

KNOWLEDGE AND ADHERENCE OF THE NURSING TEAM TO THE USE OF THE PERSONAL PROTECTIVE EQUIPMENT

CONHECIMENTO E ADEÇÃO DA EQUIPE DE ENFERMAGEM AOS EQUIPAMENTOS DE PROTEÇÃO INDIVIDUAL

CONOCIMIENTO Y ADHERENCIA DEL PERSONAL DE ENFERMERÍA A LOS EQUIPOS DE PROTECCIÓN PERSONAL

Letícia Pinto Rodrigues ¹
Marina Pereira Rezende ¹
Andréa Mara Bernardes da Silva ¹
Lúcia Aparecida Ferreira ¹
Bethania Ferreira Goulart ¹

¹ Universidade Federal do Triângulo Mineiro – UFTM,
Curso de Enfermagem, Uberaba, MG – Brazil.

Corresponding author: Marina Pereira Rezende
E-mail: marina.rezende@uftm.edu.br

Author's Contributions:

Conceptualization: Letícia P. Rodrigues; **Data Collection:** Letícia P. Rodrigues; **Investigation:** Letícia P. Rodrigues, Marina P. Rezende, Andréa M. B. Silva; **Methodology:** Letícia P. Rodrigues, Marina P. Rezende, Andréa M. B. Silva; **Project Management:** Marina P. Rezende; **Resources Management:** Marina P. Rezende; **Statistical Analysis:** Letícia P. Rodrigues, Marina P. Rezende, Andréa M. B. Silva; **Supervision:** Marina P. Rezende; **Validation:** Letícia P. Rodrigues, Marina P. Rezende, Andréa M. B. Silva, Lúcia A. Ferreira, Bethania F. Goulart; **Visualization:** Letícia P. Rodrigues, Marina P. Rezende, Andréa M. B. Silva, Lúcia A. Ferreira, Bethania F. Goulart; **Writing - Original Draft Preparation:** Letícia P. Rodrigues, Marina P. Rezende, Andréa M. B. Silva, Lúcia A. Ferreira, Bethania F. Goulart; **Writing - Review and Editing:** Letícia P. Rodrigues, Marina P. Rezende, Andréa M. B. Silva, Lúcia A. Ferreira, Bethania F. Goulart.

Funding: No funding.

Submitted on: 2018/06/28

Approved on: 2019/09/02

ABSTRACT

Objective: to investigate the knowledge and adherence to the use of personal protective equipment by the Nursing teams of the family health strategies. **Method:** a descriptive and cross-sectional study of quantitative approach. 48 professionals participated. A semi-structured questionnaire containing multiple-choice closed questions was applied. **Results:** the knowledge of the professionals about the occupational risk was evident. There was a misconception about the definition of biological risks; 75% of the respondents could not associate the agents with the types of risks. Most reported using personal protective equipment in all procedures; 13 professionals reported having suffered an occupational accident, and four of them were not wearing protective equipment. **Conclusion:** partial knowledge about the theme and adherence to the use of the equipment; however, the most used were lab coats and gloves. Thus, continuing education is necessary to encourage the professionals to use the equipment in the professional practice.

Keywords: Nursing, Team; Personal Protective Equipment; Occupational Risks; Family Health Strategy.

RESUMO

Objetivo: investigar o conhecimento e a adesão do uso dos equipamentos de proteção individual pelas equipes de Enfermagem das estratégias de saúde da família. **Método:** estudo descritivo, transversal de abordagem quantitativa. Participaram 48 profissionais. Foi aplicado questionário semiestruturado, contendo questões fechadas de múltipla escolha. **Resultados:** ficou evidente o conhecimento dos profissionais sobre o que é risco ocupacional. Houve conhecimento equivocado quanto à definição de riscos biológicos; 75% dos entrevistados não souberam associar os agentes aos tipos de riscos. A maioria relatou utilizar os equipamentos de proteção individual em todos os procedimentos; 13 profissionais referiram ter sofrido acidente de trabalho, sendo que quatro deles não estavam utilizando equipamentos de proteção. **Conclusão:** conhecimento parcial acerca da temática e adesão ao uso dos equipamentos, entretanto, os mais utilizados foram jaleco e luva. Sendo assim, é necessário realizar educação permanente para incentivar os profissionais a utilizarem os equipamentos na prática profissional. **Palavras-chave:** Equipe de Enfermagem; Equipamento de Proteção Individual; Riscos Ocupacionais; Estratégia Saúde da Família.

