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RESEARCH

Conhecimento e prática de trabalhadores, profissionais e gestores sobre os resíduos de serviços de saúde

Knowledge and practice of workers, professionals and managers on waste of health services

Conocimiento y práctica de trabajadores, profesionales y directivo de losresiduos de los servicios de salud

Walkiria de Carvalho Mendes [1], Maria do Livramento Fortes Figueiredo [2] , Maria do Amparo Salmito [3], Ednaldo Cavalcante de Araújo [4] , Telma Maria Evangelista de Araújo [5]

ABSTRACT

Objective: To assess the knowledge and practice of workers, professionals and managers about the Healthcare Waste in a reference institute in tropical and communicable diseases Teresina (PI). **Method:** A descriptive, observational study with quantitative analysis, conducted from 01 to 30 March 2012. The study population was composed of: 49 workers, 124 health workers and 11 managers sector. Data were collected from interviews, using three instruments with a specific script to each group's structured. The study was approved by the ethics committee on research, CEP-UFPI with CAAE: 0210.0.045.000-11. **Results:** 90% of workers, 95.2% of professional and 54.5% of the managers demonstrated ignorance of the existence of the Plan for Waste Management Health Service (PGRSS) of the institution. **Conclusion:** There was a deficit in the knowledge of workers, professionals and managers about Plan for Waste Management Health Service and improper practices in the management of Healthcare Waste. **Descritores:** Knowledge, Medical waste, Waste management, Nursing.

RESUMO

Objetivo: Avaliar o conhecimento e prática de trabalhadores, profissionais e gestores sobre os Resíduos de Serviços de Saúde (RSS) de um instituto de referência em doenças tropicais e transmissíveis de Teresina(PI). **Método:** Estudo descritivo e observacional, com análise quantitativa, realizada no período de 01 a 30 de março de 2012. A população do estudo foi composta por: 49 trabalhadores, 124 profissionais de saúde e 11 gestores setoriais. Os dados foram coletados a partir de entrevistas, utilizando-se três instrumentos com roteiros estruturados específicos para cada grupo de sujeitos. A pesquisa foi aprovada pelo comitê de ética em pesquisa, CEP-UFPI com CAAE: 0210.0.045.000-11. **Resultados:** 90% dos trabalhadores, 95,2% dos profissionais e 54,5% dos gestores demonstraram desconhecimento da existência do Plano de Gerenciamento de Resíduos de Serviço de Saúde (PGRSS) da instituição. **Conclusão:** Evidenciou-se déficit no conhecimento dos trabalhadores, profissionais e gestores acerca do PGRSS, bem como práticas inadequadas no manejo dos RSS. **Descritores:** Conhecimento, Resíduos de serviços de saúde, Gerenciamento, Manejo, Enfermagem.

RESUMEN

Objetivo: Evaluar el conocimiento y la práctica de los trabajadores, los profesionales y los gestores sobre los Residuos de Servicios de Salud de un instituto de referencia en enfermedades tropicales y transmisibles Teresina (PI) **Método:** Estudio descriptivo, observacional de un análisis cuantitativo, realizado entre 01 al 30 marzo, 2012. La población de estudio estuvo compuesta por: 49 trabajadores, 124 trabajadores de la salud y 11 gerentes de sector. Los datos fueron recogidos a partir de entrevistas, utilizando tres instrumentos específicos para las hojas de ruta estructurada de cada grupo. El estudio fue aprobado por el comité de ética en la investigación, CEP-UFPI con CAAE: 0210.0.045.000-11. **Resultados:** 90% de los trabajadores, 95,2% de los profesionales y 54,5% de los administradores demostraron desconocimiento de la existencia del Plan de Servicio de Salud de Gestión de Residuos (PGRSS) de la institución. **Conclusión:** Se observó déficit en los trabajadores del conocimiento, profesionales y gestores sobre PGRSS y las prácticas inadecuadas en el manejo de RSS. **Descriptores:** Conocimiento, Residuos sanitarios, Administración de residuos, Enfermería

