



ORIGINAL ARTICLE

**ASPECTS RELATED TO THE STRUCTURE OF THE PRIMARY CARE FOR
TREATMENT OF PATIENTS WITH WOUNDS**

**ASPECTOS RELACIONADOS À ESTRUTURA DA ATENÇÃO BÁSICA PARA O TRATAMENTO DE
PORTADORES DE FERIDAS**

**ASPECTOS RELACIONADOS CON LA ESTRUCTURA DE LA ATENCIÓN PRIMARIA PARA EL TRATAMIENTO DE
PACIENTES CON HERIDAS**

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ABSTRACT

Objectives: to evaluate the aspects related to the structure of Primary Care in city of Recife-PE, Brazil, for the treatment of patients with wounds, specifically, with regard to human and material resources. **Methods:** descriptive study in family health units in the city of Recife (n = 93) with a sample of 112 nurses. Data were collected from February to August 2010. For data collection, we held a structured interview with the nurses of their respective ESFs, through a form consisting of questions regarding the training of the nursing worker, professional responsible for bandages and the products available to make them. We used as an additional source of data, the record book of bandages and procedures and the dressing form of that USF. The descriptive and statistical analyzes were performed by means of the software Statistical Package for the Social Sciences (SPSS) version 14.0. **Results:** more than half of nurses were working in the primary care for more than five years (63.4%). Most of them attended specialization course in collective health or family health (98.2%) and more than half of them do not have any qualification course (66.1%). The execution of the bandages is an exclusive activity of the nursing technician (99.1%). With regard to the resources needed for the treatment of wounds, those units were equipped with basic items and their use, often, were controversial. **Conclusion:** these results suggest the need of access from the Nursing professionals to the adequate material resources, specific trainings and the development of an interdisciplinary work as indispensable factors for that the necessary conditions for the establishment of effective therapeutic conduct can be enabled. **Descriptors:** wound healing; primary care; nursing care.

RESUMO

Objetivos: avaliar os aspectos relacionados à estrutura da Atenção Básica da cidade do Recife para o tratamento de portadores de feridas, especificamente, quanto aos recursos humanos e materiais. **Método:** estudo descritivo, realizado nas unidades de saúde da família da cidade do Recife (n=93), com amostra de 112 enfermeiros. Os dados foram coletados de fevereiro a agosto de 2010. A coleta de dados ocorreu por meio de entrevista estruturada com formulário constando de questões relativas à: capacitação dos enfermeiros, profissional responsável pelos curativos e produtos disponíveis para realização dos mesmos. Foi utilizado como fonte adicional de dados, o livro de registro de curativos e procedimentos e o formulário de penso da USF. As análises estatísticas descritivas foram realizadas pelo programa Statistical Package for the Social Sciences (SPSS) versão 14.0. **Resultados:** mais da metade dos enfermeiros atuavam na atenção básica há mais de cinco anos (63,4%); a maioria cursou especialização em saúde coletiva ou saúde da família (98,2%) e mais da metade não possuía capacitação (66,1%). A execução dos curativos é atividade exclusiva do técnico de enfermagem (99,1%). Em relação aos recursos necessários ao tratamento de feridas, as unidades eram dotadas daqueles itens básicos e de uso muitas vezes controverso. **Conclusão:** os resultados evocam a necessidade do acesso dos profissionais de enfermagem a recursos materiais adequados, a treinamentos específicos e ao desenvolvimento do trabalho interdisciplinar como fatores indispensáveis às condições necessárias para o estabelecimento de condutas terapêuticas eficazes. **Descritores:** cicatrização de feridas; atenção básica; assistência de enfermagem.

