assisting people who have some limitation that prevents them from fully performing everyday activities. To meet this speech, the Convention on the Rights of People with Disabilities stands out as one of its objectives *"to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities and to promote respect for their dignity"*.²

The 2010 Census conducted by the Brazilian Institute of Geography and Statistics (IBGE) estimated that 23,9% of the population has a disability (visual, auditory, motor, mental/intellectual); it also found that physical disability is 6.95% of this population, of which, in males 5,33%, and female 9,75%, ie about 13 million Brazilians,³ 5 million men and 8 million women. A disability refers to changes in the human body, result in impairment of the performance of physical function as expected, then amputation is considered a disability.⁴

From the objective is to provide better conditions in amputation of the affected limb function enabling quality of life to people with amputation. The effectiveness of the amputation, which is accompanied by a good recovery, is directly influenced by the realization of the same in the most distal point, considering the amputation site circulation in the area and functional utility. This set of observations provides/boosts usage of prosthesis future.⁵

In the State of Santa Catarina (SC) where the study was conducted on data from the year 2011 of the State Health Secretariat, occurred in health institutions in Florianopolis, in the period from 2008 to 2010, 6280 amputations of which 35,3% are amputation/dislocation of the lower limbs; 8,1% amputation/foot disarticulation and tarsus; 1,8% amputation/dislocation of hand and wrist; 1,3% amputation/dislocation of upper/hand except members; 0,4% amputation/dislocation for oncology lower limbs and 0,09% of upper limbs. It is noteworthy that 46% relate to amputation and finger dislocation and 7,1% equivalent to reconstructive surgeries stump.⁶

The person with disabilities, particularly people with amputation, is a present reality in our daily lives. So, knowing this population is a very important point for the whole society, so there training/ strengthening of public health actions, in order to cover this

population, that even with certain limitations have the same right to have conditions that enable health and well-being, such as access to culture, leisure, adequate transportation, the labor market, among other factors.

Amputation is a *"challenge to be overcome"*, as it generates new perspectives due to changes in the body that influence the *"self-esteem, mobility, ability to perform activities of daily life, at work and at leisure"*.⁷ Such changes result in an adaptation to the "new identity", which allows the person with amputation a new experience. When there is no such recognition, the process of rehabilitation and health of the person with amputation may be affected.⁸

It is expected that the amputation process results in various reactions, after all is not only self-image that has been modified, but also the ability to get around, to work, among others, and all this creates an "exclusion" of the established normal range by society, by convention. It is expected that after the amputation the person be reinserted in society and the strengthening of this ideal is achieved with the effectiveness of rehabilitation. Since becoming dependent is one of the reasons for concern the amputee.

Due to various changes in the person's daily life with amputation, as well as to his family, numerous reactions can be triggered. Therefore, health professionals are necessary; foundations for the rehabilitation of people with amputations to the new condition of life. The assistance provided to that person and their families should offer conditions favorable leverage and integration of people with amputations to society, even with the limitations that has affected them. And for all quality care you want, any person being cared for, public policies are needed to enable such a desire.

So, for the emergence and improvement of public policies those objective care to the person with amputation properly and to ensure rehabilitation of conditions to the new condition of life from the moment of admission, meeting this population is essential. Thus, it is important to know who these people are, what the causes for such involvement, which is the most affected age group. In view of the submitted questions, this study aims to characterizing the amputation surgery in members, except ends held in public hospitals of reference, between 2008 and 2010.

METHOD

Manuscript submitted as part of the result of the dissertation under the title << The Assistance Process of health of the person with amputation >>, belonging to the macroproject entitled << Disabled Persons Subjected to Physical amputation or traumatic Clinic: an analysis from the perspective of Bio/Ethics >>, which has financing CNPq scholarship Notice 14/2011.

This study is part of a quantitative and qualitative study, with an exploratory, descriptive study, supported by the mixed method research. The study in question presents part of the search results and it is structured in the quantitative part. The sample was determined from the reports of lower limb amputation surgeries and/or higher (excluding ends) in the years 2008, 2009 and 2010, carried out in public hospitals of Florianopolis, references in orthopedic surgery/traumatology and vascular.

From the approval of the Research Ethics Committee with Human Beings - CEPSh the Federal University of Santa Catarina, through the Platform Brazil, in the Opinion 95 521, we sought to authorization from the direction of each hospital to search for entry into the field and obtaining the desired data. Records of the surgeries were provided through the statistical sector of each hospital researched, they were: HGCR (Hospital Governador Celso Ramos - Florianopolis); HU (University Hospital of the Federal University of Santa Catarina) - Florianopolis; HRSJ (Homer Regional Hospital Miranda Gomes - São José) and ICSC (Cardiology Institute of Santa Catarina - São José).

