

## Five-session Training Course for Recyclable Workers of the Structural Dump, Brasilia, Brazil

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**Date and place:** Throughout February 2019 a training course was organized in the auditorium of Centro de Referência Especializado de Assistência Social (CREAS) in the city Estrutural, Brasilia, Brazil. The training was divided into five meetings including approximately 120 collectors (60 in the morning shift and 60 in the evening shift).

**Coordinator:** Vanessa Cruvinel, professor in epidemiology in the public health department of the University of Brasilia (UnB).

**Contributing professors:** Carla Pintas and Dayani Galato, professors in public health and pharmacy, respectively, and João Melo, professor in production engineering, at the UnB.

**Background:** World-wide an estimated 20 million people earn their living from recycling waste (ILO Green Jobs Report, 2013). Waste picking often involves the collection, sorting, and processing of materials with little or no health and safety protection measures. Waste pickers may work in the streets, open dumps, sanitary landfills, and sorting warehouses, where each workplace presents different degrees of risks and vulnerabilities to waste pickers. Workers are exposed to many adverse health outcomes from contact to medical waste, heavy metals, dusts and chemical vapors, heat and cold stress, falls and other injuries. Most of these workers are under informal employment without access to social protection where on average, earnings are low and risks are high. Brasilia, Brazil was home to the largest dumpsite in Latin America (the second largest in the world), the Structural dump. As part of the official closure plan for the open dump, Public Health Brasilia asked to partner with UnB to describe the demographic variables and prevalence of chronic, communicable, and non-communicable diseases in the 1200 waste pickers who worked at this site.

**Objective:** The proposal for the five-session training course was a continuation of the activities of the Stop, Think and Discard (PPD) program of the UnB. This program is responsible for providing health promotion workshops focusing on topics addressed in the 2017 health questionnaire regarding health outcomes of the scavengers working in the Structural dump. With results from the survey, priorities were identified for health education, which formed the basis of the training sessions.

## **Description of Actions:**

**The topics covered were:**

- 1. Water borne diseases;**
- 2. Non-communicable diseases;**
- 3. Communicable diseases and sexually transmitted infections (STIs);**
- 4. Accidents and occupational risks;**
- 5. Course evaluation.**

Professor Vanessa Cruvinel began the training course with a presentation about the data found in the epidemiological survey, considering that the collectors who were present had participated in the diagnosis. An active methodology was used that focused on the demands, prior knowledge, dialogue and qualified listening.

All meetings began with a reception of the collectors, video presentation for sensitization, practical activities and individual interviews. The interviews had up to 15 guiding questions to better understand the illness process and their expectations, knowledge and doubts about the diseases in question. These interviews served as a source for the planning of future health promotion actions that were carried out in the next meetings.



### **Meeting 1 – Water borne diseases**

The lecture was given by students of nursing, phonoaudiology, physiotherapy, and collective health of the Stop, Think, Discard program. The forms of contagion, symptoms, treatments and ways of preventing diseases: leptospirosis, cholera, hepatitis A, verminoses, dengue, zika and chikungunya, were discussed. This topic was chosen as a priority for the first meeting, since 1/3 of the collectors interviewed in 2017 reported having at least one of these diseases previously. Data confirmed waste pickers experienced continuous bouts of diarrhea episodics (24.9%), intestinal worms (12.6%), hepatitis A (1.7%) and leptospirosis (0.7%). Women had almost a 3 times greater chance to have worms in relation to men; those who didn't filter the water had a 1.8 times greater chance to have worms in relation to those who did. Dengue, zika and chikungunya viral infections occurred in 28.60% of collectors. These findings show that the sanitary conditions of the site and the surrounding area, the lack of access to treated water in some neighbourhoods of the Estrutural, and the inadequate storage of available resources, act as facilitating factors for the rapid multiplication of waterborne diseases and vectors such as *Aedes aegypti*.

## **Meeting 2 – Non-communicable diseases**

Recyclable collectors also suffered from non-communicable diseases like hypertension, diabetes, high cholesterol and obesity which often occur due to social determinants and poor diet. In relation to chronic diseases, 24.2% of the waste pickers confirmed hypertension. According to the anthropometric measures, 32.6% were overweight and 21.1% were obese. Of the total, 10.1% reported diabetes, 17.2% high cholesterol and women were more affected with a statistical difference ( $p=0.005$ ) and ( $p >0.001$ ), respectively. In Brazil, women present a higher proportion of high cholesterol (15.1%) than men (9.7%) and hypertension (27.5%) and (23.6%), respectively (PNS, 2013).

With regards to respiratory diseases, 14.3% reported bronchitis, with a statistical difference between men (9.7%) and women (16.4%) ( $p =0.003$ ); 8.8% asthma and 9.8% had pneumonia with no difference between men and women ( $p= 0.066$ ) and ( $p=0.124$ ), respectively. In Brazil, the number of deaths by these respiratory diseases varies from 19.7 to 29.4 per 100,000 people.

## **Meeting 3 – Communicable diseases and sexually transmitted infections (STIs);**

Recyclable collectors were also exposed to communicable diseases, including sexually transmitted infections. Of the total, 1.6% of the sample had tuberculosis. About 75,000 new and recurrent cases of tuberculosis were registered in Brazil in 2016, equivalent to 200 cases per day. Worldwide, about 10.4 million people were infected with tuberculosis in 2016, and 10% of the victims have HIV. Brazil accounts for one-third (33%) of the entire burden of tuberculosis in the Americas, and is one of a group of countries accounting for almost 40% of all tuberculosis cases in the world and about 34% of cases of HIV coinfection ([Data: www.who.int/tb/data](http://Data.who.int/tb/data)).