RESUMEN

Objetivos: evaluar los aspectos relativos a la estructura de la Atención Primaria de la ciudad de Recife para el tratamiento de heridos, específicamente respecto a recursos humanos y materiales. **Método:** estudio descriptivo, realizado en las unidades de salud de la familia de la ciudad de Recife (n=93), con un muestreo de 112 enfermeros. Los datos se recogieron desde febrero a agosto de 2010 por medio de entrevista estructurada con cuestionario sobre preguntas relativas a capacitación de enfermeros, profesional responsable por los emplastos y productos disponibles para la realización de los mismos. Se empleó como fuente adicional de datos el libro de registro de emplastos y procedimientos y el cuestionario de curativos de la USF. Los análisis estadísticos descriptivos se realizaron por medio del programa Statistical Package for the Social Sciences (SPSS) versión 14.0. **Resultados:** más de la mitad de los enfermeros actuaban en la atención primaria desde hace más de cinco años (63,4%); la mayoría cursó especialización en sanidad colectiva o sanidad de familia (98,2%) y más de la mitad no tenía capacitación (66,1%). La ejecución de los emplastos es la actividad exclusiva del técnico de enfermería (99,1%). En relación a los recursos necesarios para el tratamiento de heridas, las unidades estaban dotadas de aquellos elementos básicos y de uso muchas veces controvertido. **Conclusión:** los resultados evocan la necesidad de acceso de los profesionales de enfermería a recursos materiales adecuados, formaciones específicas y al desarrollo del trabajo interdisciplinario como factores indispensables para el establecimiento de conductas terapéuticas eficaces. **Descritores:** cicatrización de heridas; atención primaria; asistencia de enfermería.

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INTRODUCTION

Currently, the Family Health Strategy attends more than 191 million people across the country (Brazil), with 31.660 Family Health Teams - *Equipes de Saúde da Família* (ESF) implemented and, with a percentage of population coverage of approximately 52.23%.¹

The increasing expansion of ESF redefined its importance, as a reorganizing strategy of primary care, and placed in the center of discussion issues related to the qualification of teams and providing solutions in terms of producing positive results in health indicators and life quality of people assisted by this project.²

The importance of assessment in health systems, for the Brazilian context, has been highlighted in several moments of discussion on health policies and practices in services, and it follows a global trend. In some countries, the assessment already constitutes itself in an institutionalized practice and their results contribute to the formulation of its policies and health practices, however, in Brazil, the processes used are still incipient.³

In the assessment of the quality of the health, on of the benchmarks, widely used by the researchers and government bodies, is the Donabedian Model, according to which the activities of quality assurance can be divided into two parts: "system planning and resources" and "execution of monitoring and adjustments".^{4,5}

The system planning and resources, later called structure refers to the prerequisites to the care, such as: physical space, human and material resources. But, without sufficient amount of resources and good quality, it is not possible to provide the best care that potentially could be done. In addition, the health system should be planned to provide a good care instead of creating obstacles to this.⁴At this point we should introduce, among the problems to be faced by ESFs, the thematic on treating of wounds that, undoubtedly, represents a public health problem, although silent, since the literature lacks specific information about this level of attention (care).

Advances in the understanding of the physiology of healing become the traditional treatment, with dry bandage, obsolete. The critical parameter of performance for all bandages is the provision of a moist environment, serving other goals such as: pain reduction, removal of non-viable tissue and

infection prevention, associating the use of these products undoubtedly to a quality care.⁶

As the nurse is related to wound care, it is necessary to know about the resources which they are use in the pursuit of quality of care.⁷ In this sense, a study on the structure related to the treatment of wounds, in addition to producing knowledge, contributes to the institutionalization of assessment in the *Sistema Único de Saúde* - (SUS) and supports the decision-making process for management in the ambit of primary care.

This study aims to assess the aspects related to the structure of primary care of the city of Recife, for treatment of patients with wounds, specifically, with regard to human and material resources.

METHOD

It is a study of descriptive and quantitative approach, performed in family health units - *Unidades de Saúde da Família* - (USFs) in Recife-PE, Brazil, from February to August 2010. During this period, the city of Recife had a population of approximately 1.536.934 inhabitants. The Family Health Strategy had 106 units distributed in six health districts (HD). Of these units, 93 were randomly selected (88%). The number of Family Health Teams - *Equipes de Saúde da Família* - (ESFs) was 128 and the sample of the study consisted of 112 nurses of these teams (87.5%). We excluded those professionals who were on vacation, maternity leave or medical leave during the research.