1 Enfermeira. Mestre em Enfermagem pelo Programa de Pós-Graduação em Enfermagem da Universidade Federal do Piauí (UFPI). Gerente de Enfermagem do Instituto de Doenças Tropicais Natan Portela (IDTNP). E-mail: wall_mendes@hotmail.com 2 Enfermeira. Doutora. Professora da Graduação e Pós-Graduação em Enfermagem da Universidade Federal do Piauí (UFPI). E-mail: liff@ufpi.edu.br 3 Professora, Graduação em medicina, Centro Universitário UNINOVAFAPI E-mail: normacely@uol.com.br 4 Enfermeiro. Professor da Graduação e Pós Graduação em enfermagem da Universidade Federal de Pernambuco. E-mail: ednenjp@gmail.com 5 Enfermeira. Doutora. Professora da Graduação e Pós-Graduação em Enfermagem da Universidade Federal do Piauí (UFPI). E-mail: telmaevangelista@gmail.com

INTRODUCTION

Excessive generation of solid waste is one of the biggest challenges faced by modern society, far surpassing the capacity of absorption and degradation of nature, causing damage to public health and the environment. In large cities this phenomenon is perceived more intensely due to the higher population density in urban areas, combined with the accelerated rate of industrialization and consumption of disposable and / or recyclable products, factors that contribute to aggravate environmental impacts.

For coping and / or minimization of impacts and damage to the environment and living beings, particularly humans, is required joint action with the involvement of all social actors: society, leaders, managers, entrepreneurs, professionals, technical education and care institutions which can contribute significantly to the production of knowledge and incentives with sustainable actions in response to environmental, social and economic issues arising from this problematic.[1-2]

In Brazil legislation facing the proper management of solid waste has been expanded with the approval of Law 12.305/2010 regarding the National Solid Waste (PNRS) comprising the residues of Health Services (RSS). This law brings together a set of principles, objectives and actions to be adopted by the Federal Government, alone or in cooperation with States, Federal District, municipalities and / or private, with a view to joint management and the environmentally adequate management of solid waste, integrating with other existing environmental laws. The PNRS filled a gap in existing regulations establishing, even, deadlines for closure of landfills by 2014.[3]

The National Health Surveillance Agency (ANVISA) and the National Environmental Council (CONAMA) are organs responsible for legislation of RSS. According to Resolution 306/04 of ANVISA, there are procedures to be adopted according to the type of waste generated, and the institution / generating company monitor and ensure safe treatment and referral at all stages of the Plan of Waste Management of Health Services (PGRSS) .[4-5]

The PGRSS is a mandatory document, individualized character, based on scientific and legal standards should include the set of operations carried out within the institution, including all stages of the process: generation, segregation, disposal, packaging, identification, internal collection, temporary and external storage, hygiene, occupational safety, transportation and disposal. The preparation of PGRSS is incumbent upon an higher education professional, enabled by the respective class council.[6-7]

According to the regulations of the Ministry of Health (MOH), the elaboration, deployment and development of PGRSS should involve hygiene and cleaning sectors, Commissions for Hospital Infection Control (CCIH) and Biosafety in the absence of the earliest

and the Services in Safety Engineering and Occupational Medicine (SESMT) where there is mandatory existence of these, covering the whole community of the establishment, in accordance with the regulations. Regarding the conservation and sustainability of natural resources and environment the plan shall be prepared following the guidelines of CONAMA Resolution (358/05). [4,5,8]

The PGRSS aims to achieve the minimization of waste generated, the correct management obeying to the biosafety regulations aiming to protecting workers, public health and reducing environmental impacts. It is one of the documents that compose the licensing process with the environmental agency and health surveillance.[9]

In this context, the nurse is one of qualified professionals to be ahead of the development and implementation of the management plan, since experiences and coordinates situations for assistance, management and continuing education, associated with the fact of being the health care professional focused in prevention promotion and protection of health, being able to act in PGRSS and be the nursing staff most involved in generating infectious waste and needlestick in health institutions. [10-1]

Despite the RSS represent only about 1-3% of total solid waste produced by its features deserve special attention because they offer potential risks to public health and the environment when managed improperly, because they contain pathogenic microorganisms, chemicals and radioactive waste.[1 2]

Empirically, It is observed on everyday health institutions, including the study setting, failures and difficulties at various stages of handling of RSS, which appears as a serious issue to be investigated, so that from the evidence found it can plan and implement actions that enable the adequacy of management of such wastes and the consequent minimization of risks and impacts to workers, patients, the general community and the environment.

