



Available online through

www.jbsoweb.com

ISSN 2321 - 6328

Research Article

ENVIRONMENTAL LEARNING SCENARIOS, A PROPOSAL FOR HEALTH EDUCATION "CRITICAL RISK POINTS IN FOOD VENDORS"

Ruvalcaba Ledezma Jesús Carlos^{1*}, Cortés Ascencio Sandra yazmín², Raygoza Anaya Miguel³, Interían Gómez Leticia³, Jiménez Mora José Margarito⁴, Vázquez Alvarado Patricia⁵, Pelallo Martínez Nadia Azenet⁶

¹Full time Research Professor in the Academic of Medicine (UAEH) University of the State of Hidalgo, Mexico, Professor in the Master of Clinical Nutrition (UAD), Autonomous University of Durango, Campus Los Mochis, Mexico

²Professor Degree in Nursing from the (ULSA) University La Salle Pachuca Hidalgo, Mexico

³Research Professor in (CUCS-U de G), University of Guadalajara, Mexico

⁴Research Professor in the Academic of Education, (U de G), University of Guadalajara, Mexico

⁵Full time Research Professor in the Academic of Dentistry (UAEH) Institute of Health Sciences, University of the State of Hidalgo, Mexico

⁶Full time Research Professor in the Academic of Medicine (UAEH) Institute of Health Sciences, University of the State of Hidalgo, Mexico

*Correspondence	ABSTRACT
<p>Jesús Carlos Ruvalcaba Ledezma Full time Research Professor in the Academic of Medicine (UAEH) University of the State of Hidalgo, Mexico, Professor in the Master of Clinical Nutrition (UAD), Autonomous University of Durango, Campus Los Mochis, Mexico</p> <p>DOI: 10.7897/2321-6328.02349</p> <p>Article Received on: 07/04/14 Accepted on: 19/05/14</p>	<p>From public health and education to health teaching staff and others should incorporate their students to perform educational activities to cause in the student the ability to know how to observe and describe the observed in accordance with observation guides, fundamentals or rules, but also so the food consumer can observe thoroughly and provide feedback to the food preparer, as a proposal to cause changes in attitudes and behaviors and reduce health risks in the population. It is important that both health professionals and the public in general are more aware of this situation. The aim of this study is to describe the critical risk points from the perception of students who study the subject of public health. Participant's observations and critical analysis were performed with the perception of students in food vendor's stand with significant inflow of customers. There are critical risk points that denote risk to health; the feedback causes responses that could be meaningful to become aware in respect to attention processes to customers. The observation executed based on previous knowledge that will be promoted to the consumer, will make possible to identify the areas of preventive or corrective opportunity for health risk and consumers with their feedback observation may favor the style and quality of life from changes in behavior and attitudes.</p> <p>Keywords: Health education, observation, describes feedback, risk behaviors.</p>

INTRODUCTION

Critical risk points represent an opportunity area from the point of view to prevent and of control measures, a way to inspect the quality of the food, stands and procedures during food handling (García y Salcedo, 1999). This can be done by going to the place and through observation, verify the identification of critical risk points and control points; an educational way consists of going to make a planned visit to any establishment where food is sold. It is only necessary that each of us take a quick look at those times when we went to buy some prepared foods, as we went to buy some tacos and we realized that the person who sells this type of food is the same person who is charging, or has an assistant, but equally charges and helps in the assignment of preparing food. In that

situation, do you comment something about it to the person who sells that food or just limit ourselves to accept the practice and lead those tacos to our intestinal tract, it is here where each of us can provide feedback to the seller of the food about the risk of consuming that food, even by making him see that he is realizing an inappropriate practice that has health risks and just tell him that we don't want to buy those health risks (García y Salcedo, 1999). The classroom learning about these issues takes place between actors, such as the teacher and students, we review content and learn for an exam, instead of learning to take this in the context of the problem, where the real problem occurs and where the impact of learning would originate an improvement between the preparation and distribution of food with better quality, this

means that teachers, students and citizens who paid for the service should be satisfied with certain needs, we have the right to eat healthy food, free of risks to a greater proportion and for the seller to offer a better service every day from the hygienic quality of each product that he sells. As an educational exercise, you can go to a taco stand or restaurant and perform an observation guide about the critical risk points and control points, to improve food quality and risk control associated with food intake with microbiological contamination such as fungi, parasites or toxins, then you describe the observations and keep them in a logbook (Notebook) where you propose which would be the control points to execute (Secretaría de Salud DF, 2000). This lets you know what aspects, in the chain of food handling, should work to implement strategies of education to health or implement participatory public health actions (NORMA OFICIAL MEXICANA NOM-120-SSA1-1994). Environmental Activities increased self-determined motivation toward environment (Karaarslan, *et al.*, 2014)

