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RESEARCH

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Health Care from Firefighters: the Faced Difficulties that Impact in the Population's Assistance

Atendimento a Saúde por Bombeiros: Dificuldades Encontradas que Implicam na Assistência a População

Cuidado de la Salud para los Bomberos: las Dificultades que Entrañan Asistencia en la Población

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ABSTRACT

Objective: The research's purpose has been to identify the firefighters' perceptions with regards to the prehospital care, as well as their own main difficulties and risks when performing health care. **Methods:** This is a descriptive research with a qualitative approach, which used scripted semi-structured interviews for data collection. **Results:** The firefighters' statements were synthesized in three thematic units, as follows: "The firefighters' perceptions about prehospital care; "The requirement of nurses in the prehospital care performed by firefighters"; and "Insecurity versus prehospital care inherent risks". **Conclusion:** It is expected that this study may contribute to further increase the knowledge of this field, and the careful thinking about the firefighters' perception and performance towards prehospital care. Furthermore, this study aims to emphasize the importance of integrating health professionals into the rescue team, as well as investing in their training and in quality materials that provide security to both professionals and patients.

Descriptors: Emergencies, Firefighters, Nursing.

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RESUMO

Objetivo: Identificar quais as percepções dos bombeiros quanto ao atendimento pré-hospitalar, suas principais dificuldades e riscos encontrados na prestação do atendimento em saúde. **Métodos:** Trata-se de uma pesquisa do tipo descritiva com abordagem qualitativa, em que se utilizou de uma entrevista semiestruturada guiada por roteiro. **Resultados:** Os depoimentos dos bombeiros foram sintetizados em três unidades temáticas, assim denominadas: A percepção de bombeiros sobre o atendimento pré-hospitalar (APH); A necessidade do enfermeiro no APH realizado pela equipe do corpo de bombeiros e a Insegurança versus riscos inerentes do atendimento pré-hospitalar. **Conclusão:** Através de todo o exposto espera-se, contribuir para a construção do conhecimento e reflexão quanto a percepção e atuação do corpo de bombeiros no APH e a importância de integrar profissionais de saúde na equipe de resgate, assim como investir na capacitação destes e em materiais de qualidade que possibilitem segurança aos profissionais e pacientes.

Descritores: Emergências, Bombeiros, Enfermagem.

RESUMEN

Objetivo: Identificar las percepciones de fuego como la atención pre-hospitalaria, sus principales dificultades y riesgos encontrados en la prestación de asistencia sanitaria. **Métodos:** Este es un estudio de enfoque cualitativo descriptivo, que utilizó una entrevista visita guiada semiestructurada. **Resultados:** El testimonio de los bomberos fueron sintetizados en tres unidades temáticas, los llamados: La percepción de fuego en la atención pre-hospitalaria; La necesidad de enfermeras en APH realizadas por el equipo del cuerpo de bomberos y la inseguridad frente a los riesgos de la atención pre-hospitalaria. **Conclusión:** Se espera que a través de todo lo anterior, para contribuir a la construcción del conocimiento y la reflexión como las operaciones de percepción y del cuerpo de bomberos de la APH y la importancia de la integración de los profesionales sanitarios en el equipo de rescate, así como invertir en la formación de estos y materiales de calidad que permiten a los profesionales de seguridad y los pacientes.

Descriptores: Urgencias Médicas, Bomberos, Enfermería.

INTRODUCTION

The mobile Prehospital Care (PHC) arose in Brazil in the 1990's with the implementation of the Rescue Project, under the coordination of a mixed commission called *GEPRO-EMERGÊNCIA* and operationalization of the Fire Brigade and Air Radio Patrol Group of the Military Police of the *São Paulo* State. It was started in the *São Paulo* metropolitan area and in 14 municipalities of *São Paulo* State, with 36 Rescue Units, two Advanced Support Units and one helicopter used basically for traumatic emergencies.[1]

According to the Ministry of Health, PHC corresponds to the early care provided for the victim after an injury, which can lead to physical disability or risk of death.[2] It comprises three stages: the care at the local of the accident by witnesses or trained personnel, fast and safe transfer to an appropriate hospital, and the hospital arrival in proper conditions.[3]

