

Prosthetics and rehabilitation in lower limb amputees

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Abstract

Background. It is considered relevant to contextualize the health care process to amputated people since the hospitalization until the acquisition of the prosthesis to adapt to the new living condition and determine the bioethical aspects involved in this process. In that sense, the research question in this study was: how did health care to people submitted to limb amputation take place from the perspective of bioethical analysis? And the study objectives were: to analyze the care delivered by health professionals throughout the amputation process from the perspective of the amputees and discuss the health care process for amputated people from the perspective of bioethical analysis.

Aims. The overall objective of the standards and guidelines is to establish a basis for the provision of a service of excellence to the amputee population with equity of access throughout the Romania. It also aims to assist clinical governance and service development with standards presented in a format easily accessible for audit purposes.

Methods. A qualitative, descriptive and exploratory study was conducted through semi-structured questionnaires with 175 people undergoing amputation in the period 2008-2020, in SC. Theranova Protezare SRL in Romania. The objectives were to analyze the care provided by health professionals throughout the amputation process in the perspective of the amputee patient; and discuss the process of health care to the person with amputation in the bioethical analysis perspective. Data were analyzed according to content analysis. Three thematic categories emerged: the process of amputation; team performance and rehabilitation. Bioethics permits reflection on the care provided to amputees and problematizes the relationship of the health care process with support available through public health policies. The professional involved in this process has to take responsibility for putting the process in practice and interdisciplinary is essential for the recovery of the amputated patient.

Results. It was verified that the causes leading to amputation can be triggered by a chronic illness as well as by trauma, the latter determined by external causes. Despite different motives for the amputation, however, the care process is the same. In other words, based on the statements, it can be inferred that, despite the stakeholders' different ages and needs, both end up in the same health care context: slow and fragmented.

Conclusions. In addition, in the interval of almost twelve years since they were submitted to the respective amputation, a precarious situation of physical, social and economic independence was evidenced. In short, these qualitative research results do not permit generalizations but questions: is these people's right to socio-professional integration being guaranteed? The question is: the amputated people and/or the health team's lack of knowledge, or the disorganization of the health care process?

Key words: amputation, health professionals, bioethics, assistance to health, public health policy

Introduction

The loss of a lower limb has severe implications for a person's mobility, and ability to perform activities of daily living (Brasil, 1999). This negatively impacts on their participation and integration into society (Instituto Brasileiro de Geografia e Estatística, 2010). The ultimate goal of rehabilitation after limb loss is to ambulate successfully with the use of a prosthesis (Ministério da Saúde, 2010) and to return to a high level of social reintegration. Prosthetic rehabilitation is a complex task that ideally requires input from a transdisciplinary rehabilitation team. However, most often internationally, physiotherapists are in charge of the physical rehabilitation process (Vargas, 2013a).

To the extent that the bioethics of protection and intervention attempt to grant visibility to the equality/inequality or equity/inequity among people, they can provide competent support to make them understand their rights and claim them (Garrafa, 2012). “The right to health needs to combine the protection of individual autonomy and the collective provision of means to put that right in practice” (Alvarsson, 2012).

Hypothesis

Starting from the idea that the prosthesis manufacturing process and the management of patients with amputations should start as soon as possible, we wanted to find out some data about the information patients receive, the way and the

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duration of the recovery process, the time required to obtain funding from the national Health Insurance (C.A.S.), we included in the questionnaire a series of questions to give us a broader picture of these defining elements. The most important and decisive decisions in this whole prosthesis manufacturing process must be made on the basis of the clearest and most comprehensive information possible in all that means amputation, recovery, life after amputation, possibilities and limitations in everyday life, which is why it is important for patients and their relatives to have this information so that they can make the best decisions.

Material and methods

a) *Period and place of the research*

A qualitative, descriptive and exploratory study was conducted through semi-structured questionnaires with 175 people undergoing amputation in the period 2008-2020, in SC. Thermanova Protezare SRL in Romania.

b) *Subjects and groups*

To select the participants, the 268 preselected records were contacted personally, if contact was possible, they were asked whether they accepted to participate in the research or not. These participants represent a retrospective study of amputees who were served by Thermanova. Therefore, a declaration from an ethics entity was not necessary. GDPR policy has been followed to the extent that the participating persons gave their consent, they have not been nominalized and they cannot be identified in any way. From this group 175 of whom accepted to participate in the study.

c) *Tests applied*

The research participants signed the Informed Consent Form, which authorized the investigation of the patient history and the participation in a semi structured questionnaire which was digitally recorded. The title of our questionnaire is: “Prosthesis evaluation questionnaire for persons with lower limb amputations: Assessing prosthesis-related quality of life” author Jaco Du Plessis

d) *Statistical processing*

Demographic and clinical characteristics of patients were analyzed and no formal hypothesis was tested. Discrete variables are presented as count and frequency (%). All the data were processed and grouped using Microsoft Excel 2016.