For data collection, we held a structured interview with the nurses of their respective ESFs, through a form consisting of questions regarding the training of the nursing worker, professional responsible for bandages and the products available to make them.

We used as an additional source of data, the record book of bandages and procedures and the dressing form of that USF.

The study was conducted following the requirements of Resolution 196/96 for research involving human subjects and, approved by the Ethics Research Committee with Human Beings (CEP) from the *Universidade de Pernambuco* (CAAE: 0069.0.097.000-09). Each subject, who was duly clarified, agreed and signed the Free and Informed Consent Form (FICF).

The descriptive and statistical analyzes were performed by means of the software Statistical Package for the Social Sciences (SPSS) version 14.0. We estimated

frequencies, measure of central tendency (mean or average) and dispersion (standard deviation - SD) and, for continuous variables, the analysis of variance (ANOVA) and *Scheffé* test to compare different mean values of districts with regard to the variables related to the products available. The level of significance was considered for p values less than 0.05.

The Table 1 presents the results regarding the qualification of nurses of ESFs of the city of Recife. It should be observed that almost every sample has already held some specialization course (99.1%), and the highest frequency of them attended specialization course in collective health or in the Family Health Program - (*Programa de Saúde da Família*, [PSF]) (98.2%).

RESULTS

Table 1. Qualification of nurses of ESFs of the city of Recife. Recife-PE, Brazil. 2010.

Variables	n=112	%
Specialization		
Yes	111	99,1
No	1	0,9
Specialization course in collective health or in the Family Health Program		
Yes	110	98,2
No	2	1,8
Qualification		
Yes	38	33,9
No	74	66,1
Work time in PSF		
< 1 year	3	2,7
1-5 years	38	33,9
> 5 years	71	63,4

As can be seen in the Table 2, 99.1% of nurses interviewed reported that the professional responsible for the execution of

bandages is the nurse technician and, only one reported that this procedure is performed by the caregiver.

Table 2. Human Resources responsible for the practice of bandages in Primary Care of the city of Recife-PE, Brazil. 2010.

HD	Human resources				Total	%
	Nurs. Tech.	%	Caregiver	%		
I	9	8,1	1	100	10	100
II	23	20,7	–	–	23	100
III	17	15,3	–	–	17	100
IV	12	10,8	–	–	12	100
V	16	14,4	–	–	16	100
VI	34	30,6	–	–	34	100
TOTAL	111	99,1	1	0,9	112	100

The cleaning and covering products used in PSFs in the city of Recife are the following: physiological serum, gauze, surgical compress, crepe bandage and adhesive tape. As can be observed in the Table 3, the quantitative which showed statistically significant

differences ($p < 0.05$) among the six Health Districts were physiological serum and crepe bandage, with higher averages found for the HD3 (47.38 ± 27.12) and 4 (184.92 ± 90.32) respectively.

Table 3. Cleaning and covering products. Recife-PE, Brazil. 2010.

Product	HD	Average \pm SD	n	p
Physiological serum (boxes with 12 units of 500ml)	I	–	3,66	0,005
	II	22,00 \pm 2,83		
	III	47,38 \pm 27,12		
	IV	–		
	V	120,00 \pm 113,14		
	VI	43,00 \pm 15,22		
Gaze (packages with 500 units)	I	18,38 \pm 16,3	1,07	0,382
	II	16,59 \pm 8,38		
	III	12,18 \pm 8,61		
	IV	21,45 \pm 5,43		
	V	19,15 \pm 5,94		
	VI	26,50 \pm 36,51		
Surgical compress (packages with 50 units 23X25cm)	I	2,0	–	–
	II	17,00 \pm 1,41		
	III	–		
	IV	–		
	V	–		
	VI	–		
Crepe bandage (packages with 12 units)	I	121,50 \pm 85,81	3,01	0,015
	II	179,18 \pm 113,86		
	III	90,53 \pm 68,78		
	IV	184,92 \pm 90,32		
	V	159,85 \pm 92,24		
	VI	175,58 \pm 69,32		
Adhesive tape (units of 10X4,5m)	I	6,13 \pm 3,39	7,78	0,000
	II	7,29 \pm 2,83		
	III	3,88 \pm 2,28		
	IV	3,92 \pm 1,56		
	V	4,62 \pm 1,26		
	VI	9,69 \pm 5,73		