Until 2003, mobile PHC was a fragmented activity, disconnected from health professionals. It was carried out by military firefighters, historically recognized for this practice due to the lack of policies.[4]

This study is of relevance because the importance of prehospital care has been recognized since it represents one of the major advances in the concept of medical emergency treatment. Moreover, it is vital for teamwork in order to make effective the ethical professional performance during emergency care, contributing positively to the life prognosis of victims of domestic/automobile/environmental accidents or another type of violence.[5]

It is crucial that the professionals receive training and update their knowledge constantly in order to provide an effective prehospital care.[3] Thus, this study is justified, since the Urgency and Emergency area is an important component of healthcare, and the fire brigade, since it is widely present during PHC delivery, needs to be qualified for this service.

The care for urgent/emergency patients by non-health professionals such as the firefighters was the main motivation for doing this research because the PHC requires great skill and knowledge to assist a patient until the transference to a hospital. It should be noted that the Fire Brigade and the *Serviço de Atendimento móvel de Urgências (SAMU)* [Mobile Emergency Service] coordinate the emergency/emergency care delivery almost exclusively.[6]

Hence, the research question "What are the difficulties of firefighters, who are non-health professionals, in providing health care?" was developed with the purpose of contributing to the scientific knowledge advancement, thus encouraging the carrying out of new studies into the pre-hospital care performed by firefighters, identifying their perceptions, difficulties, and risks towards PHC.

METHODS

This is a descriptive study with a qualitative approach. The research participants were 15 firefighters from the 2º *Grupamento de Busca e Salvamento (GBS)* [2nd Group of Search and Rescue] and the *Socorro de Emergência do Corpo de Bombeiros Militares do Pará (CBMPA)* [Military Fire Brigade Emergency Care of *Pará*], from *Belém* city, *Pará* State, Brazil, from 8th to 22nd June 2016. They agreed to participate in this study after knowing its objectives and signing the informed consent form. The GBS's activities, intended to promote rescue assistance for the population, are regulated by the ordinance No. 2048/2002.[2] Other medical emergencies, however, are under the SAMU's responsibility.

Data were obtained by using scripted semi-structured interviews with the following questions: "What do prehospital care mean to you?"; "Do you feel prepared to work in a prehospital care service?"; and "What difficulties do you find or have you found during the prehospital care delivery?"

In order to interpret and analyze the firefighters' reports, the thematic analysis was used, which is a fundamental technique for qualitative analysis.[7] This tech-

nique is divided into six stages: 1) data familiarization, which focuses on transcribing the data; 2) data reading and re-reading, noting initial ideas; 3) initial code generation, which encodes interesting data features and collects each subject's relevant data; 4) theme search, in which topics are grouped into potential themes, bringing together all relevant data for each thematic category; 5) theme review, in which the common issues are verified in order to proceed to a thematic of analysis; 6) theme definition and naming; and 7) report production phase, which is the last opportunity to analyze and expose the results.[7]

After the exhaustive reading of the produced texts, the analysis units were grouped and submitted to an exploration to understand better the research's objective by considering the more significant contents in each text. Hence, three thematic units emerged: "The firefighters' perceptions about prehospital care; "The requirement of nurses in the prehospital care performed by firefighters"; and "Insecurity versus prehospital care inherent risks". The participants' anonymity was preserved by using a number after the abbreviation "MF" (military firefighter).

This research was approved by the Ethics Committee of the Institute of Health Science of the Universidade Federal do Pará, under the Legal Opinion No. 1173665/2015. It complied with the Resolution No. 466/12/CNS/MS, which provides the guidelines for the research involving human beings in order to ensure the research participants' rights and duties towards the scientific community and the State.[8]

RESULTS AND DISCUSSION

This study's results were obtained from the testimonials of 15 firefighters. Fourteen of them were males (94%), six were protestants (40%), 10 were married or had a stable union (67%), and seven had a higher education degree (87%). The age group ranged from 26 to 41 years. Concerning the military rank, 12 were soldiers (80%) and only three were corporals (20%). Regarding the place of birth and the working time in the military service, 13 were from Pará State (87%) and seven worked for eight to nine years (47%).