Results

Out of the total of 175 completed questionnaires, it is highlighted that 71% of the respondents are male and only 29% female (Fig. 1).

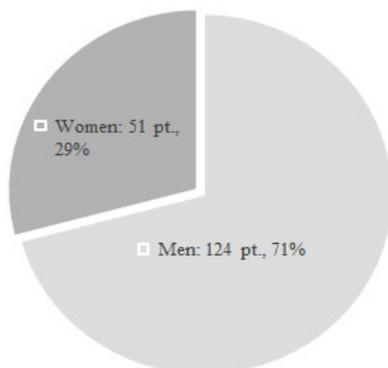


Fig. 1 – Distribution by gender.

Regarding the level of amputation, 135 people (77%) have thigh amputations (transfemoral) compared to 37 people (37%) with leg amputation (transtibial) and the difference is the amputations of the upper limbs, forearm and arm (Fig. 2).

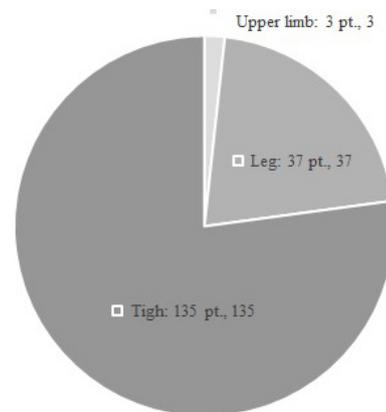


Fig. 2 – Distribution on amputation levels.

A small percentage of only 3% are patients with bilateral amputations, 52% are amputated on the left side and 45% on the right side (Fig. 3).

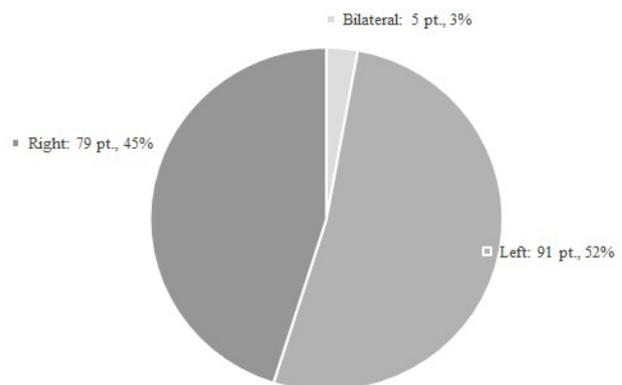


Fig. 3 – Distribution on the amputated side.

The causes of amputations are represented in a higher percentage of diseases (arteriopathy, diabetes, infections, tumors) 84%, followed by amputations due to accidents 12% and only 7% are congenital cases (Fig. 4).

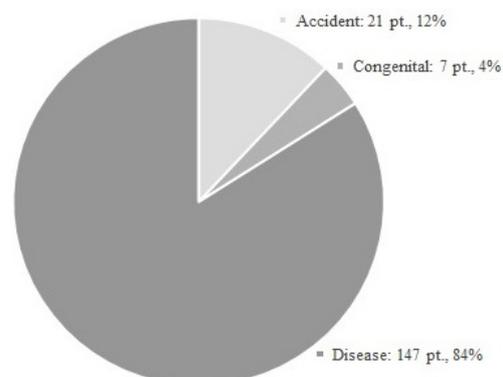


Fig. 4 – Distribution according to the reason for amputation.

From the point of view of the age of those involved in completing the questionnaires, 89 people were aged between 41-65 years, 48 people were over 65 years old, young adults aged 26-40 were 28, young people between 18-25 years old were only 8 in number and 2 people were under 18 years old (Fig. 5).

