



RESEARCH ARTICLE

CONTINUING EDUCATION IN BIOSECURITY STANDARDS FOR ECOLOGICAL COLLECTORS

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ABSTRACT

For some time now, various changes have been made in the area of ecological waste collection in the municipality of Manta, to improve the quality of life of citizens and collecting workers, but there are still various risk factors that can affect the quality and well-being of those who work directly in the garbage collection. For this research the following objective was proposed: Propose a Continuous Training Program for the Ecological Gatherers of the Municipality of Manta, emphasizing the Biosafety measures. The approach of the methodology was mixed, with emphasis on exploratory and descriptive studies from a non-experimental design. This research found that most ecological collectors do not have an adequate level of knowledge about biosecurity measures when collecting garbage, they report that they do not have all the appropriate tools for biosecurity barriers, which leads to the appearance of digestive affections in 47% and influenza in 39%. This work revealed the need to implement a continuous training guide on biosafety standards that will help to stimulate activities and adequate protection of workers.

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INTRODUCTION

The author Obando, (2007). The Pan American Health Organization PAHO / WHO reports that the region of Latin America in urban centers around 350 million inhabitants, generate about 275,000 tons of garbage daily, of which only collected an average of 70% and only 35% is available in landfills. In addition, an estimated 100,000 informal segregators work. Rodenas, (2010). According to PAHO / WHO in 2002, Ecuador is responsible for approximately 7,400 tons of solid urban waste per day. Unfortunately, the institutions responsible for the services have shown precariousness both in quality, efficiency and coverage, proof of this is that only 49% of waste production is collected formally. United States Statistics, (2013) 4, states that there are some civil activities that are riskier and dangerous than others related to safety and public order and garbage collector occupy

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the sixth place with 33 fatal accidents for every 100 thousand workers. Surprisingly, in the United States, garbage collectors end up being more likely to die on the job than the police officers themselves. In the case of Peru, the statistics of the Ministry of Labor and Employment Promotion (2014). They indicate that 14750 notifications of occupational accidents in 2014, of which 128 had fatal consequences. The authors Narváez, Cecilia and Felipe Vera, (2007) 3. They carried out the investigative work on Occupational Hazards in the workers of the solid waste collection of the municipality of Ibarra in the period from July to December of 2007.... They identified the occupational risks to which they are exposed and the pathologies prevalent in solid waste collection workers of the Illustrious Municipality of Ibarra, the authors of this work concluded that there is a manual in the institution, but it is not read because it is very extensive, Handwashing is sometimes done and they do not use biosecurity measures. 92% of solid waste collectors have sufficient knowledge of the risks of improper handling of solid waste, since 42% have a manual provided by the institution and 85% have received adequate training. Despite the above, the staff does not wear suitable

clothes, gloves, face shields and protective glasses because they are inconvenient or because they are uncomfortable at the time of work, they do not value that, by ignoring these safety rules, they put their life at risk by the contagion to which they are exposed. In addition, they recommended a close relationship with these people to insist on self-education and proper use of biosafety measures. The purpose of this research is to develop a continuous training program on biosecurity measures to be carried out by the ecological collectors of the municipality of Manta, to help motivate them to use biosecurity instruments to prevent future personal infections and their familiar surroundings. As related personnel in the area of Health, it is observed the need to intervene in a research study involving the ecological collecting workers of the municipality of Manta, because in doing their work they manipulate the garbage without protective glasses, gloves, boots, mameletes or retroactive vests, being this a source to contract infectocontagiosas diseases causing in them diverse health problems and accidents at work, of direct and indirect way. It is important to emphasize that the institution does provide the utensils, but not very often. There is also evidence of a lack of motivation for the use of protection barriers possibly associated with ignorance of epidemiological problems in their profession. For this the following problem arises. How to increase the use of biosecurity standards in the ecological collectors of the municipality of Manta, which contributes to decrease the infections associated with their work environment, through continuous training and systematic controls of the use of protection barriers? to guide this problem the following questions were proposed. What is the level of knowledge about the biosecurity measures that each collector has? Do they have the necessary and adequate implements to carry out their daily tasks? Does continuous training in biosafety regulations have an impact on the health worker?