It should be pointed out that corporals and soldiers, within the military service, are the main element for manual labor when compared to second lieutenants and sergeants, who are responsible for the management. This explains why 100% of the participants are soldiers or corporals working in the rescue unit since it provides essentially a technical and manual service.

The firefighters' perceptions about prehospital care

From the participants' speech, it was noticed that 75% of the firefighters consider that the prehospital care is the care performed outside the hospital environment aiming to stabilize the patient and offer the first procedures to prevent worsening of the medical condition. The following statements reveal this perception:

"The prehospital care is the care provided outside the hospital environment, which aims to stabilize the patient, and takes him to a hospital in a way that doesn't worsen his condition [...]" (MF1)

"It's that urgency and emergency care that do outside the hospital environment, whether on public roads, in a residence or in the middle of the bush [...]" (MF 06)

Prehospital Care, according to the Health Ministry, can be defined as the care provided for victims of acute, clinical, traumatic or psychiatric conditions outside the hospital environment. It is extremely important that this care must be performed within the first minutes after the health condition worsening in order to reduce the risk of sequelae and promote a better prognosis for the victim.[6]

In specific situations, such as traffic accidents, the PHC's purpose is to save the victims' life and keep them as stable as possible until they arrive at the hospital, where it is possible to carry out a more appropriate care, including invasive interventions to cure them and/or reduce trauma sequelae, providing a better quality of life.[9]

According to approximately 80% of the interviewees' testimonials, the pre-hospital care delivered by the CBMPA is considered a service performed in a deficient and inappropriate way. In the remaining 20%, the need for technical improvements and professional qualification was pointed out:

"It's performed poorly, as we know well, firefighters don't work in a regulated way, we don't have medical regulation, we don't have the mobile prehospital care service as stated on the Ordinance 2048, we don't have the professional staff to provide adequate care [...]" (BM01).

"I think that the prehospital care provided by firefighters, in general, is insufficient for the current population needs, considering both technical issues and the service demand" (MF2).

"Today, the fire brigade, at the institution level, fall short of what it should be for the military who work here in this area [...]. The fact that the firefighters still have this rescue activity today, it's because of the military that are here who really like to work in the rescue service" (MF4).

The insertion of a protocol is fundamental for the performance of the fire brigade, because it make it possible to operationalize the PHC service, determine the military's PHC functions, minimize the response time, integrate the fire brigade's PHC service with the Ordinance 2048/GM, November 5th, 2002, from the Health Ministry, improve the flow of the fire brigade's PHC service and provide better conditions for the military to perform it.[5]

The fire brigade's service in the *Pará* State has no PHC protocol, nor is it regulated by the Ordinance 2048/GM/2002 from the Health Ministry, which hinders the qualification of the service and compromises its efficiency. Therefore, it is necessary the implementation of a PHC protocol in order to improve the firefighters' health care service.

The requirement of nurses in the prehospital care performed by firefighters

Since its inception, the "art of caring" is the nursing motto, which has been extended to the most varied types of care, and mobile PHC is one of them. Urgency and emergency care is a policy, interaction, communication, and specific care service, aiming at restoring and/or minimizing health problems.[10] For this purpose, it is evident in the firefighters' statements the need for a health professional such as a nurse and/or physician in the rescue group. This is present in 73.4% of the testimonies due to the need for the nurses' legal support to perform invasive procedures during the health care delivery. The rest of the testimonials highlighted the assistance that the health professional can offer in order to provide an adequate health care service to the population:

> *"It's very important to have the help of a nurse in the rescue team, especially since there's a need to perform invasive procedures we haven't been trained for. In many situations, we see this need, not necessarily in all ambulances, but at least in some that provide more advanced support" (MF3)*

> *"Sometimes we provide care for very serious victims that we have to stabilize with the basic knowledge we have, without resources. The only procedure that can improve the victim's general condition is the intravenous access, which we aren't allowed to do, [...]" (MF10)*