– Without available information

In the classification of antiseptics and antibiotics used by PSFs of the city of Recife there are: PVPI (topic and degerming), silver sulfadiazine and neomycin sulfate. In the results shown in the Table 4 it can be seen that the greater average among the products

is related to the neomycin sulfate and it was not found statistically significant difference for the averages between the HDs, unlike what was observed with regard to the other products which expressed statistically significant differences between the HDs.

Table 4. Antiseptics and antimicrobials. Recife-PE, Brazil. 2010.

Product	HD	Average \pm SD	n	p
PVPI topic 10% (units of 1 liter)	I	1,14 \pm 0,38	5,16	0,000
	II	2,36 \pm 1,45		
	III	1,07 \pm 0,27		
	IV	1,75 \pm 1,05		
	V	1,08 \pm 0,29		
	VI	2,12 \pm 1,05		
PVPI degerming (units of 1 liter)	I	1,00 \pm 0,00	6,01	0,000
	II	1,77 \pm 0,59		
	III	1,09 \pm 0,30		
	IV	3,33 \pm 1,86		
	V	1,56 \pm 0,53		
	VI	1,95 \pm 1,15		
Silver sulfadiazine (Pot of 400g)	I	1,83 \pm 0,75	3,16	0,013
	II	1,20 \pm 0,42		
	III	2,08 \pm 1,11		
	IV	1,38 \pm 0,74		
	V	2,80 \pm 1,62		
	VI	2,05 \pm 0,89		
Neomycin sulfate (units of 20g)	I	100,0 \pm 86,60	1,65	0,160
	II	69,17 \pm 92,88		
	III	67,67 \pm 40,57		
	IV	19,29 \pm 06,07		
	V	70,00 \pm 49,65		
	VI	92,73 \pm 64,62		

The Table 5 presents the results concerning bioactive products and debridings, as it turns out, only two products are used (EFA and Collagenase). We observed a statistically

significant difference for the averages of EFA among six HDs ($p < 0.05$), with higher average found for the HD2.

Table 5. Bioactive products and debridings. Recife-PE, Brazil. 2010.

Product	HD	Average \pm DP	n	p
EFA (units of 200ml)	I	4,20 \pm 1,30	4,69	0,002
	II	6,78 \pm 3,70		
	III	1,44 \pm 0,88		
	IV	3,25 \pm 2,06		
	V	4,00 \pm 1,42		
	VI	4,43 \pm 2,34		
Collagenase (units od 30g)	I	16,13 \pm 06,85	1,71	0,145
	II	34,15 \pm 51,95		
	III	13,86 \pm 12,29		
	IV	22,00 \pm 16,43		
	V	12,27 \pm 06,75		
	VI	28,29 \pm 14,72		

DISCUSSION

The occurrence of wounds is undoubtedly a public health problem and its load rises rapidly due to the population aging and the marked increase in the incidence of chronic diseases such as diabetes and vascular diseases worldwide, consequently, leading to high costs with the health cares.^{8,9}

The structure of health services needed for tackling of this situation requires trained professionals and materials which facilitate healing of the lesion, considering a fewer number of bandage changes, as well as less pain and suffering of the clientele attended..

In view of that, an investigation with regard to the structure of primary care provides to the managers, care staff and researchers a picture of the current scenario, supporting the possible interventions. Regarding this matter, we have no notice about other study, in Brazil, which present the thematic here described, so there are not, at present time, parameters for comparison of results.