RESUMEN

Objetivo: investigar el conocimiento y la adherencia del personal de enfermería de estrategias de salud familiar al uso de equipos de protección personal. **Método:** estudio descriptivo, transversal de enfoque cuantitativo. Participaron 48 profesionales. Se aplicó un cuestionario semiestructurado con preguntas cerradas de opción múltiple. **Resultados:** se constató el conocimiento de los profesionales sobre el riesgo laboral. Hubo error al definir los riesgos biológicos; el 75% de los encuestados no supieron asociar los agentes con los tipos de riesgos. La mayoría informó haber usado equipo de protección

How to cite this article:

Rodrigues LP, Rezende MP, Silva AMB, Ferreira LA, Goulart BF. Knowledge and adherence of the Nursing team to the use of the personal protective equipment. REME – Rev Min Enferm. 2019[cited ____];23:e-1225. Available from: ____ DOI: 10.5935/1415-2762.20190073

personal en todos los procedimientos; 13 profesionales informaron haber sufrido algún accidente laboral y cuatro comunicaron que no estaban usando equipo de protección en ese momento. Conclusión: conocimiento parcial sobre el tema y adherencia al uso del equipo, sin embargo, los más utilizados fueron delantal y guantes. Por lo tanto, la educación continua es necesaria para alentar a los profesionales a usar el equipo en la práctica profesional.

Palabras clave: Grupo de Enfermería; Equipo de Protección Personal; Riesgos Laborales; Estrategia de Salud Familiar.

INTRODUCTION

The advances in the health sector present difficulties in sustaining the quality and safety of care. The incorporation of new technologies made it possible that treatments, previously available only in hospitals, could be performed at home.

In this context, home care emerges as a model of comprehensive health care for the users, corroborating principles and guidelines of the public health policies, and is linked to the Family Health Strategy (*Estratégia de Saúde da Família-ESF*), regulated by Law No. 8,080 of September 19th, 1990.¹

Home care is the provision of health services to individuals of any age in their homes and of the activities that involve health promotion, prevention of diseases and complications instituted under the Unified Health System (*Sistema Único de Saúde, SUS*) by Ordinance 963 of May 27th, 2013.²

The first access of the population to health care is primary health care (*Atenção Primária à Saúde, APS*), consisting of the basic health units (*Unidades Básicas de Saúde, UBSs*) or ESF. The purpose of these units is to reorganize the health practice, considering the principles governing the SUS.³

The developed actions focus on the family, taking into consideration the determining and conditioning factors of the health and disease process, through a multi-professional team composed of a general practitioner, a nurse, two Nursing assistants, and five to six community health agents, depending on the municipality and the assigned area.^{4,5}

After this first appointment, the user is referred to other levels of attention, if specialized care is required. They are then referred to the UBS for follow-up.⁶

The Nursing team inserted in the ESF deals with the entire health-disease process and there are several risks in this scenario related to workers' health. These vary according to the environment, the activities performed, the characteristics and behavioral aspects of both the population served and the health professionals.⁷

Accidents at work are defined as injuries that cause functional damage, leading to the individual's loss of work ability or may cause death. They occur during their craft, in the worker's round trip to his or her service or home.⁸

It is noteworthy that the Nursing team is more susceptible to occupational hazards, defined as the possibility of the work causing harm to the worker, either by physical, chemical, biological, ergonomic and accident agents.^{9,10}

The Ministry of Labor and Employment (*Ministério do Trabalho e Emprego-MTE*) classifies occupational hazards by means of regulatory standards. The NR32, specific for health workers, was instituted by Ordinance 485, of November 11th, 2005, and aims to establish the basic guidelines for the protection and safety of the health professionals.¹¹

The Nursing staff is exposed daily to various risk agents such as secretions, blood, sharps, contact with chemicals, physical efforts, high workload, and stress, among others.¹⁰

Accidents with blood and other organic fluids are the most frequent occurrences.^{8,12} One of the ways to protect the worker in their activities is the use of personal protective equipment (PPE), as it allows more safety and reduces harms when performing a procedure with the patient.^{13,14}

Their marketing requires authorization and they are sold after approval by the MTE's competent national body and must be made available by the institutions free of charge to the workers.¹⁴

Several studies reveal failures in the use of the PPE by the Nursing team, and most have minimal knowledge and ignore its use, contributing to increased occupational risks.¹⁵⁻¹⁷

This has proven to be a major challenge for the health care organizations, as every APS practitioner has the responsibility to ensure that their practices contribute to safe, iatrogenic-free patient care while minimizing the risk of occupational accidents that directly impact on the worker's health and on the quality of care.

