IMPROVING GREEN PHARMACY COMPETENCES OF PEOPLE WITH ID (INTELLECTUAL DISABILITIES)

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Abstract

The activity we present here is a Service-Learning project carried out by PhD students of Green Pharmacy (Universidad San Jorge, Spain) in order to promote the social inclusion of people with intellectual disabilities (ID), improving their communication skills with pharmaceutical professionals and to improve their Green Pharmacy competences.

The activity is aimed at the users of the CEDES Foundation. CEDES is a social non-profit organization committed to the integral care of children, youth and adults with intellectual and/or developmental disabilities (DD).

PhD students of Green Pharmacy become aware of the effects that the drugs produce in the environment, learn how to control the pollution and to propose environmentally sustainable alternatives for the pharmaceutical industry. As part of their learning process, the students carry out this activity within the framework of the PhD program.

The students are asked to create an infographic explaining how the drugs arrive to the environment, their harmful effect and the importance of making rational use of medicines in order to prevent environmental pollution. This information has to be explained graphically and using adapted language. The infographics are printed and placed on CEDES main building, then are explained by the students and finally, infographics are in view of all users for a month.

Furthermore, CEDES users visit the experimental laboratory in which the PhDs usually work and students teach how to assess the environmental impact of the drugs. Some experimental equipment is used such as microscopes.

To evaluate the impact of the intervention on people with ID, CEDES users will answer a questionnaire before the intervention and after the activity.

The expected results are the following: people with ID acquire a greater understanding of concepts related to drugs and the environment, being aware of the importance of properly disposing of this type of substances. On the other hand, likewise, the PhD students improve their ability to communicate with this collective and are aware of this type of disability.

Keywords: Environment Pollution, Intellectual Disability, Awareness, Infographic.

1 INTRODUCTION

Service-Learning is different than innovation in education and community service in several key ways. Service-Learning includes student leadership, motivation, reflective and academic components, and chances for changing the reality that surrounds us once the service activity has been effectively completed. Service-Learning is characterized by the reflection of students on community needs, the best way to help, and once the service has been finished, students can cogitate about the whole process; how their work has helped to the community, while learning about academics in any area of science.

In this case, doctorate students of Green Pharmacy (Universidad San Jorge, Spain) have carried out a Service-Learning activity. The targeted of this activity are people with ID. The main objective of this activity has been to improve the communication skills of people with ID with science professionals and to improve their Green Pharmacy competences and environmental awareness. The secondary objective of this activity has been to promote the social inclusion of people with ID. The objectives for the PhD students have been to increase social awareness about this type of disability, learn while teaching in an adapted language and perform social work.
People with ID come from the CEDES foundation located in Zaragoza (Spain). CEDES is a social non-profit organization committed to the integral care of children, youth and adults with intellectual and/or developmental disabilities. It promotes actions aimed at improving the quality of life of their users, generating opportunities to carry out their full life project. This foundation aims to maximize personal development, autonomy, inclusion and active participation in the community environment of people with intellectual disabilities. For the CEDES Foundation, this project is of great interest.

2 METHODOLOGY

The methodology carried out has been structured in several milestones that have been achieved chronologically. A scheme of the procedure can be found in figure 1.

Firstly, the activity was presented to the PhD students. The objectives were exposed and the calendar was given. The students will have to explain how the misuse of medicines can contaminate the environment. It was also mandatory to explain the route that the medicines follow from the ingestion until its elimination in the residual waste and their final fate (rivers, lakes, etc.). On the other hand, students should offer environmentally sustainable alternatives, such as the use of the SIGRE point in pharmacies (where expired drugs should be discarded in Spain, http://www.sigre.es/). PhD students should elaborate an interactive infographic including this information and explain it for the CEDES users.

Then, Cedes staff gave a class about the characteristics of the people to whom the activity is targeted and how to deal with them, what kind of language to use and how to solve the problems that could arise during the intervention.

PhD students prepared two infographics, one for children and another one for adults, including the same information in both posters. Furthermore, there were several items that people with ID will have to place in the correct place of the infographic.

The posters were explained in CEDES foundation and users could play with the items and learn about the final fate of drugs. During one month, infographics were exposed and available for CEDES users.

After that, several people with ID carried out a laboratory session at Universidad San Jorge, in which the (micro)organisms used for evaluating the impact of the drugs in the environment were showed.

CEDES users filled a questionnaire before and after the intervention.

3 RESULTS

3.1 Materials generated

An important amount of materials were generated. In figure 2, the infographics are presented.
During the intervention, the interactive infographics were explained and CEDES users answered the questions and carried out the proposed activities. In figure 3, some photographs of the interventions in CEDES venue are shown.

Furthermore, the information provided to CEDES users were translated into pictograms. Pictograms are the language normally used in the foundation since many of the people with ID lack the capacity of written language. In figure 4, the translated sentences are shown.

If I'm sick, I go to the doctor. The doctor prescribes the medication. The medicines cure me and I get good.

Medications are collected at the Pharmacy.
If I have questions about the medications, I ask the doctor or pharmacist.

If we take more medication than we should, they are eliminated. This makes it possible to reach rivers and affect nature.

Do not throw the medicines in the trash or the toilet, they can contaminate the rivers.

Check your medicine cabinet once a year.

Dispose of expired medications correctly in SIGRE containers in pharmacies.

The SIGRE point separates the components for later recycling.

Figure 4b. Translation of the sentences provided during the intervention.
3.2 Quantitative results

CEDES users filled a questionnaire before and after the intervention. Questions were related with the effect of drugs in the environment, the correct disposal of expired pharmaceuticals and types of living organism in the aquatic ecosystems.

Before the activity, 64% of the questions were correctly answered. After the activity, people with ID were able to answer correctly the 84% of the questions.

The question that was missed more often before the intervention was related with the negative effect of drugs in the environment (more than 67% of interviewed people failed). After the activity, only 33% of the CEDES users did not answer correctly.

It was also interesting the answers obtained in one question related with the different organisms that live in rivers and lakes. After the activity, only 11% of the users failed the question in contrast with 56% of fails before it.

Details about the results can be found in figure 5.

3.3 Qualitative results

People with ID have learned how to properly dispose medicines and why they should do so through a different activity than the conventional ones in their daily life. Likewise, the people interviewed will improve their ability to communicate with scientists.

PhD students have put into practice the knowledge acquired in their training and have developed tools such as the capacity for innovation and originality to communicate effectively with the population with ID. PhD students have learned how to use pictograms.

4 CONCLUSIONS

The project has been very satisfactory for both PhD students and users of CEDES. Valuable and new materials have been generated and will be used in the future for increasing the environmental awareness of people with ID.

This project is easily transferable and incorporates elements that facilitate its replicability in other groups at risk of social exclusion such as adult education or groups of immigrants with communication difficulties.
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REFERENCES