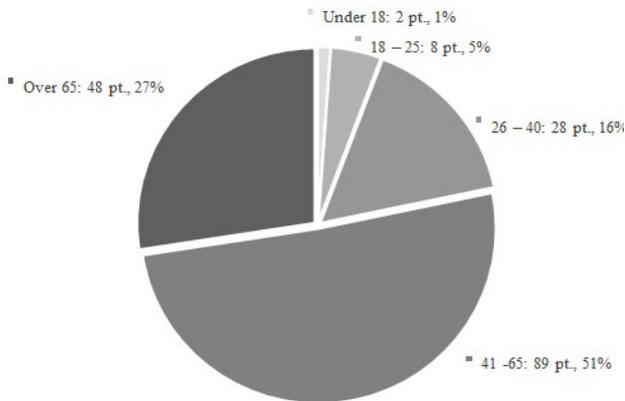


Fig. 5 – Distribution by age categories.

Of the 175 participants in the survey, 96 are retirees, 60 are employees, 5 are entrepreneurs, 12 are unemployed and 2 are students (Fig. 6).

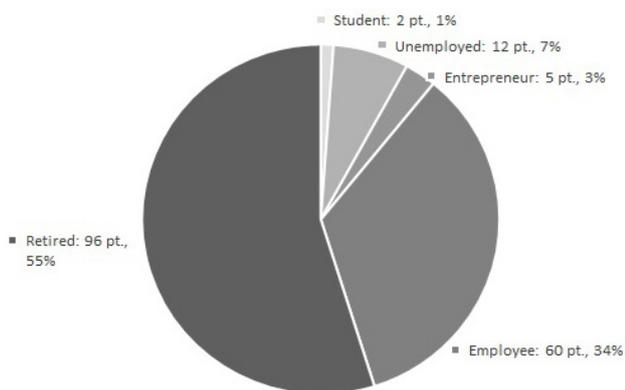


Fig. 6 – Distribution by occupation.

Patients in urban areas represent 64.8% those in rural areas 35.2%. 131 people have secondary education, 33 have higher education and 11 of them have education under 10 classes (Fig. 7).

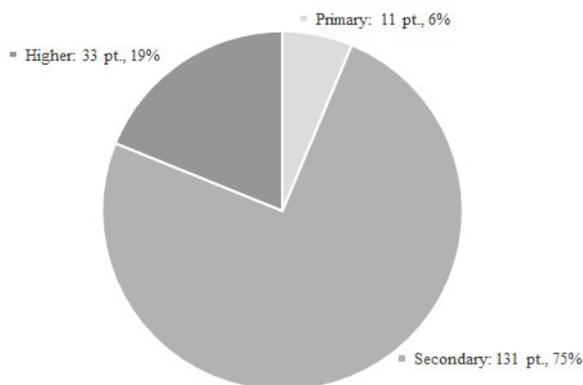


Fig. 7 – Distribution of patients according to studies.

Given that the vast majority of patients suffering from amputations are retirees whose family income is provided only by pension or social benefits, the costs involved in the prosthetic manufacturing process are a decisive factor when choosing the prosthesis model to be made (Fig. 8).

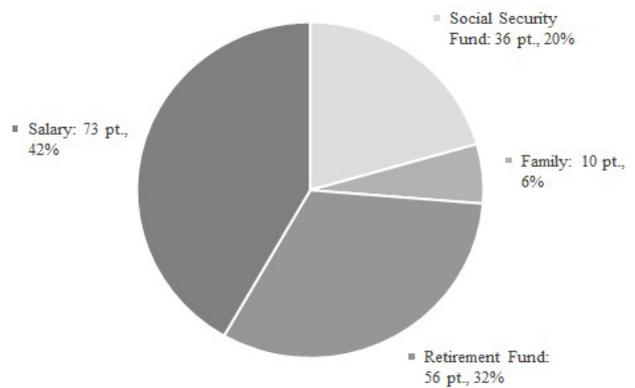


Fig. 8 – Distribution of income sources.

For this reason, the role of state financial support through the health insurance system is important even if the amount of money offered by this insurance system is not the desired one, but for many patients it is the only way they can get a prosthetic device that can give them the chance for a recovery and social reintegration. Of the answers given by respondents out of the total number of people who received financial aid from the National Health Insurance (C.A.S.) 15% obtained the decision in one year, 32% waited between 6 and 12 months to obtain the decision from C.A.S., 26% obtained the decision within 3-6 months, 14% within 3-6 months, 6% within one month and 4% had to wait more than a year to obtain the decision from C.A.S., while 3% did not use C.A.S. support (Fig. 9).