The accomplishment of this research is relevant since the use of the PPE is fundamental to ensure the team's protection against the existing risks at work. Several threats that could damage the employees' well-being and health were found. Therefore, identifying the proper protective equipment to perform the workday's tasks is essential to prevent occupational accidents and diseases.

Accidents are a current and worrying reality, and Brazil is a country with an emergency to advance in occupational health and safety issues, considering that the professionals are in direct contact with the patient, performing interventions that enable accidents to occur. Thus, it is important to properly evaluate the environment in which care will be provided, ensuring that it is risk-free, ensuring health and protection for the worker and the patient.

This study was conducted to investigate the knowledge and adherence to the use of the personal protective equipment by the Family Health Strategy Nursing teams of the urban area of the city of Uberaba and to contribute with information on the theme, to overcome gaps in the scientific production.

METHOD

It is a descriptive and cross-sectional study with a quantitative approach. The research was conducted with 23 Nursing teams of the Family Health Strategy of the urban area of the city of *Uberaba*, in the state of *Minas Gerais*.

Being at work during the data collection period was an inclusion criterion, and also those who agreed to participate in the research. Those who were on vacation, sick leave or absent from the unit were excluded.

Data collection was scheduled in advance with the unit managers and collected from January to March 2016. From the population of 92 Nursing professionals from the ESF teams, 48 were eligible for the study, them being nurses, technicians and Nursing assistants.

To obtain the data, a semi-structured questionnaire containing multiple-choice closed questions was applied, in which the participants received instructions to fill it out. The questionnaire was divided into three parts: a) sociodemographic characterization of the professionals; b) knowledge of the professionals about the use of personal protective equipment; c) using the equipment during their work activities.

The instrument was subjected to the content validation stage through the judgment of three expert judges and health professionals who work in direct care, aware of occupational risks and inserted in the academic environment. The evaluation criteria used for the opinion validation were the presentation and measurement of the variables of interest regarding objectivity, relevance, clarity, appropriateness, accuracy, and credibility.

Data was stored in an Excel® spreadsheet and imported into the Statistical Package for Social Sciences (SPSS) program, version 20.0, for descriptive analysis of data through absolute frequencies and percentages.

The research was based on Resolution No. 466/2012 of the National Health Council (*Conselho Nacional de Saude-CNS*) and was submitted for consideration to the Research Ethics Committee of the *Universidade Federal do Triângulo Mineiro-UFTM*, being approved under protocol number 1,204,768.

Authorization from the Municipal Secretary of Health (*Secretaria Municipal de Saúde*) was requested, with the consent and signature in the Free and Informed Consent Form (FICF) of the Nursing professionals who were part of the Family Health Strategy teams. The study met the formal requirements of the national and international regulations governing research with humans.

RESULTS

Regarding the profession, 41.7% were nurses; 52.1% Nursing technicians; and 6.3% Nursing assistants. There was

a predominance of females in the different professional categories worked, with 95.8%. The age group ranged from 27 to 59 years old, with a mean of 41.

Single (27.1%) and married (43.8%) individuals were observed. 45.8% of the respondents completed high school and 33.3% had a specialization in a field of interest.

Concerning the length of service at the institution, 41.7% said they work there from one to five years now and 29.2% said they have worked there for over 15 years now. The number of weekly working hours was from 36 to 44 in 14.6% of the professionals, while 85.4% worked other times.

The amount of day off the participants reported having was two days on the weekends. The UBS/ESFs operate from Monday to Friday, with a workload of 40 hours/week. Thus, the employees did not work on Saturdays and Sundays, except on special occasions such as vaccination campaigns, for example. The majority answered yes when asked if they had already done any biosafety training (62.5%); however, they were not asked when the period of the last training was.

We reported that 77.1% of the professionals answered that occupational risk is any situation in the workplace that poses a danger to the worker's physical and/or mental integrity.

The following definition of biohazard was reported by 60.4% of the participants: substances, compounds or products that may enter the body via the airway, in the form of specks of dust, fumes, mists, fogs, gases or vapors or due to nature of the exposure activity, may be in contact with or absorbed into the body through the skin or if swallowed.

