

MULTIPLE HUMAN VOICES AND AI: WHY IT IS SO DIFFICULT TO CARRY OUT EFFECTIVE MEDICINES COLLECTION CAMPAIGNS?

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Resumo

1 INTRODUCTION Medicines take-back campaigns are becoming more disseminated in diverse levels -hospital unities, municipalities, and even in regional and national scales (Daher, 2024). However, recent research reassure the need for more specific knowledge and practices embedded in such campaingns (Alfian et al., 2024; Kampamba et al., 2024), mainly to clarify lay people about the health and environmental relevance of medication return programs where no public information dissemination is available (Kampamba et al., 2024). Recent studies report short term campaigns as in Saudi Arabia (Abahussain, Alyahia, & Alajeel, 2024); in Turkey (Köskoy, 2024); and in Ethiopia (Tegegne et al., 2024), which indicate a possible ephemeral situation. Furthermore, in current studies, it is shown that pharmacists usually learn on medicines returns practices from their own place of work, out of the formal educational system (Daher, 2024; Alfian et al., 2024; Alqassab et al., 2024). In Brazil, campaigns for expired and unused medicines are not an obligation of the supply chain representatives, according the law (Brazil, 2020). The legal instrument that rules medicines reverse logistics in Brazil is silent about the obligation of public awareness campaigns - whether they can be originated from public or from private sector (Brazil, 2020). This article provides a short review on medicines take back campaigns, describes results of an ongoing research about the responsibilities and setbacks in this context (from interviews), and presents arguments of Artificial Intelligence (AI) about why these campaigns are not so emphatic as well-known public health campaigns as those promoted against suicide and cancer.

2 METHOD This study performed a literature review in Web of Science (WoS) and Scopus data bases, with diverse search strategies: search #1 - “medicines” AND “ campaigns” AND “return” AND “program”; search #2 - “medicines” AND “campaign” AND “program” AND “devolution”; search #3 - “medication” AND “campaign” AND “program” AND “return”; search #4 - “medication” AND “campaign” AND “return”; serch # 5 - “medication” AND “campaign” AND “delivery”; search #6 - “medicines” AND “campaign” AND “reverse logistics”; search #7 - “medication” AND “campaign” AND “reverse logistics”; search #8 - “medication” AND “program” AND “reverse logistics”; search #9 - “medication” AND “campaign” AND “disposal”; search #10 - “medication” AND “campaign” AND “take-back”. In WoS, 34 results were found, 2 repeated, resulting 32 studies. In Scopus, 11,309 results were initially obtained; from these, 181 were selected after removing not journal research or review articles and articles about specific types of drugs. A complementary search was carried out in Google Scholar, where 47 technical documents and academic studies as dissertation and thesis were identified. From these findings, there were selected 7 studies published in 2024 (the most recent). Simultaneously, there were performed short interviews with; lay persons (5); representatives of the Brazilian Environment

and Climate Change Ministry (MMA) (2); representative of independent retail pharmacies (1) and of retail pharmacies that belong to big networks (3); independent specialized journalist (in the field of Pharmacy) (1); and law representative of the LogMed system - the Brazilian Medicines Reverse Logistic system (1). One question was posed: who should be in charge of unused medicines collection campaigns? After this, a chat was taken with Open AI about why medicines take back campaigns are not so widespread than other public health campaigns in Brazil, as public advertisements against suicide (Yellow September) and breast (Pink October) and prostate (Blue November) cancers. 3 RESULTS The review in data bases brought some insights already presented in the Introduction of this article: that campaigns are still time limited, or punctual (Abahussain et al., 2024; Köskoy, 2024); that public and even professional knowledge is scarce - with respect of the pharmacists' role in take back movements of medicines (Daher, 2024; Alfian et al., 2024; Alqassab et al., 2024). Regarding the responsibility for the take-back campaigns, lay persons argued that this is a role of pharmacies (2), pharmacies and basic health unities (2), and specialized media (1). MMA representatives think that campaigns must be performed by the private agents. The representative of independent retail pharmacies did not answer but considered that costs are a significant hurdle to the campaigns. From the three retail pharmacies representatives of big networks, one argued that this is a matter of law, thus it is not an obligation; the second did not answer, and the third opened argued that campaigns result in increasing amounts of collections, therefore "we will not perform them". The specialized journalist think that LogMed is already carrying out campaigns in specific Youtube, Instagram and other social media channels, and the law representative of LogMed agreed with this perspective: "We have done diverse interviews, lives, and other awareness sessions in the social media, and we think the government must do their work as well". Going further, ChatGPT answered that medicines take-back campaigns are less impactful than public advertisements against suicide and breast and prostate cancers because "the general population may not fully understand the risks posed by expired or unused medicines" (...) "Public perception tends to focus on immediate health risks, while the long-term environmental and health impacts of improper medicine disposal might not seem as urgent to many people." Our counterargument was that medicines, not properly disposed, can cause cancer as well, and the AI answered that straight campaigns against cancer "receive more attention than medicine take-back initiatives due to: personal perception of risk, emotional resonance, and clarity of the call to action". We asked to AI to create a figure for the medicines take back campaign, which is shown as follows. Source: ChatGPT, <https://chatgpt.com/c/66eacd7c-9fa4-8012-bba6-0cb3347e288e> FINAL REMARKS While recent academic literature on medicines take-back campaigns highlight lack of awareness and knowledge even from pharmacists professionals, stakeholders from the medicines supply chain in Brazil do not fully agree about which is the responsibility for such campaigns, and AI highlight the need for personal and emotional appeal in the campaigns.

Palavras Chave

medicines reverse logistics, campaigns, take-back

Agradecimento a órgão de fomento

We acknowledge to CNPq, process 404.551/2021-1.