This study aimed to assess the knowledge and practice of workers, health professionals and industry managers about PGRSS and management of an institute reference in tropical and transmissible diseases.

It is hoped that this study contribute to the establishment and implementation of the Plan of Waste Management of Health Services (PGRSS) at the institution under study.

METHOD

Descriptive, observational study with a quantitative approach, performed in an Institute in treatment of tropical and communicable diseases in the State of Piauí. The source population of the study consisted of 339 participants. However, the study population consisted of simple random sample taking into account the following formula n= N.no/N+no,??? , where no = 1/e2, resulting in n = 184, of which 49 were workers (laundry, general services and nutrition), 124 health professionals (physicians, nurses, physical therapists, nutritionists, biochemists, psychologists and social care) and 11 sector managers.

Data were collected from 01 to 30 March 2012, from interviews, in which the three instruments specific to each group's structured scripts were used, addressing the knowledge and management practices of the institution used in RSS health.

Proceeded to the organization of data with typing in Excel spreadsheet and subsequently exported to the Statistical Package for Social Sciences (SPSS) for Windows, version 18.0 for descriptive statistical analysis. The results were presented in tables and discussed based on the references adopted in the current Brazilian legislation to RSS, CONAMA Resolution No. 358/05 and the Board Resolution - RDC 306/04.[4]

The ethical aspects of the study were guaranteed to participants by signing the consent form, prepared according to Resolution 196/96 CNS / MS, repealed by Resolution No. 466/12 of the National Health Council (BRAZIL, 2012b). Through this instrument the participants had the assurance of confidentiality, privacy, and non-use of information to the detriment of the people. The search began after the approval of the Research Project by the Federal University of Piauí Ethics Committee (CEP) with CAAE: 0210.0.045.000-11.

RESULTS AND DISCUSSION

The results of the study are presented in Tables 1, 2, 3 and 4 below:

It was observed an average age of 44 years for health workers, 39.97 for healthcare professionals to 40.82 and to managers, mostly females and length of service ranging from 1 to 36 years (Table 1).

Table 1 - Profile of workers, professionals and managers of the Institution for the variables: age, sex, occupation, and length of service - Teresina - PI, 2012 (n = 184).

Characteristics	Workers	Health professional	Manager
	n (%)	n (%)	n (%)
	49 (26,63)	124 (67,39)	11 (5,95)
Age Group (Years)			
Minimum	23	26	2 4
Maxim	62	62	54
Average	44	39,97	40,82
Standard Deviation	11,82	9,89	8,74
Occupation			
Cleaning	16 (32,7)	-	-
Laundry	18 (36,7)	-	-

Nutrition And Dietetics	15 (30,6)	-	-
Total	49 (100)		
Does Not Apply	-	124 (100)	11 (100)
Sex			
Male	20 (40,8)	19 (15,3)	2 (18,2)
Female	29 (59,2)	105 (84,7)	9 (81,8)
Total	49 (100)	124 (100)	11 (100)
Length Of Service (Years)			
Minimum	1	1	1
Maximum	36	32	25
Average	17,08	10,92	2,64
Standard Deviation	9,85	9,09	7,80

Source: Direct research

A high average (90%) of health workers are unaware of the existence of the institution PGRSS, demonstrating failures in operational processes from segregation to the final destination of the waste.

Table 2 - Knowledge reported by workers involved with RSS in an Reference Institute for Tropical Diseases - Teresina - PI, 2012 (n = 49).

Tabela 2 - Conhecimentos referidos pelos trabalhadores envolvidos com RSS de um Instituto de referência em Doenças Tropicais - Teresina - PI, 2012 (n= 49).