Regarding the biological agents, 85.4% of the participants answered correctly about their definition. However, when asked about the NR (32), only 39.6% of the professionals indicated the correct answer. The same number (39.6%) indicated the purpose of the NR correctly (32).

Regarding the provision of the PPE, 85.4% mentioned that it should be made available whenever the general measures offer protection against risks.

In addition, 22.9% indicated that the following are physical, chemical, biological, ergonomic and accident hazards: heat, gases, bacilli, extended working hours and electricity. It draws our attention that 75% of the participants chose the wrong alternative.

Regarding the use of the PPE during their work activities, the results obtained for this category are presented in Table 1.

Of the professionals who suffered work accidents (N: 13), four were not wearing protective equipment. According to them, the reasons for not using it are forgetfulness, discomfort and not finding the use of PPE necessary.

Table 1 - The use of Personal Protective Equipment by the Nursing team during their work activities. Uberaba – MG, 2016

Questions	Answers	
Does the institution provide the necessary personal protective equipment?		
Yes	41	85.4
No	03	6.3
No answer	04	8.3
How often do you use the following personal protective equipment in the unit?		
Glove		
Always	34	70.8
Not always	11	22.9
No answer	03	6.3
Mask		
Always	06	12.5
Not always	30	62.5
I do not use it	08	16.7
No answer	04	8.3
Protective goggles		
Always	04	8.3
Not always	31	64.6
I do not use it	09	18.8
No answer	04	8.3
Hat		
Always	04	8.3
Not always	18	37.5
I do not use it	21	43.8
No answer	05	10.4
Lab coat		
Always	42	87.5
Not always	03	6.3
No answer	03	6.3
Do you use personal protective equipment whenever you perform a procedure?		
Yes	41	85.4
No	04	8.3
No answer	03	6.3

DISCUSSION

Among the participating professionals, there was a predominance of females. This finding is expected, given that Nursing has as its main feature the act of caring and that this is performed, with more emphasis, by women. In several studies, the high number of female workers in the health services is evident.^{14,18,19}

Regarding age, most were middle-aged adults (41 years old). In one study, it was observed that the ESF teams are mainly composed of young adults.¹⁹

The predominance of the married marital status is correlated with the mean age of 41 years old of the professionals. An even higher frequency (61.3%) was reported in a study with Nursing workers from two hospitals in the city of *Ribeirão Preto*.¹⁰

In this study, 33.3% of the respondents took some specialization course, contradicting what is mentioned in the literature, in which out of the 266 individuals, 174 (65.4%) reported having taken some update course in the last two years in their area.¹⁶

In the professional categorization, the majority (52.1%) were Nursing technicians. This professional category presents more risks due to invasive procedures and contact with body fluids through direct contact with patients.

Regarding the time of work in the institution, 41.7% have been working for about one to five years, equivalent to the reality found in a study in which 38.5% work in the place for two to five years.¹⁹

Regarding the working hours, 14.6% of the professionals worked 36 to 44 hours a week, which corroborates the findings in the literature.⁹ Most reported having done some biosafety training. This result contradicts what is presented in a study in which only 39.8% had some training on prevention and worker protection themes.¹⁶

The professionals' knowledge about the definition of occupational risk was evident; however, there was a mistaken knowledge about the concept of biological risks. This data is worrying because biological risks are the main generators of health hazard and unsanitary conditions for these professionals.

Nevertheless, when asked what the biological agents would be, 85.4% answered correctly, which corroborates a research study in which 91% of the participants also indicated the right answer.¹⁸

Regarding NR 32, only 39.6% indicated the correct answer, which corroborates the evidence in another investigation.¹⁸ In this sense, guidance is needed for the workers to reduce accidents, and the use of PPE is the best prevention strategy, as it is a protective barrier.

Regarding the physical, chemical, biological, ergonomic and accident risks, 75% of the professionals could not associate the agents with the types of risks. This finding is worrying, as occupational accidents are directly related to the health professional's lack of knowledge, training, and qualification.

