

VACCINE PROFILE OF NURSING PROFESSIONAL IN A HOSPITAL REFERENCE IN INFECTIOUS DISEASES IN FORTALEZA – CEARÁ¹

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ABSTRACT

This study aimed to define the profile vaccination of the components of professional nursing tertiary mid-sized hospital specialized in infectious diseases, in Fortaleza, Ceará. We conducted a cross-sectional survey in which data were secondary and provided by the Epidemiology Center Hospital, containing information of a vaccination against hepatitis B, tetanus, yellow fever, measles, chicken pox and tuberculosis of a sample of 223 professionals. The results showed that most professionals are female, working in health care sectors. The varicella vaccine schedule was the most frequent, followed by measles, hepatitis B, tetanus, yellow fever and tuberculosis. Based on the results we suggest conducting continuing education programs focused on perennial availability of vaccines for health workers. Also, it is essential to continue the analysis of the vaccine profile of these professionals, including other preventable diseases, which vaccines are available in the country, such as Influenza, Hepatitis A and meningitis.

Keywords: Vaccination. Occupational Health. Nursing Team.

INTRODUCTION

In recent decades, a great number of initiatives of Brazilian society have sought to consolidate and deploy advances in public policy of comprehensive health care worker. Especially in the 1970s, in which the movement of Occupational Health in Brazil gained force with the defense of the right to a decent work and health, with the participation of professionals in decisions about the organization and management of production processes and the pursuit of ensuring comprehensive health care. It may be noted that the policy of the State, consisting at that time, prevails to the present day without substantial changes⁽¹⁾. During that period, actions of prevention and health promotion came to be seen as fundamental to the nationwide health. The work and the situation of the worker were seen as amenable to preventive actions.

Thus, the movement of democratization of the country inferred, in the Constitution of 1988, a set of social rights, entering health as a state duty and a right of the population⁽²⁾. This perception of public health was a landmark in the historical process of consolidation of a social protection system in Brazil.

This right was achieved in 2008, also by Norm (NR) 32, which declares safety and health at work in health care⁽³⁾. Among the various practices to protect worker health, stands out vaccination as a practical and efficient approach to prevent certain diseases present in the hospital environment. Immunization is a means of protection against serious illness, which the nursing staff are in continuous exposure.

Therefore, it is emphasized that immunization is an action that must precede occupational tests, and specific intervention for vaccine-preventable biological risk factors. This action is implicit in Ordinance No. 3214 of the Ministry of Labour and Employment (MTE) and assignment of Specialized Safety and Occupational Medicine

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(SESMT/NR-4) and also in the model of the worker health surveillance⁽⁴⁾.

Health workers must take special care, as they constitute a high risk group for vaccine-preventable diseases, with the possibility of intra-hospital transmission, and a substantial risk of contracting them and / or transmitting them⁽⁵⁾. Often, these workers face inappropriate work situations, despite scientific evidence showing the presence of various agents of occupational hazards in the workplace.

This concern is signed since graduation in which the approach of this subject in its formation is still precarious. This can occur due to barriers related to a lack of reflection on the subject. We can identify which students recognize immunizations as a way to protect and emphasize the importance of prevention. However, many have not completed their immunization schedule. As a result, entering the labor market in a disorderly manner, usually with no training in biosecurity and without verification of vaccination status. Therefore, achieving high vaccination coverage rates among these workers remains a challenge⁽⁶⁻⁷⁾.

With this in mind, it is placed in question the relevance of studies that investigate the vaccination in workers, that when providing patient care, are exposed to pathogens inherent risks of biological processes in health care organizations.

Chemical, physical, mechanical, biological, ergonomic and psychosocial factors are directly related to hospital work, which, due to its genesis, concentration or intensity and time in which the person remains exposed, are able to cause harm to worker's health⁽⁴⁻⁸⁾.