To determining the number of amputations of lower limbs and/or higher, except ends, held in the hospitals surveyed, it sought the records filed in the statistics of each hospital sector by the terms: amputation; amputation of the lower limbs; amputation of the upper limbs; disarticulation. Only UH the search was conducted through the International Classification of Diseases (ICD) related to amputation: S88 (traumatic amputation of leg) and Y83.5 (amputation). From the data presented by each statistical sector, it was possible to determine the amputations were performed, as well as gender, age, cause of injury and the merits of each individual served to perform amputation in each research institution.

The characterization of surgeries performed in hospitals surveyed between 2008 and 2010 was determined by analyzing the data provided by the virtual statistical

program provided by UFSC, SestatNet. The analysis was performed using absolute and relative frequency from intersections of the variables studied.

It is noteworthy that throughout the study complied with Resolution 196, of October 10th, 1996, the National Council on Health The study belongs to macroproject entitled "Physical Disability: She underwent amputation or traumatic Clinic: an analysis from the perspective of Bio/Ethics", which has financing CNPq scholarship, Notice 14/2011.

RESULTS

The participating hospitals are references in the State of Santa Catarina in: Vascular Surgery (Homer Regional Hospital Miranda Gomes of São Jose, Cardiology Institute of Santa Catarina and University Hospital), Orthopedics/Traumatology (Regional Hospital of São Jose and General Celso Ramos Hospital) and Surgical Oncology (General Hospital Celso Ramos).

The care provided by these hospitals was extended to people of all mesoregions of Santa Catarina, including other states. However, the most attended middle region was the Great Florianopolis, with 71,2% of surgeries performed, and followed by the northern and western middle region, with 6,8% and 6,3%, respectively. It is noteworthy that about 50% of these surgeries were performed at the Regional Hospital of São Jose, with 102 procedures over the three years that were the focus of this study.

Over the years 2008, 2009 and 2010 there were carried out in these hospitals 206 members of amputation surgery (upper and lower), except ends. In the records studied, only 5 (2.4%) were not related to lower extremity amputation.

Of the 206 records, 143 (69,4%) were male and 63 patients (30,6%) were female. The average age of people who have suffered amputation, was of 66,47 years old, with an average age of 59,7 years old, male and female was of 68,8 years old. The median age was 66, the male median age was 62 and the female was 75 years old. Looking at the fashion of the age, met 77 years old as the most frequent in both genders, in analyzing the genders separately, fashion male was 70 years old and female found a bimodal sample, 70 to 81 years old.

The causes of amputation cases before the records of surgeries were divided into seven major groups, according to each procedure. They are: external causes, vascular disease,

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gangrene, infectious process, cancer, diabetic complications and others. Amputation of the reasons shown in the external causes concern traumatic amputations and/or exposed fracture, as in the related vascular disease, show up vascular ischemia, peripheral arterial disease, irreversible ischemia in limbs, among others. The reasons evidenced by gangrene relate to the injuries that have evolved to such conditions and which are not always

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linked to prior vascular disease, the infectious process group is grouped records of infections, injury and sepsis.

To highlight the causes of amputation and its distribution according to age and gender, has built up the Table 01. The distribution of age groups followed the logic of showing the second amputation injury causes more related to chronic degenerative and traumatic diseases, enabling analysis for each gender.

Table 1. Amputation surgeries performed, according to age, gender and cause in public reference hospitals in greater Florianópolis, in the years 2008 - 2010.