Although firefighters perform health care, also called first aid, to victims of accidents and/or health hazards, it is clear in their statements that the lack of a health professional in the group or their acknowledgement as health professionals have a tendency to compromise, even partially, the assistance provided by them since they are not covered by law to perform simple procedures such as venipuncture. According to the Technical Regulations for Urgency and Emergency Systems, military professionals, including firefighters, must determinate risk situations, supervise the actions towards the environmental protection of victims and other professionals, rescue victims in dangerous places, and carry out basic non-invasive health care under the direct or remote medical supervision.[2]

Due to the increasing demand for mobile PHC in the recent years, it is increasingly necessary for the rescue team members to maintain the technical and scientific improvement for the execution of adequate and safe care for the victims. According to the study participants, nurses working as situational managers is of extreme importance. In this case, they are responsible for all health care actions and must develop substantial skills for themselves and for their team, such as decision-making fast and appropriate for the best victims' prognosis:[11]

> *"The nurse is needed not only during the rescue but also in the barracks. Because as I said, our doubts are removed by people that don't have theoretical or practical knowledge, they only have the experience of service [...]" (MF7)*

> *"We certainly need the nurse, the doctor ... We don't have enough support, in this case, we only have the basic course and often the victim needs a better follow-up of a specialist in the area, who knows how to lead the situation, which many times we rescuers don't know how to develop" (MF9).*

Nurses are responsible, along with physicians and the rescue team, for the victim's assistance at the incident location and during the transport to a hospital. Nurses have the function of elaborating internal protocols of attendance, with emphasis on the rapid assessment, technique readiness for stabilizing respiratory, circulatory and hemodynamic conditions, in order to achieve greater efficiency and quality, shortening time and reducing the number of errors.[11-2]

Thus, nursing practice in PHC not only involves technical skills and competencies when delivering care for hospitalized victims but also the preparation to face challenges outside the hospital nursing. Therefore, nurses should be prepared to predict, define and initiate the interventions necessary to stabilize the victims until their arrival at hospital for definitive treatment.[11,14]

According to the Resolution 375, March 22, 2011, from the Conselho Federal de Enfermagem (COFEN) [Federal Nursing Council], the nurses' presence is necessary for rescue units of type B, C, and D during PHC in dangerous situations, including risk of death or highly complex procedures.[15]

Hence, the nurses' presence in the rescue team is necessary since they provide theoretical and legal support for professional development and for a more efficient care delivery for people at risk.

Nevertheless, it is known that the simple process of including a nursing professional in the firefighters' team will not solve this problem. To that end, it is necessary to restructure/create public policies that regulate and control the technical skills required for the urgency and emergency network— mainly composed of the fire brigade and SAMU— and provide medical regulation support for both the services since not all municipalities have a SAMU unit. If the SAMU service is absent, the victim's rescue and health care are carried out almost exclusively by the fire brigade, but the firefighters, according to the current legislation, should not perform invasive procedures: they can only

provide PHC, rescuing victims and promoting their access to mobile healthcare services.

Insecurity versus prehospital care inherent risks

According to studies,[6,16] PHC teams are constantly exposed to functional risks such as: lack of technical and/or scientific qualification, difficulties in accessing the victims, lack of security in the accident/crime location, limited space for executing procedures, contamination with victims' fluids and/or vehicle disinfection products, among others.

Accordingly, when asked about the inherent risks of the profession, 60% of the testimonials stated the fragile biosafety as one of the greatest risks in providing care, which is related to the contact with body fluids, insufficient number of personal protective equipment and lack of adequate material for the decontamination of the equipment and the vehicle:

> *"We don't have biosafety, our uniforms aren't the most suitable for this type of activity, we wear gloves, which gives minimum protection, the masks used are not the most appropriate depending on the type of situation [...] the decontamination of uniforms, vehicles that don't come in right conditions, and generate some risks" (MF1).*

> *"We don't have a proper place in the car to wash and clean the patients' blood, we don't have the necessary material, we don't have a sterile material storage or a purging room to actually wash this material properly, as recommended by the protocols" (MF14)*

According to the interviewees, contact with body fluids, such as blood, saliva, vomit, urine, and feces, is a type of risk that is present in the daily life of the rescue team members, especially when personal protective equipment, such as masks, goggles and gloves, is lacking. The Regulatory Standard No. 6, from the Ministry of Labor and Employment, recommends the use of protective eyewear, helmet for work in hazardous areas, uniform totally closed for work in environments with biological or chemical exposure, gloves, closed shoes, respirators, and filter masks.[17] Thus, the CBMPA suffers from some biosafety issues.