Research can contribute to the development of preventive measures and campaigns in the workplace, calling attention to the seriousness of the framework vaccine. The importance of conducting investigations like this, here, organized, is well understood and reported by other studies that delay history of vaccination in the country⁽⁹⁻¹⁰⁾. For though vaccines are fundamental as a prophylactic measure, it is clear that immunization is a scarce practice by health workers and society in general. And, according to NR 32, whenever there are effective vaccines against biological agents to which employees are or may be exposed, the

employer must make them available for free to non-immunized people⁽³⁾.

Therefore, the study is able to contribute, researching and drawing on data found to promote periodic campaigns to alert health workers, providing opportunities for them to protect themselves from diseases which they are daily exposed to. The aim is to profile vaccination of nursing hospital specializing in infectious diseases, in Fortaleza, Ceará.

METHODOLOGY

This is a descriptive study with a quantitative approach, performed in a tertiary mid-sized hospital, specialized in infectious diseases, which is a reference in the diagnosis and treatment of various infectious diseases in the state of Ceará. It treats diseases such as Acquired Immune Deficiency Syndrome (AIDS), tuberculosis, meningitis, leishmaniasis, visceral leishmaniasis, leptospirosis, among others.

The study population consisted of all nursing staff of the hospital, totaling 248 employees. The secondary data were made available at the Epidemiology Hospital Center (NUHEP), in which the sample was composed of assistants, technicians and nurses as well as nursing attendants who responded to the survey vaccine, conducted by the core in 2007, ie, 223 subjects, for the period covered by the survey, 25 professionals failed to respond due to vacation, sick leave or absence.

Data collection was carried out in December 2008, and information professionals were considered as the labor sector, according to the role and to the vaccine schedule, hepatitis B, tetanus, yellow fever, measles, chicken pox and tuberculosis. Then, the data were organized in Excel 8.0 spreadsheets, analyzed by absolute frequencies and percentages, arranged in the form of graphs.

In compliance with the recommended, data collection occurred after consideration and approval of the Research Ethics Committee of the Hospital locus of the study, with Opinion No. 01/2009, in order to meet the requirements of Resolution 196/96 for human beings research of the National Council of Health / Ministry of Health.

RESULTS AND DISCUSSION

The study sample consisted of 223 employees (90% of total) arranged in the following categories: 59 nurses, 150 mid-level employees (assistants and technicians) and 14 nursing assistants who are engaged in administrative support in hospitalization units. Of this amount, all were older than 30 years, and 91% were female.

The workers were crowded or belong to the following sectors: 39 in the Intensive Care Unit (ICU), 38 in the Unit of Infectious Diseases, 27 in Pediatrics, 22 in Central Materials (CME) and Surgical Center (CC), 40 units in two specific for patients with AIDS and tuberculosis and 19 were packed in offices or were responsible for emergency care. Other workers (38) worked in various sectors, such as clinics, pharmacies, epidemiological and administrative sectors (CCIH and UVE).

We can see that most of the team develops care activities, focused on direct patient care and therefore are more directly exposed to possible contamination with infected biological material. Of the 223 nursing workers, at least 185 (83%) work in health care sectors. In this sense, the update of the vaccination scheme is presented as an imperative prophylactic action.

Nursing workers inserted into the dynamic of hospital care are at risk of contamination due to the labor process. This fact corroborates the study⁽⁸⁾ that points to factors relevant to the illness of these professionals. It is assumed that the fact is related to tasks such as cleaning, medication administration, effective participation by the health care team to assist patients in addition to the handling and preparation of surgical instruments after use, the contact of contaminated secretions and fomites.

According to NR 32, the direction and management of hospitals have an obligation to provide all immunizations recorded in the country to immunize their hospital staff. Although some are not free, exposed workers should be guaranteed protection, according to criteria of risk exposure⁽³⁾.

The results for the hepatitis B vaccine regimen showed that 154 (69%) workers had completed the scheme of three (3) doses. Of these, 24 (10.7%) received no dose, 16 (7.1%) received only 1 dose,

25 (11.2%) two doses and 4 (1.7%) did not have this data informed (N / I).