Regarding human resources, the results show that more than half of the nurses of ESFs work in the primary care for more than five years. Most of them attended specialization in collective health or family health. Nevertheless, more than half of them do not have any training. Nevertheless, more than half of them do not have any training. Studies have shown that despite the professional regulation contemplates private clinics activities of nurses, aimed at primary health care, the training to the performance of those activities has been recognized as insufficient.^{10,11}

Some authors discuss, specifically, the problem of nursing education curriculum on public health. They argue that while the courses prepare the assistential nurses for current health programs and, also, educators in the area of prevention, the reality of the

job requires a technically skilled professional to perform complex functions of assistance, in a general way. Within the perspective of the SUS, the practice requires a vision of integrated health care and not a mere disease prevention.¹²

The divergence between teaching and practice is often a focus of dissatisfaction among nurses, who show technical uncertainty and lack of preparation to execute assistance activities required in the health units.

All this is exacerbated when one considers the work time in the primary care, the lack of preparation and, with regard to the treatment of wounds, the technological revolution that is going through this area, with a growing number of bioactive products and available cost-effective in the market, which are requiring from nursing professional a knowledge necessary for their indication and use.¹³

The monitoring of the bearer of wounds should be performed at regular intervals, in order to assess the effectiveness of interventions, behaviors and treatment; identify factors that may be interfering in the treatment; reassess the products, coverings and type of curative techniques and beyond the reassessment, the redesigning of care, according to the need.⁹

The completion of curative is an exclusive activity of the nursing technician, according to the results presented. These professionals need, therefore, of adequate technical preparation to provide quality care. The adoption of protocols and implementation of training processes for nursing technicians on the execution of this procedure could make possible the improvement of professional performance and, consequently, ensure certain quantitative and qualitative patterns of the health care.

The limitations of this study include lack, in the instrument of data collection, of items on the characterization of these professionals and their practice in treatment of wounds in

the primary care.

Regarding to the resources necessary for the treatment of wounds, which can be seen from the results presented, is that the USFs are endowed of those basic items and, often, with controversial usage.

Study performed in the city of Natal-RN, Brazil, with elderly patients with venous ulcers, treated at primary level, noted the lack of the curative kit, ranking the care as fragmented, unsystematic and with low level of resoluteness, since it interferes, directly, in the maintenance of the chronicity of disease.⁹

Although it was not the aim of this study to estimate the number of patients with wounds treated by this level of care, the quantitative of products, in general, in principle seems insufficient when it should be considered the area covered by each Health District (HD), with an average of 14 neighborhoods with lower and upper limits of 11 and 29, respectively.

A proper cleaning to create a nice environment for healing is, perhaps, the key component in the treatment of acute and chronic wounds.

The cleaning product used in the PSF of the city of Recife is the physiological serum. Although several solutions are recommended for the cleaning of wounds, the physiological serum is favored because it is an isotonic solution that does not interfere with normal healing process. Tap water has been presented by some authors to be easily accessible, efficient and cost-effective, however, there is still no consensus on its use.¹⁴⁻⁵

For the covering, the products found in the research were: gauze, surgical compress, crepe bandage and adhesive tape. Regardless of the amount of these products compared with demand attended, it is observed that, in principle, they are items which correspond to the theory of dry environment for wound healing, since some years it is obsolete, in view of favoring the formation of a crust on the wound surface by means of dehydration of the exudate, and devitalized tissues, representing a barrier to the healing.¹⁶

The crust retards the healing, since it hampers the movement of the epidermal cells, and it may lead to undesirable cosmetic results.¹⁶

When a wound is covered with dry gauze, the quality of healing is impaired due to adherence of the gauze to the wound surface. This causes complete dryness of its board and increases the risk of trauma during the

bandage change.¹⁶

Wounds treated in a moist environment with occlusive coverings do not create crusts. Therefore, the epidermal cells move themselves rapidly over the surface of the dermis, through the exudate collected in the interface of the covering-board of the wound. The application of a full occlusive covering or semipermeable also prevents secondary damages and dehydration.¹⁶

With regard to the category of antiseptics and antimicrobials, in the PSF of the city of Recife are used: PVPI, in topic and degerming presentations, silver sulfadiazine and neomycin sulfate.