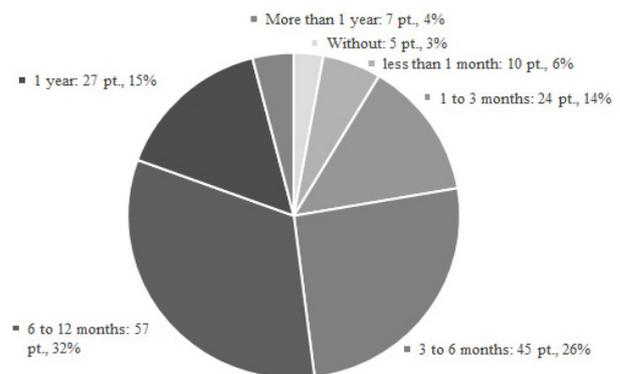


Fig. 9 – The waiting time for receiving the approval from C.A.S.

Another question we have asked patients was whether they wanted a more rudimentary prosthesis for which the costs would be fully covered by the C.A.S. or something more efficient, which of course involves additional costs on behalf of the patient but also offers a higher comfort in terms of prosthesis wear. From the answers received, it is clear that the vast majority of patients would like something better, although in many cases they are limited to what the health system offers them due to the lack of funds needed to cover additional expenses (Fig. 10).

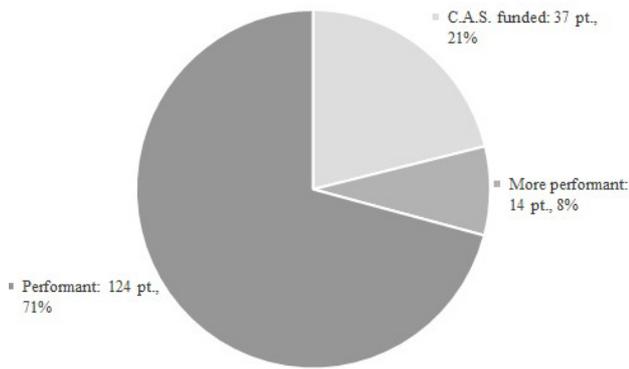


Fig. 10 – Patients preference for prostheses.

All those who chose the prosthesis option paid by the state subsidy cited as a reason the lack of money needed to purchase a better prosthesis.

Fig. 11 shows us the number of patients who have benefited or not from psychological counseling.

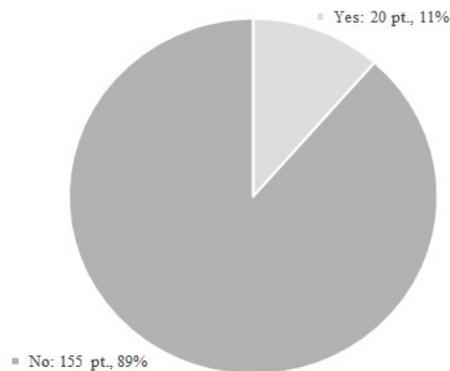


Fig. 11 – Psychological recovery.

Another important thing to note is that only 20% of patients answered positively to the question of whether they benefited from a recovery process compared to the 80% who did not mention such a thing (Fig. 12).

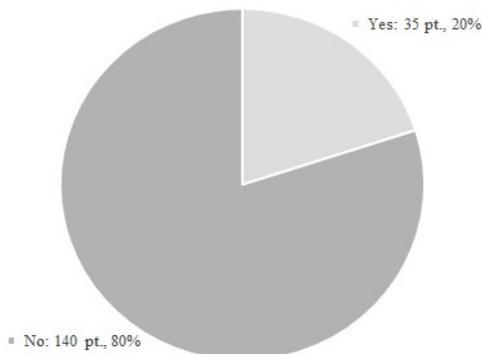


Fig. 12 – Participating in a recovery process.

The statistical data from the completed questionnaire show us a satisfactory result when we talk about the period of time that passes from amputation to the first prosthesis. A fairly good percentage (24%) say that they manage

to buy their first prosthesis in less than 6 months after amputation, followed by a period between 6 and 12 months in a percentage of 40%. Those who manage to do this about 6 months after amputation end up representing 11%. The percentage of patients who end up waiting a year or even more than two years to be able to buy their first prosthesis is present but quite small of 1%, 3% and 4% respectively (Fig. 13).