Research⁽¹¹⁾ held on needle stick accidents with sharp materials, which is a major means of contamination of Hepatitis B, we found similar values (35.4%) of servers in a hospital which lacked complete scheme, or it did not have any protection against hepatitis B. Given the workers' daily exposure to this disease, immunization is the principal and most effective means of preventing it. The low uptake of this professional category to search behaviors for their protection and health is the reason for setting standards and more effective policies on vaccine prevention services in hospital care⁽¹⁰⁾.

We suggest that the requirement for proof of completion of the vaccines recommended for health worker be mandatory, as a prerequisite, which is working in these institutions. This requirement ensures the prevention of disease and quality of life of these professionals within the Hospital.

It is emphasized that the immunity conferred by the hepatitis B vaccine only is evidenced by the titers of antibodies against the antigen, defined as the anti-HBs. In the survey, only 49 individuals (22%) underwent serology (anti-HBs), 113 did not undergo the serology and this finding was not reported in 61 surveys. Regarding the results of the examination, 17 were presented as reactor, 18 as non-reactive and 14 were not informed.

Em estudo realizado com profissionais de saúde, que investigou os fatores limitantes da vacinação contra hepatite B e da não realização de testes sorológicos desta doença, mostrou a ausência de informação relacionada à deficiência de metodologias. Informações estas necessárias para que o profissional reflita acerca do seu próprio trabalho, as interfaces como a biossegurança e as estratégias defensivas. Assim, o processo de renovação e de atualização do conhecimento profissional é apontado como a principal barreira, que acarreta a não vacinação dos indivíduos⁽¹⁰⁾. Percebe-se que o fator da ausência de informação tenha igualmente corroborado para os resultados apontados neste estudo.

In this context, it is noteworthy to point out that only 22% of the nursing staff conducted post-vaccination serologic evaluation, which defines as a focus of future investigations. Regarding the professional categories, the nursing assistants stood

out with 71% of its workers vaccinated. Then, the category with 69% of nurses and nursing assistants with 43%.

A study of health professionals, who investigated the limiting factors of hepatitis B vaccination and no serological tests for this disease, showed the absence of information concerning the deficiency methodologies. This information is necessary for these professionals to reflect on their own work, the interfaces as biosafety and defensive strategies. Thus, the process of renewal and updating of professional knowledge is identified as the main barrier, which leads to not vaccinated individuals⁽¹⁰⁾. It is noticed that the factor of lack of information has also confirmed to the aforementioned results in this study.

Another disease causing serious sequelae is the tetanus, able to affect people who come in contact with the tetanus bacillus when handling contaminated materials or through wounds in the skin or mucosa, for example. The tetanus, diphtheria as well as in adults can be avoided by the use of diphtheria-tetanus vaccine⁽¹²⁾.

According to the recommendation of the Ministry of Health, the vaccination schedule calls for an adult immunization schedule against diphtheria and tetanus (dT) with three doses and intervals of two months between each one. Each and every ten years, it is recommended a repetition of the dose of vaccine, however, this interval is reduced to five years in the case of professional activities with unhealthy population as encompassed in the present study⁽¹³⁾.

As for the population studied, 192 (86%) completed the three recommended doses. Of this total, it was found that 110 (57.2%) were vaccinated with a second dose; however, only 50 people (45.4%) had a second dose within the past 5 years.

Tetanus has affected people of all ages. In the study conducted in Ribeirão Preto, in the period from 1990 to 2009, there is a discrepancy with the national trend by revealing that, in the last 20 years it was not observed deaths from tetanus in that field of study, which clashes with the rates of mortality and lethality observed in Brazil. It is noteworthy that effective immunization programs, prioritization of care network, as well as team training of health professionals may be factors that contributed to this result. Tetanus for researchers

does not seem to be an important public health problem in the study region⁽¹⁴⁾.