MATERIALS AND METHODS

Participant observation and critical analysis were performed with the perception of students in a taco stand with significant influx of customers. Prior to the exploratory visit, an observation guide was done of critical risk points and it was applied during the visit. This exercise is carried out daily by inspectors from the health sector, but should be developed by all people. This assessment that is left only to the authorities in health won't have any impact on lifestyle and quality of life of the population. Increase in morbidity rate (illness) and mortality are from causes associated simply with the act of eating, obviously contaminated food, in dirty spaces where insects such as flies that carry microorganisms that then cause us to feel stomach pain, temperature and diarrhea and other symptoms of an acute illness, but there are risks by eating foods contaminated with toxins and even chemicals which cause a gradual chronic disease. If we are exposed to substances such as aflatoxins, or chemicals such as arsenic and chromium among others, we can develop liver cancer. That is why we should inspect the physical space, the process of preparation of food and the food itself to avoid illness.

The public health professionals, public health educators, even a person simply by being a consumer should exercise a remark directed at who processes or sells food, we can't be blinded to the imminent health risks, we should all watch what we eat and where we eat, involve public health, preventing disease, prolonging life and promoting health and efficiency through organized community effort (Amory Winslow, 1923; Vega Franco, 2001 and Lazcano 2013), that implies that consumers as a community participate in the prevention, a description of a remark directed can be as follows: Through participant observation and critical analysis of the perception by students.

RESULTS

The place observed has: inadequate facilities for the customer, offers the chance of getting infections and infestations by eating contaminated food, moisture in walls is evident as it is immediately visible, the tables and chairs don't have sufficient hygiene, routine cleaning of the tables are not periodic, rather it is sporadic and almost null, every soda that the client requests is cleaned with the same wash cloth that they use to clean the place and areas that are close

to the area of food preparation, electrical installations are quite risky due to the fact that they are outside of the wall, dirty cables with fly feces, improperly installed which can cause an accident. The floor has cracks, dust or land spaces where microbiological agents can be developed, such as bacteria, parasites and fungi. The dishes are cleaned near trash container, increasing the risk of cause cross-contamination and they tap the dish on the edge of the trash container, cleaning items are near the place of food preparation, and the money box is proximal to the area of the food preparation. Foods that form the main part of the preparation, meat and sauces, have improper handling, each time they add more water to sauces to make them last more or in order to serve them more easily in the preparation of tacos, this is an important control point, sauces that are prepared and are ready for their purpose, adding water again after minutes or even hours of being prepared, increases contamination risks especially diseases caused by bacteria, such as the typhoid. The cooks do not cover their hair in this case with a cloth or cap, and their sweat is likely to come into contact with food, they don't wash their hands even once in a while and do not have gloves. The grill where the food is prepared doesn't have the corresponding hygiene and the person who charges, serves the dishes and offers drinks, alters the risk of spreading a germ of an object to another and from the objects to food and people. They use wooden boards, the drain is located just a few steps from the intake area, which could represent risks due to the distribution of aerosols that could airlift enterobacteria. (Table 1)

DISCUSSION

Be careful in what you eat because the rate of disease is increasing and the consequences can be avoided, with this planned observation exercise, it was possible to detect that the place is highly risky for consumers, simply observe critical points to control risk (Secretaría de Salud DF, 2001). Prepared dishes are food that are prepared with various products having individually a specific flora, these are subjected to numerous manipulations, cooking could be a selection factor of spore flora which, when produced in a slow cooling or when cold food is exposed to ambient temperature, they may lead to overgrowth of microbial contaminants, to achieve good quality in food, it is necessary:

- Raw materials that are not contaminated or that are minimally.
- During its elaboration to prevent new microbial contributions and proliferation of the flora.
- Should be preserved properly after its preparation (Pascual, 1992). Epidemiology is the discipline that studies the distribution of health-disease processes, in time, space and person, as well as its causes and determinants, this has an historical, social and vital character, and in health, makes a changing phenomenon, a not necessary negotiable, epidemic outbreaks are develop at the mercy of the organization of social and biological conditions, and its intensity is basically a variable socially determined (Amory Winslow, 1923; Garcia and Salcedo, 1999; Vega, 2001). This denotes that the pedagogical work linked to the analysis of reality through the exercise of the power of observation is critical to prosecute not only student learning, but also the education of food vendors. The basis for the recent interest in health promotion can be due to the confluence of a number of different forces, including those considered by Pascual Anderson (1992).