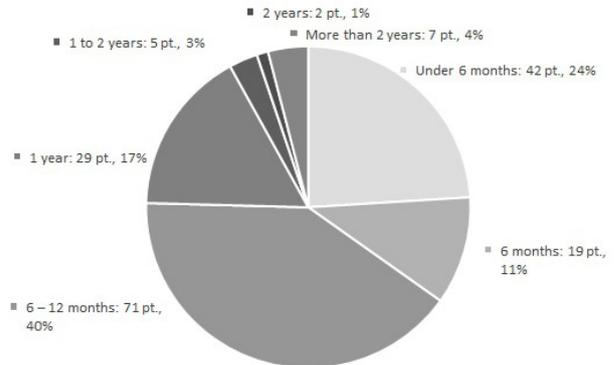


Fig. 13 – Time period from amputation to first prosthesis.

Table I
Demographic and financial data.

Characteristic	Patients n (%)
Gender	Males 124 (71)
	Women 51 (29)
Age (years)	< 18 2 (1)
	18-25 8 (5)
	26-40 28 (16)
	41-65 89 (51)
	> 65 48 (27)
Occupation	Student 2 (1)
	Entrepreneur 5 (3)
	Unemployed 12 (7)
	Employee 60 (34)
	Retired 96 (55)
Studies	Elementary 11 (6)
	High School 131 (75)
	University or higher 33 (19)
Income	Family 10 (6)
	Social Security 36 (21)
	Salary 73 (42)
	Retirement Fund 56 (32)

Table II
Amputation and prosthesis data.

Characteristic	Patients n (%)
Amputation level	Upper limb 3 (2)
	Leg 37 (21)
	Thigh 135 (77)
Amputation side	Right 79 (45)
	Left 91 (52)
	Bilateral 5 (3)
Favorite prostheses, dependin on the price	C.A.S. funded 37 (21)
	Performant 124 (71)
	More performant 14 (8)
Waiting time from amputation to prosthesis	None 42 (24)
	< 1 month 19 (11)
	1-3 months 71 (41)
	3-6 months 29 (17)
	6-12 months 5 (3)
	1 year 2 (1)
	> 1 year 7 (4)

Table III
Recovery data.

Characteristic	Patients n (%)	
Psychological recovery	Yes	20 (11)
	No	155 (89)
Participating in a recovery process	Yes	35 (20)
	No	140 (80)

Even if the number of patients who completed the questionnaires is only a small sample compared to the number of patients who annually would undergo a prosthetic manufacturing process, we consider that the results of analysis and data processing are a good starting point for future evaluation at the national level with an even greater number of patients. The information obtained will provide us with the necessary basis for establishing conclusions that we hope will bring a new approach to the entire prosthetic process in our country with the involvement of all personnel involved in decision taking in all areas of activity that are an integral part of this process.

Discussion

The study findings with regard to sex and amputation cause indicate what the other studies also evidence. That is, men and the baseline disease DM predominate with regard to amputation. DM is a risk factor for amputation (Alvarsson et al., 2012; Holman et al., 2012; Andrews et al., 2013).

As observed, the participants’ education level is low, based on which it is considered that knowledge deficits, especially in the male population, about the importance of health promotion and disease prevention, influences self-care (Fontes et al., 2011) actions and their “competence” to contextualize their rights in the health care process. The research participants, whether married or not, live with their family, legitimizing it as support for health promotion and disease prevention.

The feelings triggered by the imminent amputation are similar in the people going through this situation. After all, both are confronted with a new living condition, besides the duality between the need for the surgery and the “refusal” to lose part of themselves (Gabarra et al., 2009). Hence, accepting that the amputation is the best option is not easy, as the way the people see themselves in society changes, giving rise to countless problems. The patients are wounded for the situations triggered with regard to their new condition; they are not prepared to discern what is ideal to establish better living conditions.

Permitting the practice of autonomy means offering information on the best conducts to be taken; it means inserting the patients in the care process; it means knowing how to listen to them, knowing their weaknesses and providing for tools for them to feel capable and responsible for their recovery. Thus, the respect for autonomy is related to enabling the person to move beyond their concept of dependence (Vargas et al., 2013b). It should be underlined, however, that so-called autonomous persons can also make mistakes in their decisions made, as the conditions experienced at the moment of the decision directly interfere in their actions.