Questions	Yes(%)	No(%)	Does not know n(%)
Have knowledge of the existence of PGRSS?	5 (10)	44(90)	-
There implementation of this Plan of GRSS in all units?	-	48(98)	1 (2)
The RSS are segregated and weighed before final storage?	-	31(63,3)	18 (36,7)
The handling of RSS in the producing units is done:			
Using appropriate containers	10(20,4)	-	-
Along with other waste	19(38,8)		
Do not know	-	-	20 (40,8)
The internal transport of RSS-producing units until the end of storage:			

Manually	11(22,4)	-	-
In open carts	7 (14,3)	-	-
In closed carts	8 (16,3)	-	-
In car food	2 (4,1)	-	-
Do not know	-	-	21 (42,9)
There are daily external collection of RSS by outsourced company	31(63,3)	18(37,6)	-
What is the frequency of daily collected on the units?			
3 to 4 times per day	11(22,4)	-	-
2 times per day	17(34,7)	-	-
Do not know	-	-	21 (42,9)

Source: Direct Research

95.2% of the interviewed health professionals are unaware of the existence of the PGRSS in the institution and the local and final waste disposal site. For special care in the handling of RSS, 56.5% of these professionals do not realize special care.

Tabela 3 – Conhecimentos referidos pelos profissionais de saúde acerca dos RSS de um Instituto de Doenças Tropicais - Teresina - PI, 2012 (n=124).

Questões	Sim n (%)	Não n (%)	Não sabe n (%)
Exists PGRSS the Institution			
	6 (4,8)	118(95,2)	-
You know what's solid waste health	59(47,6)	63 (52,4)	-
Performs related care to RSS	54(43,5)	70 (56,5)	-
Know allocations, location and final of infectious waste generated in your industry	6 (4,8)	118(95,2)	-
Wash	4 (3,2)	-	-
Segregate	104(83,9)	-	-
Transport	8 (6,5)	-	-
Clean	1 (0,8)	-	-
Do Not Know	-	-	7(5,6)

Source: Direct Research

54.5% of the sectoral managers interviewed demonstrated ignore the PGRSS the institution. While 81.8% are unaware of the laws governing the plan as well as the existence

of an environmental license for the operation of the institution, the risk map and the final destination of RSS produced in the service studied.

Table 4 - Knowledge said the managers of the Institute of Reference in tropical diseases about RSS - Teresina - PI, 2012 (n = 11).

Questions	Yes n(%)	No n(%)	Does not know n(%)
Exists PGRSS the institution?	4 (36,4)	6 (54,5)	1 (9,1)
Knows the laws governing the PGRSS	2 (18,2)	9 (81,8)	-
The plan is consulted to guide the conduct to be taken?	1 (9,1)	7 (63,6)	3 (27,3)
The PGRSS the institution was approved by the State Sanitary Surveillance	-	2 (18,2)	9 (81,8)
Existence of environmental permit for operation of the institution	2 (18,2)	9 (81,8)	-
The staff responsible for the collection and management of RSS were trained and receive continuing education training	8 (72,7)	3 (27,3)	-
There is special collection of RSS in the institution	6 (54,5)	5 (45,5)	-
There is specific shelter for RSS	8 (72,7)	2 (18,2)	1 (9,1)
There is segregation of RSS within the institution	2 (18,2)	8 (72,7)	1 (9,1)
There is the risk map in the institution	-	9 (81,8)	2 (18,2)
There are appropriate boxes for disposal of needlestick	11 (100)	-	-
What is the final destination of RSS:			
landfill	2 (18,2)	-	-
dump	-	-	-
Do not know	-	-	9 (81,8)
How often the collection?			
daily	9 (81,8)	-	-
alternate days	-	-	-
weekly	-	-	-
Do not know	-	-	2 (18,2)

Source: Direct Research

In relation to gender the profile of the investigated population is predominantly female, which highlights the feminization of health work. With regard the time of service in the institution, there is a variation among categories, with an average permanence of 17.08 years and 2.64 years for workers to managers. It is believed that this lower permanence of sectoral managers is justified by the alternation of government leaders, as they are appointed to positions of trust. [13-4]

The standards of the Ministry of Health (MOH) and CONAMA establish the imperative need for knowledge and participation of all the actors involved in the design, deployment and implementation of PGRSS of health institutions so that, in fact, are properly followed the steps in management of RSS, however, the findings of the research presented in Tables 2,3 and 4 showed a high degree of unawareness of workers(90%), professionals (95.2%) and managers (54.5%) about the existence of this plan in the institution. These data are indicative of the need for training of all categories investigated. [4-5]