METHODS

Following the criteria of Creswel, 2003; The research will have a qualitative and quantitative approach, starting with an exploratory and descriptive study. For this the interview will be used to the ecological workers and the survey to the executives. In this research project will be used the non-experimental study design of transverse type. A systematic, random probability sampling will be applied, given the population of 113 elements for survey, where the researcher suggests working with 50 of these users, in the first instance the selection interval will be set that will be $113/50 = 2$. Next it is chosen the starting element, randomly taking a number between 1 and 4, and from it obtain the remaining subjects of the sample.

There remain to be polled 56 workers. To validate the data collection instruments, a pilot test was applied to 15 teachers from the Faculty of Nursing of the Laico Eloy Alfaro University of Manabí (Uleam) and 10 ecological collectors from the Municipality of Manta with more work experience, who indicated that the questions were clear and easy to answer, both for the interview and for the survey. In order to make the nail, human resources were requested for the rotating hours of the employees, and the work center was visited until the sample size was completed. It will handle the data by applying Word and Excel program for reliable results. The data will be analyzed by means of the generalization of a database in Excel that will allow to extract the percentages applying the

descriptive statistics. A code of ethics will be consulted at the National and Municipal level of Manta, to apply informed consent. With the purpose of elaborating a model of informed consent for the worker's collectors of the municipality of manta to carry out surveys. Where these people agreed to participate in the research of their own free will.

RESULTS

The Manager of the company indicated that if they have a plan of biosafety standards and that they have a chief of operations. That they do not have doctors of plant, but doctors of the patronage, by the subject of environmental management and by the occupational safety. When asked if they had material for the daily tasks, he replied that they gave workers, supervisors, and inspectors vests, gloves, caps, divers, what was difficult for them to deliver complete uniforms. As a responsible entity what the company does is to instruct the worker, train him in biosecurity and waste management rules, but logically at the moment they do not take advantage of the training and may not put into practice what is learned in certain situations. If an incident is generated, they are notified by a memo and then a situation analysis is done. Working together with the Ministry of Public Health (MSP), for doses and vaccination schemes, campaigns are carried out to disseminate and support the monitoring of biosafety standards. It is important to emphasize that human talent as a regulator of personnel, has a registry of common diseases in workers to follow them, which provided the doctor who performed the occupational examinations. The sample indicated that 60.71% have no knowledge of what biosecurity measures should be applied at the time of garbage collection and 21.43% indicate that they have knowledge. There is a perception that not all have an appropriate level of knowledge, causing them not to be able to carry out their work with the respective biosecurity measures. Emphasis is placed on the need for the worker to know the different elements of labor protection, with the theoretical and practical knowledge, to take practice to prevent risks that harm the worker and his family, especially if they recycle garbage. For this reason, it is advisable to know and apply the biosafety rules using all the elements of protection barrier. In Loja the author Guadalupe Yesenia.

Silva Vivanco, (2013) 5. Carried out an investigative work on "biosafety of garbage collecting personnel in the municipality of Loja", the universe is made up of 136 people who carry out the sweeping and garbage collection, survey to identify the level of knowledge in biosafety standards as a result of the survey 94.12% of staff have no knowledge about biosafety definition or type of physical, chemical and biological barriers that they have to use in their daily work, while in a low percentage of the staff if they have knowledge about biosafety however they do not apply the protection measures since in their work activity they are in contact with infected materials or infectious agents so they must be aware of the potential risks that in their work demand, in addition these workers should receive training on the proper management of organic waste to s work is safe. In Ibarra Caicedo Mario and Caranqui Diana, (2007). perform an investigative work with the objective of determining the biosafety standards in IMBASEO workers to avoid accidents at work and the risk of contracting infectious diseases, for the effect of this research was taken as a sample of 28 workers, where the majority of workers of the company do