It is believed that clarifying the risks and benefits of

care delivery avoids any bottleneck in the conduct taken. It is fundamental for the patients to know the pros and cons of the care performed, so as not to create mistaken expectations regarding that care (Magalhães et al., 2013).

The multidisciplinary activity results in greater safety with regard to the decision made, permitting greater benefits for the people considered as risk groups. The professionals’ experience and the available technological apparatus are aspects considered in the care strategies adopted, in accordance with the complexity of the lesion (Magalhães et al., 2013).

The health professionals should acknowledge the needs of the patients submitted to the amputation, so that the orientations provided influence the short, medium and long-term recovery and, hence, the prevention of health problems associated with the amputation. The care the team provides should move beyond the physical and prosthesis focus; after all, in the course of the entire amputation process, psychological and social interventions are also essential (Liu et al., 2010).

The people who receive care sometimes do not know that that care is a right and not a favor granted by the person who provides it. In that sense, one of the participants praises the health team’s activities. It can be inferred, however, that compliments for the professionals’ care evidence the patients’ lack of knowledge of their right to high-quality care.

The bioethics of protection is one way to reflect on the functioning of the public health system structure, in which the State is responsible for resource management, social control and qualified human resources (Gomes, 2012) and for providing/developing techniques aimed at reducing the stakeholders’ disabilities (Vargas, 2013a).

In the study participants’ reports, it is highlighted that interdisciplinary actions are a problem. The amputated people see the professionals in an isolated manner; the function of each is acknowledged, but not the perceived importance of interdisciplinary care. Nevertheless, in a multidisciplinary team’s care process, when acting in an interdisciplinary manner, communication is more effective and, consequently, the patients’ recovery and rehabilitation process can be more satisfactory (Andrews et al., 2013; Latlief et al., 2012; Schoeller et al., 2013).

Knowing how to listen is essential; this conception is also articulated with the professionals’ attitudes and work conditions.

As observed, the precarious infrastructure, associated with nonchalant care, leads to inappropriate care delivery, infringing on the rights of the people who need it. Health professionals are educators who should promote health and prevent diseases and complications, reducing the problems that affect the vulnerable society (5). Therefore, it is the duty of the State to offer a qualified and valued team and guarantee infrastructure and quality. Nevertheless, simply presenting policies is not sufficient, but means are needed to execute them. Rights have been gained through the constitution and they have to be respected.

Hence, questions are raised on the State’s responsibility in resource management. In 2012, the Care Network for Disabled People was created, which offers financial incentives for specialized rehabilitation care centers, with

a view to guaranteeing access to the people who need the service (Sena et al., 2012).

The reports showed that, when care is provided in an isolated manner, the expected outcome may not be evidenced. Therefore, it is considered that a treatment plan centered on the person should be comprehensive and developed from the start of the rehabilitation process (3, 5) Rehabilitation should be planned even before the amputation, because the team understands the importance of the early establishment of rehabilitation.

According to one study, health professionals, particularly in primary care, feel unprepared to deliver care to disabled people, especially people who were amputated, showing the lack of knowledge on the importance of rehabilitation (Baena & Soares, 2012). The National Health Promotion Policy determines that primary health care should solve most of the health needs evidenced by the population (5).

In that perspective, it is considered that a knowledgeable health team can plan, organize, develop and assess actions that grant better living conditions (Mattioni et al., 2011) to wounded people (5). Nevertheless, the professionals' lack of preparation is evidenced, which exacerbates avoidable situations, turning the recovery process even slower than expected (Baena & Soares, 2012; Mattioni et al., 2011)

The study also evidences the team's lack of experience in comprehensive care to amputated people and their relatives. These individuals figure among the people who display multifactorial consequences due to the new living condition which, by itself, turns into a challenge for the professionals involved in care (Baena & Soares, 2012; Mattioni et al., 2011).

As regards the acquisition of the prosthesis, it should be reminded that, in the state where the study was developed, there is only one referral center for rehabilitation, which is unable to attend to the demand. This problem directly influences the rehabilitation process of amputated people. After all, care planning should be centered on the patient's social wellbeing and developed at the start of the rehabilitation process (3)

Conclusions

1. The study permits reflecting on care for amputated people from a bioethical perspective, considering that studies on this theme focus the discussion on the stakeholders' characteristics, the professionals' care and the amputated people's experience. In other words, in Romania, no previous studies are available that analyzed the bioethical aspects of the health care process for amputated people.