Therefore, according to the performed activity, it is possible to identify health professionals, regardless of the contractual relationship, belonging to target groups that may, or risk, for which it is essential to the availability and management of the various types of vaccines⁽¹⁵⁾.

As for yellow fever in Ceara state, no occurrence of confirmed cases and also it is not considered a risk area for transmission⁽¹⁶⁾. However, although this is not considered an endemic state of pathology, it is indispensable to have vaccination against this disease in workers that work in hospitals, due to exposure.

It was observed that 40% of workers were vaccinated against yellow fever, 50.6% were not vaccinated and 9.4% were unable to give feedback. Yellow fever has a second dose every ten years, for lifetime, however, this data related to the second dose was not informed by NUHEP.

Regarding the prevention of other viral diseases such as measles, which has high infectivity, the scheme is suitable for adults MMR - SCR (Measles, Mumps and Rubella). In this study, 134 subjects (60%) had contracted measles, 38 (17%) had been vaccinated, 23 (10.4%) were not vaccinated and 28 (12.6%) left the information blank. We conclude that at least 77% of nursing staff had immunity against measles.

The acquisition of measles at some point throughout life is the fact that these individuals already ensures a natural immunity against disease and lasting remission and in this case the use of the vaccine schedule. As well as measles, chickenpox is capable of inducing lasting immunity in individuals who have already presented the disease, even if the subject's immune system is not able to eliminate the virus. In research conducted with respect to varicella, 179 (80.3%) individuals had already contracted the disease, 13 (5.8%) were vaccinated, 17 (7.6%) have never been vaccinated against varicella and 14 (6, 3%) did not have this information. Thus, it is considered immunized 86% of the nursing staff.

The category of nurses stands out with the highest percentage of its professionals immunized against measles to 24%. Then, the auxiliary 14%, and finally with 7% attendants measles vaccine.

The immunological protection against measles and chickenpox was satisfactory, since 86.1% and 77% of subjects were immune, both by accomplishing vaccination and because they had acquired the disease in a previous period. The behavior of endemic and epidemic measles varies from one location to another and depends on the relationship between the degree of immunity and susceptibility of the subject.

Varicella is a benign but highly contagious disease, which occurs mainly in children under 15 years of age. Is not a reportable disease, although outbreaks should be reported to the municipal and state of health.

To date, universal vaccination was reported in a study in Florianópolis, which presents the first estimates of the effectiveness of the varicella vaccine in reducing the incidence of the disease for the age group between 1 and 4 years based on a universal program of early childhood vaccination in Brazil. However, their results indicate a reduction in the incidence consistent with that reported in the United States of America⁽¹⁶⁾.

Tuberculosis (TB) is respectable cause of death in developing countries. In Brazil, although considered eradicated, it is emerging as a reemerging disease. TB should be embraced not only as a disease but as a global health problem that needs to be seen in aspects of social vulnerability, stigma, subjectivity and singularity of the subjects involved⁽¹⁷⁾.

We have an alarming issue regarding the three categories shown below immunization percentage of 10%. Nurses with 9%, nursing attendants with 7% and 5% of auxiliary workers who responded to the survey.

Thus, the daily contact with patients with tuberculosis induces immune response in the pros, and this response can be measured by PDP (purified derivative protein). This test serves to indicate whether or not the patient is infected with *Mycobacterium Tuberculosis*, not indicating whether the individual is a carrier of tuberculosis. It is part of the laboratory examination of the immunological profile an examination that absolutely does not indicate whether immunity is deficient⁽¹⁸⁾.

Of those surveyed, only 57 (25.5%) confirmed immunization with BCG (*Bacillus Calmette-Guérin*). Also, 158 (70.8%) have never confirmed

by immunization booklet. However, these percentages do not claim that these subjects have never received the dose of BCG as newborns, since the dose is recommended for all ages, with the priority population under one year of age. Therefore, some may not have developed lifelong immunity. It is noteworthy that 8 (3.5%) had not answered the questionnaire. Health workers as a whole, especially when in direct contact with patients diagnosed with TB, are easy targets for infection due to their increased exposure to the bacillus.