not know about the application of norms of prevention of diseases this is 64%, while 36% are aware of the norms so that an adequate training on the subject is necessary. On the other hand, 53% of the sample indicated that the most used biosafety utensils are hats and gloves. This indicates that they do not use other biosecurity implements, negatively impacting workers' health. The workers refer that they often have to buy them since they are not always provided with the above mentioned materials. Based on the above, it can be said that the use of biosafety rules should be considered, as this group of people are at risk of contracting diseases related to their environment. In the Municipality of Loja Guadalupe Vivanco, (2013) 5, indicated that 100% of the staff use the mameluke and the cap as physical barriers and in 81.62% use domestic gloves, which are not suitable, because according to Biosecurity standards must be reinforced leather, to avoid injuries due to sharp objects, short sharp and sharp, demonstrating that the institution does not provide the protection barriers, exposing their workers to occupational risks that can affect their health, family and community.

The municipality gives them only once and if they are hurt to deteriorate the staff in charge they do not return them for that is why they do not use these physical barriers as they should do. Diana D, (2007) 6. In her research on biosafety in Imbaseo workers in the city of Ambato, 85% of the staff never use eye protection, 14% sometimes use them, 29% always use masks and 57% sometimes, the use of gloves is given in 29%, 21% never use it and 54% sometimes do. The researchers believe that the workers of the company for adequate protection in their work use a low percentage of gloves and masks while they are not supplied with eye protection and hearing, results that are not far from the literature consulted. It was observed that 80% of workers do not perform hand washing with antiseptic soap after completing their daily tasks, the soap to be used is mostly normal or detritus obtained by their own means, according to WHO if there is a Proper handwashing with antiseptic soap increases cross-infection. Results that do not resemble those of other authors. Diana L, (2015) 8, indicated that 55% performed hand washing and personal grooming, 45% frequently do so. Which makes us think that garbage miners perform hand washing in their daily work.

On the other hand, it can be seen that 50% of workers have suffered from diarrheal diseases, while 37% have influenza, 5% have conjunctivitis; 5% parasitosis and 4% skin problems, it is clear that the diseases with the highest incidence in ecological collectors are diarrheal and flu. The researchers infer that these results are the result of not using the correct protection for dust and environment and not performing a proper handwashing at the end of the working day. Chamorro Darwin and Yandún Patricio, (2011) 7. Manifest in their research on "Management of biosafety among municipal workers who classify garbage in the patabaran gully and its relation to the appearance of diseases" Ibarra 2011 ". Being the sample of 35 workers where the diseases that have developed for working in this type of place are respiratory in 46%, followed by skin problems in 31% and 23% digestive problems. 61% of the sample surveyed indicated that the Diphtheria and Tetanus vaccine had been applied, 30% indicated Hepatitis B had been applied, 8% had Influenza and 1% had yellow fever. According to the results it is perceived that the corresponding vaccination scheme is not being

complied with. affecting the power of workers, these vaccines being of utmost importance for health, since vaccines are the protective wall of the immune system Silva, (2013) 9. In his research carried out in the city of Loja using a sample of 32 indicates that most workers are not immunized against tetanus and hepatitis C, being exposed to occupational accidents and similarly a low percentage of workers if they have been immunized against hepatitis B, these vaccines being of great importance and which contribute to diminish their ability to produce diseases, thus maintaining their ability to stimulate the protective response of the immune system of the person vaccinated and avoiding in the future diseases or infections.

Conclusion

Through the support of the theoretical bases, we managed to structure the correct steps to create a continuous training guide on biosafety standards and protection barriers for ecological collectors. Once analyzed the information collected identifies that the population under investigation has deficiencies in knowledge about biosecurity norms and disease prevention. It was determined that collectors do not frequently use protective barrier equipment, which affects the development of infectious diseases, predominantly gastroenteritis and respiratory diseases, which contribute to the deterioration of their health and that of their family environment. A continuous training program and monitoring of biosafety standards and the importance of the use of epidemiological control barriers were developed for personal protection. The work schedule includes three training activities per year and monitoring intervals every two months. It is noteworthy that it is still pending to socialize with managers to launch the work planned for the month of October.