2. Therefore, it was considered that the bioethics of protection and intervention is a productive possibility for the process of reflecting on the care delivered to amputated people. It is highlighted that both contribute to the detailed arguments on several and different subsidies deriving from public health policies that can intervene in the quality of care delivery and transform the people submitted to the amputation or not, enabling them to reflect on their rehabilitation and new living condition.

3. In addition, in the interval of almost twelve years since they were submitted to the respective amputation,

a precarious situation of physical, social and economic independence was evidenced. In short, these qualitative research results do not permit generalizations but questions: is these people's right to socio-professional integration being guaranteed? The question is: the amputated people and/or the health team's lack of knowledge, or the disorganization of the health care process?

4. Studies are needed that focus on the activities of amputated people, observing whether they readapt to the new living condition and develop a high-quality life or not. As evidenced, the professionals' activities in the course of the care process to disabled people are relevant for their rehabilitation to the "new life". Based on these professionals' perspective, the care network should be acknowledged that is established for care of disabled people.

Conflicts of interests

Nothing to declare.

References

- Alvarsson A, Sandgren B, Wendel C, Alvarsson M, Brismar K. A retrospective analysis of amputation rates in diabetic patients: can lower extremity amputations be further prevented? *Cardiovasc Diabetol* [online]. 2012 ;11(18):1-11. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3362773/pdf/1475-2840-11-18.pdf>. Accessed on 2013 Jul 10.
- Andrews KL. The at-risk foot: what to do before and after amputation. *J Vasc Nurs*; 2011;29(3):120-123. Available at: <http://www.sciencedirect.com/science/-article/pii/S1062030311001142#>. Accessed on 2013 Jul 15.
- Baena CP, Soares MCF. Subsídios reunidos junto à equipe de saúde para a inserção da fisioterapia na Estratégia Saúde da Família. *Fisioter Mov* [online]. 2012;25(2). Available at: http://scielo.br/scielo.php?script=sci_arttext&pid=S0103-51502012000200020&lng=en&nrm=iso. Accessed on 2013 Aug 23.
- Fontes WD, Barboza TM, Leite MC, Fonseca RLS, Santos LCF, Nery TCL. Atenção à saúde do homem: interlocução entre ensino e serviço. *Acta Paul Enferm* [online]. 2011;24(3). Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-21002011000300020&lng=en&nrm=iso. Accessed on 2013 Sep 6.
- Gabarra LM, Crepaldi MA. Aspectos psicológicos da cirurgia de amputação. *Aletheia*, 2009;(30):59-72. Available at: <http://pepsic.bvsalud.org/pdf/aletheia/n30/n30a06.pdf>. Accessed on 2012 Mai 10.
- Garrafa V. Proteção e acesso à saúde com um bem social. In: Hellmann F, Verdi M, Gabrielli R, Caponi S. *Bioética e saúde coletiva: perspectivas e desafios contemporâneos*. Florianópolis (SC): DIOESC, 2012.
- Gomes R. Análise e interpretação de dados de pesquisa qualitativa. In: Minayo MCS, Deslandes SF, Gomes R. *Pesquisa social: teoria, método e criatividade*. 31a ed. Petrópolis (RJ): Vozes; 2012.
- Holman N, Young RJ, Jeffcoate WJ. Variation in the recorded incidence of amputation of the lower limb in England. *J Vasc Surg* [online]. 2012;55(7):1919-1925. Available at: <http://link.springer.com/article/10.1007%2Fs00125-012-2468-6/fulltext.html>. Accessed on 2013 Jul 20.
- Latlief G, Elnitsky C, Hughes SH, Phillips SL, Koss LA, Kent R, et al. Patient safety in the rehabilitation of the adult with an amputation. *Phys Med Rehabil Clin N Am* [online]. 2012;23(2):377-392. Available at:

