

# Changing Social Practices of discarding pharmaceutical waste in households: a case study in Portugal

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A wide range of pharmaceutical waste are produced and discarded at household level.. In a simplified way, three main routes for discarding household pharmaceutical waste can be identified: (i) source-separated and delivered at collection points that route it to a waste treatment process or (ii) thrown away mixed with urban waste or to the sewage. This second (ii) way of discarding the pharmaceutical waste has a strong negative impact in the environment, it releases dangerous chemical pollutants into the ecosystems, being invisible to the naked eye. To face this situation there are public policies with a set of rules and guidelines at European and national level. However, to accomplish the goals social participation is essential, meaning that household waste disposal practices are a fundamental key for the success..

In this paper we propose to identify some factors that are implied in segregation the disposal of pharmaceutical waste in Portuguese.

The social research concerning this issue in Portugal is poor. There are already some studies on urban waste social practices (eg. Schmidt & Martins, 2006 and 2007; Valente, 2013; Schmidt & Valente, 2015) but only a few focused on pharmaceutical waste social issue. In 2014, VALORMED, the non-profit association responsible for collecting and treating pharmaceutical waste in Portugal, promoted a pioneering study. The main operational objective of this study was to provide a deep insight into pharmaceutical waste in the Portuguese domestic framework. The fieldwork has provided an opportunity to observe disposal practices in a sample of 244 Portuguese families in their households. This sample was built in a way that reflects the social and geographical diversity within the country. In the timeframe of the study (2014-2015) it was possible to collect social data through 4 questionnaires. The study had also 4 main phases, each one included a household visit and a questionnaire. In the first visit (September-November 2014) the interviewer left a green box for disposal of all the pharmaceutical waste, with no further instructions; the questionnaire used at this first visit was the longest in order to provide an overview about people's practices, attitudes and risk perception on pharmaceutical waste (Dias-Ferreira et al, 2016). In the second visit (December 2014-February 2015) the interviewer weighted the waste in the box and delivered a leaflet by VALORMED with information on what should be placed in the box. In the third (March-May 2015) and in the fourth (September-November 2015) visits the waste discarded into the box was weighted again the data compared to the early phases in this research.

The data collected during the field work has provided interesting elements regarding changes in domestic disposal practices of pharmaceutical waste. In addition, the fieldwork offered privileged moments of direct communication with the families' reality, and as consequence, promoted an increased awareness among household members about pharmaceutical waste disposal. This increased awareness was achieved through the surveys itself, that lead to self-reflection of daily practices (so "near" that become "invisible"), by handing out informative leaflets, and also by the engagement in the study itself, which reinforces the importance of the family's behavior (in the sense of accountability).

On the top of this strong communicational component, another relevant factor can be identified in this process: the introduction of a material element – “the Box” - for the domestic separation of pharmaceutical waste. This reinforces the idea that the infrastructure influences decisively the way perceive waste management at household level, adding to the common leading factors, such as “belief, values, personal competences and experiences” that drive people to segregate waste at household level.

Therefore, in this present paper we analyze a set of data taken from the field questionnaires applied throughout the study, which allow us to get an overview about the change of attitudes and practices of pharmaceutical waste

disposal that have occurred in the households, in particular the increase in pharmacy delivery from the starting point of the study to the end. The focal point of the analysis will be on what we can identify as potential factors of change: the multi-level communication and the material components present in the study. (Hargreaves, 2001; Spaargaren, 2011).

The most notorious effect has been observed at the discarding practices: a higher number of families started to dispose their unused medicines at the Pharmacy, and not mixing it with other household waste (Fig 1). Moreover, only a small number of families resisted to change, opposing to adopt good practices. Regarding social practices the present study leads to change in marketing the best practices in how to discard unused medicines. In that sense we hope it will help designing new collecting systems.

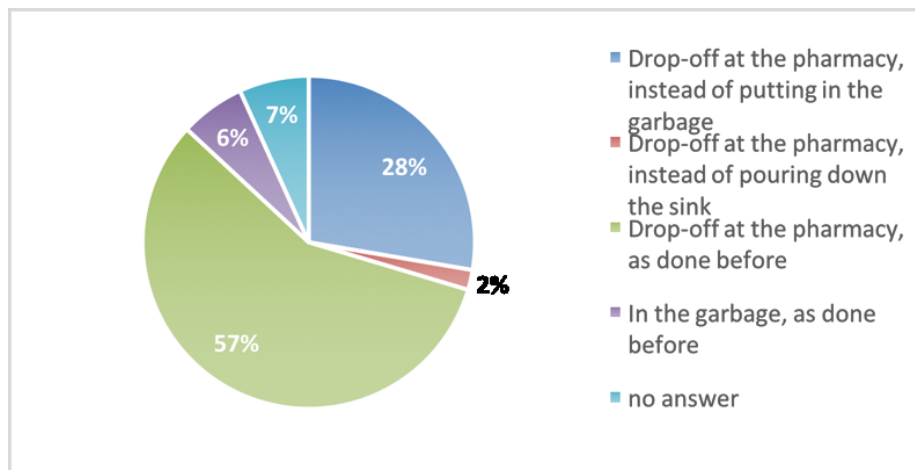


Figure 1. Changes in the disposal behaviour of pharmaceutical waste in households after one year

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