Therefore, the PDP test should be one of the tools used, being performed on admission of the worker in the service, so one can check the exposure and infectivity of the person by the Koch bacillus that causes TB. Among the study subjects, 108 (48.4%) had undergone PDP testing at some point, and of these, 45 (41.7%) were found to be non-reactive, 6 (5.5%) as weak reactors, 35 (32.4%) strong reactions, and 22 people (20.4%) had no such information.

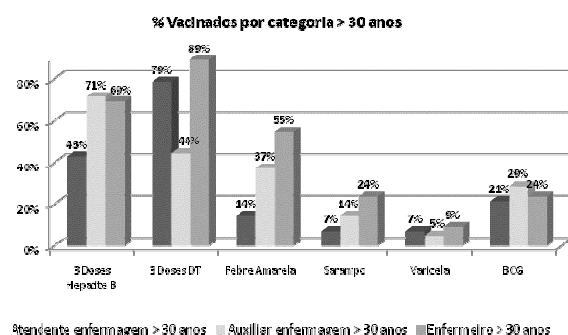
Based on the data, it can be concluded that the test should be implemented by the staff, as it serves as a reference for a possible second dose / exposure of an individual and as a means of preventing the disorder, the following seroconversion and need to administer prophylaxis. Therefore, it is necessary to establish a protocol admission in which the responsible sector should control the admission examinations and record in the employee handbook.

It is noteworthy that a survey conducted in Lisbon that integrates screenings performed within the occupational medicine, both at admission as regular and occasional cases of continued transmission are not the only way to control the transmission of the disease among workers health. Others causes commonly known, dependent on formation of low (or ineffective) formation and the absence of policies in institutions, leading to effective levels of individual and collective protection, are, without doubt, as they wager for better TB control such as illness of the worker⁽¹⁹⁾.

As noted in a Brazilian study, there is the need for health workers working in TB control programs fill out the field "occupation" in the notification forms of the disease, for the completeness of this information does

recognize this population under the real risks of developing TB. Besides pointing out the need to incorporate the biosafety standards agreed by the TB control program to health services⁽²⁰⁾.

Graphic 1 – Profile of humoral protection in nursing in a referral hospital for infectious diseases. Fortaleza, 2009.



Source: Bank of secondary data provided by NUHEP.

Although it was identified that only 69% of nursing staff had full vaccine schedule hepatitis B, only 45% produced satisfactory immune response. Less than half of workers had vaccinations against tetanus and yellow fever updated in 45.4% and 40% respectively.

In addition to the vaccines given above, it is essential that other immunizations are offered available in the country and inherent protection of health workers, such as influenza, hepatitis A and meningitis. It is also noteworthy that the verification and maintenance of updated immunization status is one of the tools that can be used in this context, so accessible and equitable, based on the professional awareness of employers and workers⁽⁶⁾.

FINAL CONSIDERATIONS

When investigating the immunization schedule against hepatitis B, tetanus, yellow fever, measles, chicken pox and tuberculosis, it is clear that there was no protection afforded to all workers in any of the investigated schemes. It is essential to note that this protection mentioned refers to acquired and immunization with the disease itself. However, it was found approximate immune protection

or more than half of individuals for almost all the diseases addressed.

We also highlight the fact that some individuals do not have their vaccination status reported by the available database, and they did not have information on other infectious diseases, and as the status of the availability of vaccines in the country, such as influenza, hepatitis A and meningitis. In this case, it is important to continue studies investigating in detail the vaccine profile of these workers, so that one can develop internal campaigns of vaccination and explanatory workshops aimed at raising awareness of individuals.

Knowing the vaccine profile of the nursing staff, because they are people who deal directly with the patient, is essential for planning actions and strategies to the awareness of the forms of control and prevention of infections and vaccination has been one effective means and financially viable prophylaxis.