Recommendation

It is recommended to start up the training program and follow controls, to evaluate whether or not it decreases the spread of diseases associated with the misuse of biosafety standards.

Training Proposal

It begins by developing the theoretical-practical training of "Nursing education in biosecurity standards to the ecological collectors of the municipality of Manta". In order to encourage and achieve a culture in knowledge on biosafety causing a positive effect on workers. Stages and actions of the first phase. Stage 1: Participants Objective: To guide the training program in biosafety standards to those responsible for the well-being of these workers. Methodological guidelines for the development of actions. In this process it is necessary to know what are the weaknesses or problems that exist in the area, working together with the authorities in charge. Actions. Interview with the managers in charge of these departments, with the purpose of collecting necessary information. Interview with ecological workers to collect information on the issues that affect them. Stage 2: Development of theoretical-practical training in biosafety standards. Objectives: To develop a training program, where they contain issues related to biosafety standards so that once the program is completed, each individual will take it into practice. Orientation for the development of actions. At this stage the theoretical-practical training is developed for the ecological collecting workers. The training consists of a

theoretical and a practical part. Training is comprised of the following topics. GARBAGE Collection. Garbage collection is one of the jobs that due to the worst of cases because not having the necessary equipment is not seen as a decent job. Garbage collection is as important as the people who provide this service. Exposed to a high degree of pollution, they expose their health to serious diseases. The garbage collection service favors cities to remain clean, help prevent clutter in clandestine garbage dumps and make them a breeding ground for the spread of diseases.

Risks in activities for the collection and transport of solid urban waste

Public service companies in charge of collecting and transporting solid waste These points are highlighted: The work site is changing. It is constituted by public roads. Since that environment is not owned by service companies, it is almost impossible to maintain control over it. Special risks (interferences) appear because they cannot isolate the workplace, but must work in direct contact with the public (pedestrians, drivers with their vehicles, etc.). It is quite complicated to exercise careful supervision over the staff in the performance of their duties. A high percentage of workers are unqualified personnel (with deficiencies in education and in preparation) which increases the chances of accidents. In the event of an accidental injury, it is often difficult to provide timely (first aid) assistance. There will be delays in getting medical care and that wasting time can be fatal.

Vehicles for the Transportation of Waste

It is common in our midst to use trucks or open dumps, which have many disadvantages: The aesthetic aspect leaves much to be desired. Waste easily falls to the floor and disperses. At least one of the workers must remain on top of the load to receive and empty the containers and to accommodate the waste. There is a risk of falling and direct contact with waste is unhealthy. Usually the vehicle is deprived of safe means of access to the top. The vehicles, mostly in some municipalities, are old models, lacking stirrups and handholds for the safe transport of personnel on short journeys. The personnel of the collectors are accustomed to move along the public road, which represents a serious risk of falls, blows, entrapments, cuts and punctures with waste material, risk stumbling, risk being hit by cars driving on the public highway, (usually behind them). OCCUPATIONAL HEALTH Occupational Health aims to: promote and maintain, to the highest degree, the physical, mental and social well-being of workers in all occupations; the prevention of occupational diseases caused by working conditions; the protection of personnel from the risks resulting from adverse health factors in the different tasks; the location and conservation of workers in environments. Occupational health according to their physiological and psychological aptitudes; in short: the adaptation of work to man and each man to his own work. HYGIENE. Hygiene is science and art dedicated to the recognition, evaluation and control of all those environmental factors and conditions that originate in the workplace and that can cause disease, deterioration of health

and well-being, or appreciable discomfort and low efficiency among workers or among other citizens of the community. HEALTH. Health, according to the World Health Organization, has a concrete definition: it is the complete state of physical and social well-being that a person has. DISEASE. Alteration or deviation of the physiological state in one or several parts of the body, of a generally known etiology, which is manifested by characteristic symptoms and signs and whose evolution is more or less predictable. Any change in the health status of an entire organism or a part thereof in such a way that it cannot carry out its normal function.

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