Among the respondents, 85.4% reported receiving the PPE as required by law. The professional are aware that the company is required to provide the PPE free of charge whenever the general measures do not offer risk protection. The employer must provide the equipment in perfect condition and

functioning, guiding and training the worker on the proper use, conservation, and usage requirements.¹⁴

In this study, the most commonly used PPEs were lab coats and gloves. The use of lab coats and gloves as protective equipment has also been reported in another two studies.^{16,19}

Most of the professionals (85.4%) reported using the PPE in all the procedures performed, which was not evidenced by a research study that found that 83% of the professionals stated they stopped making proper use of the equipment at some point, and 17% never failed to do so.¹⁸

As for the occupational accidents, 13 professionals reported having suffered them, four of them were not wearing protective equipment at the time of the accident and the reasons for not using it were forgetfulness, discomfort and because they did not find it important.

In this context, several studies highlight the following as a justification for not using the PPE: interference in the work; inconvenience of its use; lack of ability to use it; lack of knowledge; habit and discipline.^{8,10} This is a matter of concern, since protection is related to the use of protective equipment properly, to technical skill, knowledge, and responsibility for conservation.

It is also worth mentioning that this theme should be highlighted to the health professionals, especially the Nursing team, due to the importance and direct impact on the workers' health. However, there are difficulties in preventing accidents, given the professionals' lack of adhesion to the use of the standard precautions and lack of knowledge about the occupational hazards at work.

Given the above, it is up to the Nursing professional to respect the rules and routines of the service. The institution is responsible for providing resources to offer the PPE in good quantity and quality, as well as for ensuring the training of all the health team and users, monitoring the use of the equipment, ensuring the protection and improvement of the quality of the actions provided for a safe health care.

The limitations of this study were the cross-sectional design, which represents a clipping of reality over a given period of time and the information bias due to the memory errors of the participants investigated.

CONCLUSION

The data revealed partial knowledge about the theme, as most of the respondents could not define the NR 32 and associate the causative agents with the type of risk. There are gaps in some topics relevant to this subject. In this sense, it is necessary to implement educational actions in order to clarify these issues.

There was adherence to the use of the PPE by the ESF professionals and the most used equipment were lab coats and gloves.

Additional research studies may help to inform on the occupational risks, in order to reduce labor accidents and raise awareness among the Nursing professionals about the best use and adherence to the use of the PPE.

REFERENCES

1. Ministério da Saúde (BR). Lei no. 8.080, de 19 de setembro de 1990. Dispõe sobre as condições para a promoção, proteção e recuperação da saúde, a organização e o funcionamento dos serviços correspondentes e dá outras providências. Diário Oficial da União. 19 Set. 1990[cited 2018 May 15]. Available from: http://www.planalto.gov.br/ccivil_03/leis/L8080.htm
2. Ministério da Saúde (BR). Gabinete do Ministro. Portaria nº963, de 27 de maio de 2013. Institui a Atenção Domiciliar no âmbito do Sistema Único de Saúde (SUS). Brasília: Ministério da Saúde; 2013[cited 2018 May 05]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0963_27_05_2013.html
3. Malta DC, Santos MAS, Stopa SR, Vieira JEB, Melo EA, Reis AAC. Family Health Strategy Coverage in Brazil, according to the National Health Survey, 2013. *Ciênc Saúde Colet*. 2016[cited 2018 May 21];21(2):327-38. Available from: http://www.scielo.br/pdf/csc/v21n2/en_1413-8123-csc-21-02-0327.pdf
4. Paim JS. Modelos de Atenção à Saúde no Brasil. In: Giovannella L, Escorel S, Lobato LVC, Noronha JC, Carvalho AI. Políticas e Sistema de Saúde no Brasil. 2ª ed. Rio de Janeiro: Fiocruz; 2012. p. 459-91.
5. Arantes LJ, Shimizu HE, Mércan-Hamann E. The benefits and challenges of the Family Health Strategy in Brazilian Primary Health care: a literature review. *Ciênc Saúde Colet*. 2016[cited 2018 May 21];21(5):1499-509. Available from: http://www.scielo.br/pdf/csc/v21n5/en_1413-8123-csc-21-05-1499.pdf
6. Ministério da Saúde (BR). Secretaria de Atenção à Saúde, Departamento de Atenção Básica. Política Nacional de Atenção Básica. Brasília: Ministério da Saúde; 2012[cited 2018 May 21]. Available from: <http://189.28.128.100/dab/docs/publicacoes/geral/pnab.pdf>
7. Ferigollo JP, Fedosse E, Santos Filha VAV. Professional quality of life of public health. *Cad Ter Ocup UFSCar*. 2016[cited 2018 May 21];24(3):497-507. Available from: <http://www.cadernosdeterapiaocupacional.ufscar.br/index.php/cadernos/article/viewFile/1379/746>
8. Mallmann DG, Sousa JC, Hammerschmidt KSA. Work accidents and their prevention in Brazilian scientific production of nurses: integrative review. *Ciênc Saúde Colet*. 2016[cited 2018 Jan 15];9(1):49-54. Available from: <http://revistaseletronicas.pucrs.br/ojs/index.php/faenfi/article/view/21810/14398>
9. Medeiros PA, Silva LC, Amarante IM, Cardoso VG, Mensch KM, Naman M, et al. Health status of primary healthcare professionals from Santa Maria, RS, Brazil. *Rev Bras Ciênc Saúde*. 2016[cited 2018 Jan 15];20(2):115-22. Available from: <http://www.periodicos.ufpb.br/ojs/index.php/rbcs/article/view/18961/15739>
10. Teles AS, Ferreira MPS, Coelho TCB, Araújo TM. Occupational accidents with nursing team: a critical review. *Rev Saúde Col UFEs*. 2016[cited 2018 Jan 15];6(1):62-8. Available from: <http://periodicos.uefs.br/index.php/saudecoletiva/article/view/1082/856>
11. Ministério do Trabalho e Emprego (BR). Portaria nº 485, de 11 de novembro de 2005. Aprova a Norma Regulamentadora nº 32 (Segurança e Saúde no Trabalho em Estabelecimentos de Saúde). Diário Oficial da União 11 nov 2005; Seção 1[cited 2018 Aug 19]. Available from: <http://sbbq.iq.usp.br/arquivos/seguranca/portaria485.pdf>
12. Silva LCP, Juliani MCMS. Biosafety and occupational risk in primary care: a literature review. *Rev Unin Cor*. 2014[cited 2018 Jan 15];12(1):262-81. Available from: http://periodicos.unincor.br/index.php/revistaunincor/article/view/1355/pdf_112
13. Machado ECM. The biological hazard that can affect family health units' employees in Vale do Rio Pardo, Rio Grande do Sul, Brazil. *Rev Saúde*