- Increasing emphasis on positive health and improved quality of life.
- The greatest desire of people to exercise control over their lives, related to consumer trends.
- The limited effectiveness of traditional teaching strategies often associated with health education.
- The recognition that many health problems are related to individual lifestyles, and
- Increasing evidence of the weakness among health care and health status, especially the low profitability in the more expensive resources invested in health (Cerqueira, 2007).

Table 1: Synthesis qualitative observation and feedback critical risk points for students

Critical risk points	Perception by students	Observation-feedback	Health Risks
General facilities	Inadequate facilities for the costumer	Areas of preventive or corrective opportunity for health risk in health. No hair cover.	Overall gastrointestinal infectious diseases, typhoid, amoebiasis, diarrhea, Cholera infestations.
Tables	Routine cleaning of the tables are not periodic	Report that is dirty.	Final Comment of the students Going to build facilitates learning scenarios.
Floors	The floor has cracks	Dust or land spaces where can be developed microbiological agents, such as bacteria, parasites and fungi. The dishes are cleaned near trash container, increasing the risk of cause cross-contamination	
Food. (Sauces)	Add water again after minutes or even hours to be prepared, increases contamination risks especially diseases caused by bacteria	Comment and feedback discreetly paying	
Money Management	The grill where food is prepared isn't have the corresponding hygiene and the person who charge, serves the dishes and offers drinks, altering the risk of spending a germ of an object to other and the objects to food and people.		

Source; Direct. Observation guided students Health Sciences “Environmental learning scenarios” 2013

We must consider that the co responsibility for health concerns us all, (Cortés and Ruvalcaba, 2011), likewise design strategies for public health education (Cortés and Ruvalcaba, 2011b) and realize that the government isn't the only responsible for constantly monitoring of food quality sold to the public, therefore, before the identification of a critical risk point, feedback undoubtedly affects the quality of service and food. It is important to the health authorities to recommend reviewing the essential functions of public health, at least in the first quarter to eleven, which includes: Monitoring and analysis of the health situation of the population, Epidemiological surveillance, public health surveillance, investigation and control of risks and threats to public health, Health promotion and Social participation and empowerment of citizens in health. These includes the participation of society and of the government on health services (Cortés and Ruvalcaba, 2011b; Lazcano, 2013). Quality education fosters the population development, which is required to start from the application of pedagogical models from the constructivist approach where knowledge is constructed and collaboration is encouraged, for example, group collaborative learning, project work teamwork theories and applications such as cognitive modifiability from which to generate awareness of their learning is fostered and their environment in order to promote improvement in the style and quality of life (Ruvalcaba and Cortés, 2013 and 2013b). It is essential that consumers have a better understanding of the perception of risk, which will be reflected in an effective education for food safety (Roseman and Kurzynske., 2006; Brown, *et al.*, 2007). Consumers, as the last link of the preparation, service and maintenance of food even in homes, should take responsibility for contributing to food safety

because good hygiene practices at all levels does not apply (Allard., 2008). Environmental Activities increased self-determined motivation toward environment (Karaarslan, *et al.*, 2014) and problems of public health in the context of problems in real life.

CONCLUSIONS

The observation executed based on previous knowledge that will be promoted in the consumer, will make possible to identify the areas of preventive or corrective opportunity for health risk and consumers with its feedback observation may favor the style and quality of life. Education in food vendors from the buyer's responsibility to make observations regarding hygiene, in which these are sold, is a source to become aware of the importance of food safety. It is the responsibility of food vendors and of the buyers to take part in the guarantee of food safety. Strategies of health education corresponds to the teachers in their design from the development of their planning, considering that learning from students is significant, being a trigger mechanism of responsibility in the health-disease process, on the eve to proceed of preventive form to the aggression caused by the microorganisms. Thoroughly observation and feedback to the food preparer, as a proposal to cause changes in attitudes and behaviors and reduce health risks of the population, correspond to all citizens, that is, health professionals and the public in general, in co responsibility with health services.