The antiseptics are hypoallergenic substances, with low causticity, of lethal action or inhibiting on the microbial reproduction, for application over the skin and mucosa.¹⁷

The iodine is an active substance against bacteria, mycobacteria and fungi. When it is applied on wounds, it should be diluted to 1% or if it is used according the concentration shown, must be applied for 3 to 4 minutes and, then, completely removed by irrigation.¹⁶

Study of literature review on use of topic iodophor in chronic wounds showed favorable results to its use in 50% of the analyzed articles.¹⁷

The silver has been used widely due to its antimicrobial properties. When it is released in moist environment increases the rate of reepithelialization in 40%. Its use should be limited to a period of 2 to 4 weeks. The cream formulation found in USFs of Recife has like disadvantage the development of mucilaginous slough. A variety of semi-occlusive coverings nowadays available on the market overcomes this disadvantage, because it releases the silver substance gradually.^{6,16}

Also in the category of antimicrobial, it should be attentive to the large amount of neomycin sulfate (mean = 509.0 units / HD / month). This product has like indications: ulcerative lesions in the skin, burns and infected wounds; However, studies show high potential of irritation both in normal skin as in damaged skin, and furthermore a low effectiveness in healing.¹⁸

The use of neomycin sulfate in deep wounds or in large burns can cause systemic absorption; that is why, the risk must be assessed. Systemic absorption can be significant and lead to risk of nephrotoxicity or ototoxicity. In addition, the prolonged local use must be avoided, because this may lead to

sensitization of the skin.¹⁹

The resources available in PSFs of the city of Recife with regard to the category of bioactive products and debridings correspond only to the essential fatty acids (EFA) and collagenase.

In the last decade, the topic use of compounds with essential fatty acids for the treatment of wounds increased in Brazil. EFAs promote chemotaxis and angiogenesis, keep the environment moist, accelerate the process of tissue granulation, facilitate the entry of growth factors, promotes mitosis and cell proliferation, acting on the cell membrane, increasing its permeability, assists autolytic debridement and are bactericidal to the kind *S. aureus*.^{20,21}

The results of two review articles suggest that the majority of published studies still refer to its use in animals and that relevant publications are still scarce too. The efficiency of this product will become more evident as that cellular, molecular and clinical studies are conducted and correlated.²⁰⁻¹

The enzymatic debridement is a technique often used for the removal of necrotic tissue. The proteases with specificity to destroy collagen in necrotic tissue provide a selective procedure, just digesting the denatured collagen, without damaging the viable tissue. Recent researches investigating their chemical and biological properties, including healing in animal models, power of digestion of different types of collagen, activity of cellular migration and compatibility with various types of coverings show that collagenase is an effective, selective and safe debriding agent.²²

However, the enzymatic debridement is processed in a prolonged mode (3-30 days), requiring daily bandage changes and it is inefficient in the presence of bedsore (eschar), acting as an adjuvant to surgical debridement and, thus, it may not be cost-effective for treatment of wounds in the primary care.²³

CONCLUSION

The health assessment, in Brazil, is presented in a context in which the processes are still incipient. Having like fundamental purpose to support decision-making processes in the ambit of the health system. Among other goals, it should support the identification of problems and redirect actions and developed services and assess the implementation of new practices in the routine of professionals.

The confrontation of the epidemiological picture of the occurrence of wounds of various etiologies and the results presented in this study, with regard to the aspects related to the structure of the primary care, point out to the access from the Nursing professionals to the adequate material resources, specific trainings and the development of an interdisciplinary work as indispensable factors for that the necessary conditions for the establishment of effective therapeutic conduct can be enabled.

It is essential that primary care nurses have a good knowledge about bioactive products to decide, appropriately, regarding the strategies for wound healing.

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