- Desenvol. 2015[cited 2018 Jan 15];7(4):60-5. Available from: <https://www.uninter.com/revistasauade/index.php/sauadeDesenvolvimento/article/download/369/271>
14. Rezende KCAD, Tipple AFV, Siqueira KM, Alves SB, Salgado TA, Pereira MS. Adhesion to hand hygiene and use of personal protective equipment for nursing professionals in primary health care. *Ciênc Cuid Saúde*. 2012[cited 2018 Jan 13];11(2):343-51. Available from: <http://www.periodicos.uem.br/ojs/index.php/CiencCuidSaude/article/view/15204/pdf>
 15. Correa RA, Souza NVDO. Occupational risks faced by the nursing worker in a unit of hemodialysis. *Rev Pesq Cuid Fundam Online*. 2012[cited 2018 Jan 19];4(4):2755-64. Available from: http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/1973/pdf_614
 16. Silva GS, Almeida AJ, Paula VS, Villar LM. Knowledge and utilization of standard precaution measures by health professionals. *Esc Anna Nery Rev Enferm*. 2012[cited 2018 Aug 19];16(1):103-10. Available from: <http://www.scielo.br/pdf/ean/v16n1/v16n1a14.pdf>
 17. Mendes JM, Rodrigues TP, Morais LF. Riscos Biológicos e suas medidas preventivas na prática dos profissionais de enfermagem na atenção básica. *REBES*. 2014[cited 2018 Aug 19];5(1):82-91. Available from: <https://www.gvaa.com.br/revista/index.php/REBES/article/view/3159>
 18. Rondon EC, Tavares MS, Santos WL. Obstacles and made it easier for nursing professionals face apply to the use of epi's. *Rev Eletrônica Gestão Saúde*. 2012[cited 2018 July 20];3(3):1045-60. Available from: <http://periodicos.unb.br/index.php/rgs/article/view/23059/16581>
 19. Ferraz L, Kessler M, Krauzer IM, Trindade LL, Silva OM. Family health strategy: occupational risks the technical and auxiliary nursing. *Rev Recien*. 2015[cited 2018 July 20];5(13):20-8. Available from: <http://www.recien.com.br/index.php/Recien/article/view/91/159>
-