ACKNOWLEDGEMENTS

The authors of the present research article would like to acknowledge and truly thank the collaboration of Monroy Moncayo Nallely, Zamora López María del Carmen, for her contributions on the revision and

translation of the article; situation which allows the possibility to increase the transferring and modification of scientific knowledge.

REFERENCES

1. García de Alba García JE y Salcedo Rocha AL. Capítulo 1. Aspectos generales de salud pública y epidemiología Torres Vitela, MR. Agentes patógenos transmitidos por alimentos. Ed. Universidad de Guadalajara; 1999. p. 13-23.
2. Secretaría de Salud México D.F. Subsecretaría de Regulación y Fomento Sanitario. Dirección General de Calidad Sanitaria de Bienes y Servicios. Guía de Análisis de Riesgos, Identificación y Control de Puntos Críticos. Agosto Del; 2000.
3. Norma Oficial Mexicana NOM-120-SSA1. Bienes y servicios. Prácticas de higiene y sanidad para el proceso de alimentos, bebidas no alcohólicas y alcohólicas; 1994.
4. Amory Winslow E. The Evolution and Significance of the Modern Public Health Campaign. New Haven: Yale University Press; 1923.
5. Vega Franco L, García Manzanedo H. Bases Esenciales de la Salud Pública. La Prensa Médica Mexicana; 2001. p. 1-12.
6. Lazcano Ponce E. Martínez Montañez OG, Charvel S Hernández, Ávila M. Salud Pública, teoría y práctica. Manual Moderno- INSP; 2013. p. 1-27.
7. Pascual Anderson MR. Microbiología alimentaria. Platos preparados, Editorial Díaz de Santos; 1992. p. 319.
8. Cerqueira MT, León Nava F, De la Torre A. Evaluación de la promoción de la Salud principios y perspectivas, Un marco para la evaluación de la promoción de la salud ed. OPS; 2007. p. 29.
9. Cortés Ascencio SY, Ruvalcaba Ledezma JC. La corresponsabilidad en salud pública. Viva salud, INSP. Instituto Nacional de Salud Pública; 2011. p. 40-43.
10. Cortés Ascencio SY, Ruvalcaba Ledezma JC. Estrategias para Educación en Salud Pública. Viva salud, INSP. Instituto Nacional de Salud Pública; 2011b. p. 35-38.
11. Ruvalcaba Ledezma JC, Cortés Ascencio SY. El contexto socio-ambiental y la Educación para la salud en San Andrés Paxtlán, Oaxaca, México. Xihmai 2013; 8(16): 7-27.
12. Ruvalcaba Ledezma JC, Cortés Ascencio SY, Jiménez Mora JM. Salud Pública en México Implicaciones para la enseñanza de la biología y las ciencias de la salud. Revista Biografía. Escritos sobre la enseñanza de la Biología 2013; 6(10): 50-58.
13. Brown J, Kendall, Hyatt D and Stone M. Survey of Consumers Attitids and the Effectiveness of Hand cleaners in the Home. Food Prot. Trends 2007; 27(8): 603-611.
14. Roseman M and Kurzynske J. Food safety perceptions and behaviors of Kentucky consumers. J. Food Prot 2006; 69(6): 1412-1421.
15. Allard DG. The farm to plate approach to food safety-Everyone's business. Can. J. Infect. Dis 2008; 13(3): 185-190.
16. Karaarslan G, Sungur S and Ertepinar H. Developing preservice science teachers' self-determined motivation toward environment through environmental activities. International Journal of Environmental and Science Education 2014; 9: 1-19.

Cite this article as:

Ruvalcaba Ledezma Jesús Carlos, Cortés Ascencio Sandra yazmín, Raygoza Anaya Miguel, Interían Gómez Leticia, Jiménez Mora José Margarito, Vázquez Alvarado Patricia, Pelallo Martínez Nadia Azenet. Environmental learning scenarios, a proposal for health education "Critical risk points in food vendors". J Biol Sci Opin 2014;2(3):221-224 <http://dx.doi.org/10.7897/2321-6328.02349>

Source of support: Nil; Conflict of interest: None Declared