Another preventive measure is updating each firefighter's immunization profile in order to mitigate the damages caused by direct and indirect contact with body fluids and/or chemical agents with the oral mucosa, eyes, and skin. In cases of occupational exposure to potentially contaminated materials, the rescuer should seek care from public emergency services and inform an on-call physician to initiate chemoprophylaxis quickly.[5,18]

Hand hygiene, reprocessing of devices and clothing, proper handling of puncture equipment, and environmental control (including waste management) constitute another issue.[19] According to a study, 56% of biological accidents occur during car cleaning or storage of surface materials.6 This shows the lack of compliance with the RDC No. 306/2004, which provides the technical regulation for the management of healthcare waste.[20]

Environmental risks were present in 40% of the firefighters' statements, including the risk of automobile collision if the ambulance moves at high speed to assist victims and transports them to a hospital in the shortest time, being run over in the case of a road accident, and physical aggression, which usually occurs when the victim has psychiatric disorders and/or a lower consciousness level, for example due to alcohol consumption:

> *"Security is a rather complicated issue because we do not choose the place to provide care, we must always pay attention to not become victims, [...] especially in cases involving psychiatric patients, where we expose ourselves to the greatest risks. I can tell this because I have already provided care for our colleagues who went to such an occurrence in Mosqueiro, made the rescue and then we were called to make the rescue of our colleague who had been injured [...]" (MF8)*

> *"Our work isn't safe at all. One day we were called for a stab victim, when we arrived at the place, everything was dark, with no light, the police hadn't arrived, we had no support, and that person who stabbed the victim could still be there [...] another situation is when we almost always drive at high speed to arrive in time to help the victim [...]" (MF11)*

As observed in the participants' speech, the PHC professionals face daily difficulties, such as violent communities, poorly lit environments, climatic exposures—sun and heavy rain, the risk of traffic accidents, care for multiple victims, victims trapped in cars, burial, and landslide, among others.[21] Physical assaults by victims of a homicide trial who have psychic disorders are the most recurring risk in dangerous communities.

Psychiatric urgency is usually perceived as one of SAMU tasks in the mental health care network, which includes the military police and the fire brigade, according to the Ordinance 2048/GM.2 A person in crisis often loses the perception of state and refuses care, which requires a non-standard emergency care procedure, for which it is necessary that these professionals receive proper training.

With regards to the support from the civil and/or military police, it is possible to observe the lack of coordination in the care delivery. According to the government of the *Pará* State, in compliance with the Legal Opinion No. 040/2011, the CBMPA must act in an integrated manner with the other Public Security agencies and Secretaries of State, in order to make the rescue environment as safe as possible for the victim and professional who provides care.[22]

Therefore, it is of the utmost importance to give these professionals the importance they deserve since they are

exposed to numerous risk factors in a hospital environment and at the victim's location. Also, the need for continuous, technical and professional improvement of these professionals, and the synergy between the CBMPA and other Public Security agencies are necessary in order to reduce the risks experienced by them.

CONCLUSIONS

According to the study's results, it was possible to observe and discuss the perception of firefighters about PHC, and also emphasize their experience at work, a fact that demanded a great commitment for providing an effective care for people in risk situations.

Considering the statements, the PHC performed by the firefighters is much more than a care service outside the hospital environment; it is a care without a predetermined place/environment, which either may be easily accessible or not, and might have predictable and/or unpredictable risks. The firefighters work saving lives and need to be agile and accurate in order to achieving this. According to them, such a service would obtain more quality if health professionals were included in the rescue group so as to improve the emergency care.

This study contributes to the construction of knowledge and discussions about the fire brigade's performance and perceptions about PHC, the importance of integrating a health professional with the rescue team, and the investment in the firefighters' training by using permanent education in order to improve the PHC service.

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