- http://ac.els-cdn.com/S1047965112000198/1-s2.0-S1047965112000198-main.pdf?_tid=610b35f8-20d3-11e3-bebb-00000aab0f01&acdnat=1379557979_ad029fdcc5c7610c2aee-39416b097de9. Accessed on 2013 Aug 15.
- Liu F, Williams RM, Liu HE, Chien NH. The lived experience of persons with lower extremity amputation. *J Clin Nurs* [online]. 2010;19(15-16):2152-2161. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2702.2010.03256.x/pdf>. Accessed on 2013 Aug 15.
- Magalhães CEV, Ferreira E. Doença vascular periférica acima e abaixo do diafragma: a equipe médica e intervencionista devem atuar juntos? *Rev HUPE* [online]. 2013;12(Supl1):81-92. Available at: <http://www.e-publicacoes.uerj.br/index.php/revistahupe/article/-view/7086/5078>. Accessed on 30 2013 Aug 30.
- Mattioni FC, Budó MLD, Schimith MD. O exercício da integralidade em uma equipe da estratégia saúde da família: saberes e práticas. *Texto Contexto Enferm* [online]. 2011;20(2):263-271. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-07072011000-200007&lng=pt. Accessed on 2014 Jan 15.
- Schoeller SD, Silva DMGV, Vargas MAO, Borges AMF, Pires DEP, Bonetti A. Características das pessoas amputadas atendidas em um centro de reabilitação. *Rev Enferm UFPE* [online]. 2013 7(2):445-51. Available at: <http://www.revista.ufpe.br/revistaenfermagem/index.php/-revista/article/download/3351/5326>. Accessed on 2013 Aug 15.
- Senra H, Oliveira RA, Leal I, Vieira C. Beyond the body image: a qualitative study on how adults experience lower limb amputation. *Clin Rehabil* [online]. 2012;26(2):180-191. Available at: <http://cre.sagepub.com/content/26/2/180.full.pdf+html>. Accessed on 2012 Aug 17.
- Vargas MAO. Ética em saúde: autonomia do usuário com DCNT. In: Guerreiro D, Almeida AM, Meirelles BHS, Alves LMM, Vargas MAO, Zanetti ML, et al. *Curso de Especialização em Linhas de Cuidado em Enfermagem - Módulo VII: Doenças crônicas não transmissíveis*, 2013b Available at: https://unasus2.moodle.ufsc.br/pluginfile.php/12091/mod_resource/content/3/Modulo7_-DoencasCronicas.pdf. Accessed on 2013 Aug 13.
- Vargas MAO. Ética, bioética e biopolítica: conceitos implicados na assistência à saúde. In: Guerreiro D, Almeida AM, Meirelles BHS, Alves LMM, Vargas MAO, Zanetti ML, et al. *Curso de Especialização em Linhas de Cuidado em Enfermagem [página na internet] - Módulo V: Doenças crônicas não transmissíveis*. 2013 a Available at: http://unasus2.moodle.ufsc.br/pluginfile.php/11071/mod_resource/content/3/Modulo5_DoencasCronicas.pdf. Accessed on 2013 Aug 30.

Websites

- (1) Brasil. Lei n. 3.298, 20 de dezembro de 1999. Política Nacional para a Integração da Pessoa Portadora de Deficiência [página na internet]. Brasília (DF). Available at: <http://portal.mec.gov.br/seesp/arquivos/pdf/dec3298.pdf>. Accessed on 2012 Mai 01.
- (2) Instituto Brasileiro de Geografia e Estatística. Censo 2010 [página na internet]. 2013 Available at: http://www.ibge.gov.br/home/estatistica/populacao/censo2010/caracteristicas_religiao_deficiencia/caracteristicas_religiao_deficiencia_tab_gregioes_xls.shtm. Accessed on 2013 Aug 14.
- (3) Ministério da Saúde (BR). Política Nacional de Saúde da Pessoa com Deficiência [página na internet]. Brasília (DF): MS; 2010 Available at: http://bvsms.saude.gov.br/bvs/publicacoes/politica_nacional_pessoa_com_deficiencia.pdf. Accessed on 2012 Mai 01.
- (4) Ministério da Saúde (BR) Política Nacional de Humanização [página na internet]. Brasília (DF): MS; 2004 Available at: http://bvsms.saude.gov.br/bvs/publicacoes/humanizasus_2004.pdf. Accessed on 2013 Aug 19.
- (5) Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Política nacional de promoção da saúde/Ministério da Saúde, Secretaria de Atenção à Saúde [página na internet]. Brasília (DF): MS; 2006 Available at: <http://portal.saude.gov.br/portal/arquivos/pdf/pactovolume7.pdf>. Accessed on 2013 Aug 19.