The precariousness of the information on segregation and weighing of waste produced in the institution was identified in 36.7% of the interviewed workers, this group expanded misinformation regarding the internal transport, storage and end daily collection which reached 42.9% of the sample data also found in studies by Matos, Moraes, Oliveira, 2009.[15]

This evidence indicates the fragility of training and continuing education program for workers of the institution, especially in relation to the Standard Operating Procedures recommended by the MS and the Regulatory Norm 32 Ministry of Labour , which minimize occupational hazards, contamination of patients and the environment. However it is observed in Table 4 that 72.7% of managers claim to conduct qualification and training on the rules and routines of management of RSS for these workers, which indicates a possible methodological inadequacy and consequent delay on the learning these procedures.[8]

Among health professionals it was expected a higher degree of knowledge about care in the handling of RSS as well as in relation to the local and final disposal of this waste, however, 56.5% and 95.2% respectively of respondents mentioned unawareness these procedures. This finding significantly aggravates the problem of inadequate management of waste in the health service, since these professionals are key members of committees for infection control, biosecurity, accident prevention and services of safety engineering and occupational medicine, which, as a rule, take the coordination and technical responsibility for these organisms, which are also responsible for the training and the preparation and dissemination of the risk map in the institution.[7]

Current law provides that it is the responsibility of the institution the elaboration, implementation and deployment of PGRSS, being the license of the county environmental agency for the operation of the service necessary. The data presented in Table 4 show that 54.5% of managers interviewed demonstrated not know the PGRSS of the institution. 81.8% are unaware of the laws governing the plan as well as the existence of an environmental license for the operation of the institution, the risk map and the final destination of the service studied produced RSS. These data indicate a deficit of knowledge on the part of these managers also evidenced in similar studies conducted in other states.[17]

In the environmental licensing process is made the analyze of the activities impacts developed by the institution, being the PGRSS the main document to be parsed and should contain all aspects of generation and classification, segregation, minimization, pretreatment, conditioning, temporary storage, collection and transportation of domestic waste. Sanitary Surveillance also uses this document to review and inspect all sectors of the institution, usually accompanied by representatives of CCIH, CIPA and Coordinator of Sanitation and Hygiene and the PGRSS own manager to issue a business license, which is renewed annually according to the RDC 306/04.

CONCLUSION

The RSS, though with possibility of infectious and dangerous are currently amenable to treatment and safe handling. You can prevent and minimize the potentially dangerous effects of such waste to the environment and the health of living, especially humans, through the development, licensing, deployment and implementation of a Plan of Waste Management of Health Services (PGRSS).

The PGRSS existing in the research institution has not passed the evaluation and licensing of Sanitary Surveillance of the State of Piauí and the State Secretariat for the Environment and Water Resources of Piauí (Semar), and therefore, was not deployed, which was evidenced in this study by the results related to lack of knowledge by of individuals interviewed and health sector managers who did not know about the existence of the PGRSS in the institute investigated.

It was possible to verify deficiencies in the installed capacity (deposits for temporary and final storage), inadequacy of cars for transportation of RSS and personal protective equipment (PPE), containers (tanks, boxes and bags), not deployment PGRSS, beyond the precarious training of those involved in the handling of RSS. It was possible to verify deficiencies in the installed capacity (deposits for temporary and final storage), inadequacy of cars for transportation of RSS and personal protective equipment (PPE), containers (tanks, boxes and bags), not deployment of PGRSS, besides the precarious training of those involved in the handling of RSS. It was concluded that changes are required in the physical structure of the current external storage to meet the requirements of current legislation.

These weaknesses added to the public collection of RSS without prior treatment with final destination to the controlled landfill, as is the case in Teresina (PI), in which there are no impermeable cells exclusively for infectious waste and potentially polluting of the soil and groundwater, can offer various risks to which are subjected workers, professionals, managers, patients, families, the wider community and environment.

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Contact of the corresponding author:
Walkiria de Carvalho Mendes
Campus Universitário Ministro Petrônio Portella - Bairro Ininga -
Teresina – PI. CEP: 64049-550
E-mail: wall_mendes@hotmail.com