According to serology's there were 28 positive cases of syphilis, 6 cases of HIV/AIDS infections, and 33 cases of hepatitis B. The study was extremely important to identify the cases allowing the worker to know about their health condition and receive timely treatment within the basic care for their protection and prevention of their communicants.

## **Meeting 4 – Accidents and occupational risks**

The majority of waste pickers (68.70%) reported accidents and most of them (89.69%) were related to exposure to sharp objects including needles, glass and syringes, during their work activities despite using gloves, boots and long-sleeved shirts as personal protective equipment (PPE). Many of these people have been working as recyclable collectors for most of their working life with an average of 15 years. Most of them did not report the accident, did not search for treatment, and had no social insurance or support from the coop.

*“When I worked at the open dump, I used a hook to rip the bags. I hit a flask of insecticide and it exploded in my eye. I used water and didn't go to the hospital. After 15 days, I went back to work. It was 4 years ago. At night, I can't even close far. When I walk under the sun, it burns too much”*  
– male 29

Professor Dayani Galato talked about medical waste, places of correct disposal, laws, medication, and risks of accidents. The dialogue was to familiarize the waste pickers with the importance of using all PPE, reporting the accident and searching for health care in the case of an accident.

## Meeting 5 – Course evaluation

In the final meeting, the scavengers were divided into groups of 8 people. Each UnB student who was present during the course was responsible for a group. Each group was asked to answer three questions including:

1. Which activities they liked most;
2. If during the course they had changed some habit either at home or at work;
3. Which other topics of interest they would like to be addressed in future courses?

Responses:

1. Activities that they liked the most- Many of them said they enjoyed all the activities, especially the lectures that spoke about STIs, and the diseases that are transmitted through water. Besides those, they reported the importance of using PPE for accident prevention, including the disposal of medicines, protection of hearing health, and practice of gymnastics and stretching to prevent hypertension.

*“The gym was good. It taught us a lot of good things about the water and how to always exercise. I’m walking every morning. I teach my granddaughters to wash their hands before they eat and to brush their teeth. I do not have a water tank at home. I store in bottles in the refrigerator” – female 65*

*“I enjoyed the care to avoid sexual diseases and sugar care to prevent diabetes. I’m trying to boil the water at least for the kids to drink. Now I’m walking. I’m feeling much better. More willing, more courageous. I learned more about how to store medicines, shelf life, water care, hygiene, food, washing vegetables, especially leaves ... the class was very good. I learned a lot” – female 64*

*“I learned a lot of things. I’m practicing much more water hygiene in the washing of the hands. About my health, I ride a bike every day, I don’t have high blood pressure or diabetes. I learned to save medications better. To use some medicines, we need to be careful because we don’t have a doctor to consult. And it’s not just me, many people want to find a way to get well” – male 62*

2. Change of habits: Many reported that they began to wash their hands before and after going to the bathroom, started to consume only treated water, began to use safety equipment, practiced physical exercise, decreased consumption of salt and soda, and started to separate household garbage and appropriately discarded medicines.

*“I think the course was wonderful. I like to know about hygiene, about water care and what happens when we do not use filtered water. I liked the gym. Decrease salt – I’m just putting in a pen cap to make food. I could not reduce sugar, especially in coffee. I’m taking the medicines I no longer use to the pharmacy. I used to throw them in the trash. I liked the movie that talked about obesity. Now we’re wearing gloves, glasses, and boots. We just don’t have a hard hat” – female 62*

*“I was already following many things that were taught exactly. I'm alone and I have to take care of myself. I'm hypertensive and I like salt and after training, I learned to use a pen cap for all of the food. Now I'm boiling the drinking water. We're feeling better now. It does not taste strange. We have no more belly pain. I could not start doing the exercises yet. At work, we are wearing a hard hat, gloves, lab coat, long sleeves. We always have the precaution of telling colleagues when you have a needle in the trash. Lately it has subsided. Inspection is better. I have no partner, I am a widow, but if I do I will use a condom for prevention” – female 48*

*“I enjoyed learning more about the leg and bone diseases a lot. I started to ride a bike. I have high blood pressure issues. I started to run a little bit. I have a gout issue, and after I started doing physical exercises it greatly improved the pressure, improved self-esteem. I was afraid to die and after I started to do physical exercises, everything got better. I learned to pay attention to ‘beware of water’ to avoid dengue and avoid cockroach, rat, bad smell. All this I learned from you. I started to wash my hands. It was worth it. I'm picking on the streets, I wear gloves and boots and white glasses and a hard hat. I've never suffered an accident. About medicines, I taught my wife to save medications better, look at the expiration date. I pack in a closed can and take it to the health post. The classes were very good!” – male 54*

3. Topics for future courses: Collectors suggested talking more about contagious diseases, skin cancer, depression, drug and alcohol use, domestic violence, and cooperativism.

## **Results:**

There was great participation of the collectors in relation to the proposed activities. They asked a lot of questions and added new information always valuing their own unique experiences. The feedback was very positive. The waste pickers were very grateful for the activities that were carried out throughout the month and asked for other opportunities to gain more knowledge on the topics that were addressed.