Age/gender/cause	Extern cause		Vascular disease		Gangrene		Infection		Neoplasms		Diabetes		Other		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
< 20	1	1	-	-	-	-	1	-	1	-	-	-	-	-	3	1
%	5,5	25	-	-	-	-	7,1	-	11	-	-	-	-	-		
Age/gender/cause																
%	0,7	1,6	-	-	-	-	0,7	-	0,7	-	-	-	-	-	2,1	1,6
21 - 35	7	2	1	-	-	1	3	-	4	1	-	-	1	-	16	4
%	38,9	50	1,7	-	-	6,6	21	-	45	50	-	-	33	-		
Age/gender/cause																
%	4,9	3,2	0,7	-	-	1,6	2,1	-	2,8	1,6	-	-	0,7	-	11	8
Age/gender																
36 a 50	7	1	4	2	3	1	3	1	2	1	1	1	-	-	20	7
%	38,9	25	7	6,2	9,1	6,6	21	50	22	50	11	20	-	-		
Age/gender/cause																
%	4,9	1,6	2,8	3,2	2,1	1,6	2,1	1,6	1,4	1,6	0,7	1,6	-	-	14	11
Age/gender																
51 a 65	3	-	14	4	15	2	1	-	1	-	4	-	1	1	39	7
%	16,7	-	25	13	46	13	7,2	-	11	-	44	-	33	33		
Age/gender/cause																
%	2,1	-	9,8	6,3	11	3,2	0,7	-	1,4	-	2,8	-	0,7	1,6	28	11
Age/gender																
66 a 80	-	-	30	12	11	8	5	1	1	-	4	3	1	1	52	25
%	-	-	53	38	33	53	36	50	11	-	44	60	33	33		
Age/gender/cause																
%	-	-	21	19	7,7	13	3,5	1,6	1,4	-	2,8	4,8	0,7	1,6	37	40
Age/gender																
> 80	-	-	8	14	4	3	1	-	-	-	-	1	-	1	13	19
%	-	-	14	44	12	20	7,2	-	-	-	-	20	-	33		
Age/gender/cause																
%	-	-	5,6	22	2,8	4,8	0,7	-	-	-	-	1,6	-	1,6	9,1	30
Age/gender																
Total	18	4	57	32	33	15	14	2	9	2	9	5	3	3	143	63

DISCUSSION

The number of amputations performed in the hospitals studied in the period surveyed shows that men are most to perform such a

procedure and that they are younger than women, which have an equal distribution. Records presented, the average age of men is approximately 6 years old below the average age of all registered population, since the

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average age of women is two years old above the total population. Other studies are in line with the findings of this research, where the male is predominant in cases of limb amputations and that they are younger than women.⁹⁻¹⁰ However, the finding in this study and other studies contradict statistics presented by Census 2010, where people with physical disabilities are mostly women, but the motor³ disability covers any motorized deficit that impossible and mobility expected one.

External causes were a major reason related to amputation during the research, it reached the younger portion of the population under study and the male was predominant. Traffic accidents are a significant portion of external causes and motorcycle accident is the most relevant.¹¹ In this study, when analyzing the age amputation due to external causes for 11 records whose age is lower at 35, 8 were between 36 and 50 and only 3 were between 51 and 65 years old. Of these records, 81% are men and approximately 83% are under 50, characterized by young men of working age.

Studies show that in Brazil and other countries, traffic accidents involves young male population between 20 and 39 years old.¹¹⁻² In this sense, the traumatic amputation of limbs is associated with characteristic morbidity in developing countries, which results in the quality of life of who suffered amputation and their families.^{9,11, 13}

Health education in the prevention of these indicators can allow the reversal of this case.¹¹ For that to be positive, it is necessary to understand the extent and severity of the reasons that leverage external causes. This responsibility is a challenge that the state must overcome¹² as external causes directly affect the young and economically active population of the country, resulting in socio-economic damage, influencing the quality of life of these people.

It was evident as the age of amputees increases the greater the relation to chronic diseases. In this direction, the most evident amputation reasons are related to vascular disease, gangrene, in addition to diabetic complications in smaller proportions. It is believed that such registered causes of these amputations are related to diabetes mellitus (DM), whereas the DM is a factor to amputation.^{10, 14, 15} After all the risk of lower extremity amputation in people with DM is greater than those who have.¹⁶ It is assumed that the risk of amputation decreases when the causes bases are treated early, then the

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multidisciplinary team is responsible for the development of educational activities on health.

A study organized in the early twenty-first century shows the prevalence in cases of DM for the year 2030, it is estimated that people with DM aged 64 will be around 82 million in developing countries and 48 million in developed countries. In Brazil, it is estimated that the population aged 64 years old with DM will be about 11,3 million. The DM is considered a public health problem because when there is the possibility of early diagnosis and much less guarantee of access to health services, the problem becomes even more alarming.¹⁸

It is understood that through early diagnosis, and with effective control of risk factors, reduce the amputation of possibilities.^{10,19} It is true that prevention, in addition to actions that promote health as well as quality care, provides improvement in one's quality of life to be careful.²⁰

By analyzing the three major amputation causes evidenced in the survey in question, considering the age groups: 51-65, 66-80 and > 80 years old; men are 65.69% of the 137 amputations records held, these about 40% are between 51-65 years old. It was found then, with regard to chronic diseases, the male is predominant, since women who have suffered amputation numbers increased with increasing age.