Although much of vaccines have a high cost, due to the production of an immunobiological expensive to conduct research, testing, production, storage, transportation. Even so, under the economic point of view, immunization is still a worthwhile and beneficial investment. It is noteworthy that the treatment of an immune-preventable disease has a higher financial cost than the immunobiological.

Finally, an investigation knowledge of the body as a whole is essential, since they are workers who live in continuous exposure to biological hazards and numerous pathogens. With this in mind, one can enter the implementation of vaccines as a prophylactic infections form among workers. For the institution, there will be reduced rates of absenteeism, spending on combating the disease already installed and improvement of the health of hospital staff.

Based on the data identified in the research conducted, it is necessary to conduct continuing education programs aimed at the development of periodic campaigns, intended to reduce infections among healthcare workers. These must occur, after enrollment in the individual institution, an annual periodic examination. Promotion campaigns can also facilitate routine updating of the vaccination of professionals.

PERFIL VACINAL DOS PROFISSIONAIS DE ENFERMAGEM EM HOSPITAL REFERÊNCIA PARA DOENÇAS INFECCIOSAS DE FORTALEZA - CEARÁ

RESUMO

Objetivou-se traçar o perfil vacinal dos trabalhadores de enfermagem de hospital terciário de médio porte especializado em doenças infecciosas, em Fortaleza-Ceará. Pesquisa transversal, na qual os dados foram secundários, disponibilizados pelo Núcleo Hospitalar de Epidemiologia, contendo informações do esquema vacinal contra hepatite B, tétano, febre amarela, sarampo, varicela e tuberculose, de uma amostra de 223 profissionais. Os resultados mostraram que a maioria dos profissionais pertence ao sexo feminino, trabalhando em setores assistenciais. O esquema vacinal contra varicela foi o mais frequente, seguido do sarampo, hepatite B, tétano, febre amarela e tuberculose. Com base no resultado, sugere-se a realização de programas de educação permanente voltados à disponibilidade perene de vacinas para os trabalhadores de saúde. Também é fundamental a continuidade da análise do perfil vacinal desses profissionais, incluindo outras doenças imunopreveníveis, cujas vacinas encontram-se disponibilizadas no País, tais como a da Influenza, da hepatite A e da Meningite.

Palavras-chave: Vacinação. Saúde do Trabalhador. Equipe de Enfermagem.

PERFIL DE VACUNAS DE LOS PROFESIONALES DE ENFERMERIA EN UN HOSPITAL DE REFERENCIA DE ENFERMEDADES INFECCIOSAS EN FORTALEZA - CEARÁ

RESUMEN

Este estudio tuvo como objetivo definir el perfil de la vacunación de los trabajadores de enfermería de un hospital de tercer nivel de tamaño mediano especializado en enfermedades infecciosas, en Fortaleza, Ceará. Investigación transversal, cuyos datos eran secundarios, provistos por el Núcleo Hospitalario de Epidemiología, conteniendo informaciones del esquema de vacunas contra hepatitis B, tétanos, fiebre amarilla, sarampión, varicela y tuberculosis, de una muestra de 223 profesionales. Los resultados mostraron que la mayoría de los profesionales pertenece al sexo femenino, que trabaja en los sectores asistenciales. El esquema de vacunas contra la varicela fue el más frecuente, seguido por el sarampión, la hepatitis B, el tétanos, la fiebre amarilla y la tuberculosis. Con base en el resultado, se sugiere la realización de programas de educación permanente dirigida a la disponibilidad perenne de vacunas para los trabajadores de salud. También es fundamental la continuidad del análisis del perfil de vacuna de estos profesionales, incluyendo otras enfermedades inmunoprevenibles, cuyas vacunas están disponibles en el País, tales como la de la Influenza, hepatitis A y Meningitis.

Palabras clave: Vacunación. Salud del trabajador. Equipo de Enfermería.

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