In another study, amputation affects both men and women. However, in men happens in larger proportions.⁹ The fact that men undergo more amputations, with younger age than women may be linked to a common census speech that he is not a breeched be and so does not need preventive care, since man is afraid to know they have the disease.⁹

It appears that the male population has poor access in primary care, which leads to this vulnerability. For when there is search service, they are already added to the morbidity, resulting in biopsychosocial changes that influence the quality of life of this population. Limited knowledge, especially the male population on the importance of health promotion and disease prevention, has a direct impact on the actions of concern to self-care.²¹

The cancer is another reason shown in surgeries performed in hospitals surveyed as the underlying cause, although fewer in number (5,34%), but with great importance being considered. Studies show that approximately 70% of bone sarcomas arising near the knee joint and it is estimated that

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15% result in amputation. In addition to bone sarcomas, soft tissue sarcomas predominantly affect the lower limbs.²²

In a survey, it was signaled that the high incidence of limb loss may be related to the extent of disease, as well as the availability of good medical care. And given that amputation is a treatment, this should be selected based on individual need, as the real weakness of the person subjected to amputation, or morbidity or lack of mobility, and provide for and by professionals, institutions and health policies, which reflect negatively or positively on the quality of specialized services.¹⁵

Amputation is considered as an alternative recovery of the person's quality of life that needs care when there is no other solution and prevention measures have been taken. The search for alternatives that result in the prevention of major amputation is already present.²³ Therefore, prevention measures are essential for the amputation rate decrease, so it is important that educational practices are adopted.

It is known that when there is awareness in health care, people who have a predisposition to amputation have reduced their risks. Another fact that is directly related to decreased amputation involves the effective and early treatment.¹⁰ Therefore, it is essential that the person being cared understand the care initiatives in health,¹⁹ which should provide improved health conditions experienced by these people.²⁰

On to what was presented, raising awareness in the control of bases causes of amputation, the health promotion measures are important and necessary, in addition to health care and strategies that enable the reduction of external causes, influence directly in the reduction of amputation. After all the more invest in care actions in health and reduction of external causes the amputation numbers will decrease in this context the state is responsible for developing public policy and enable compliance with the same, offering society conditions that enhance and guarantee quality of life.

So if there is a quality care, where professionals work as a team and who value interdisciplinary care, the recovery is expected from the person with amputation is enhanced. After all, health professionals are essential in prevention and care related to amputation. As previously mentioned, the State has the primary responsibility to provide appropriate conditions for the conduction of a quality care. It is known that good working conditions, infrastructure quality promote quality care.

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The importance of communication among professionals, interdisciplinary work is a crucial factor for the recovery of people subjected to amputation.⁽²⁴⁾ However, health education actions are relevant at any level of attention, when given an effective orientation there is increased knowledge of those involved which provides improved quality of life. These factors are evident from the awareness in lifestyle change, as well as the acquisition of skills related to self-care.²⁵

Health professionals should also be able to promoting the service and maintaining a pattern in it. The provider, in assisting the person with amputation or that has risk of amputation must have the knowledge network that enables the service to these people. Still, even with the standard of care, individuality in the care of each person must be preserved, aimed at comprehensive care.

FINAL REMARKS

The findings of this study corroborate with what is presented in the studied literature. Since men are the majority when the issue involves the amputation; and they have an earlier age than women, but women also suffer amputation, but this fact occurs most age.

External causes are a major epidemiological problem in Brazil as well as in developing countries. Actions that promote public awareness aimed at the risks that every population is in being a victim of external causes. It is important to consider that the young population is the one most consistent with accidents involving external causes, leading to a large socioeconomic loss, whereas this population is economically active.

The main cause of amputation in the presented study involves vascular diseases. Studies show that such question has as underlying disease Diabetes Mellitus; it is considered a major public health problem. Thus, health education programs are essential for the affected population to take the necessary knowledge regarding healthy habits. In this perspective, it is thought that with specific care actions, the risk of amputation influence directly in their loss.

In this context, health professionals are relevant in actions that promote health, for this the effectiveness of public policies involved in reducing the rates of amputation risk factors is needed. In addition, the role of health professionals should be an interdisciplinary way, all with one goal: the recovery of people to be cared for.

Statistical studies are important to the real knowledge of the population involved, making it possible to draw a profile of the population involved in the study as well as inspiring the development of further research aimed at seeking the needs of this population. Through this perspective, further studies are necessary for the consolidation of real people involved with the amputation, taking into account its bases causes and what preventive measures should be established for the reduction in amputation rate.

Thus, it appears as potential that the study be developed from the absolute population related to the quantitative public hospitals of Florianopolis reference. And as a limitation of the study, highlights the impossibility of full access to the records of persons undergoing amputation, preventing treat the epidemiological profile of the same.

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