

GREEN PHARMACY



and Drug Take-Back Programs in the UAE: Community pharmacists' knowledge and perspectives.

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Background

The increased pharmaceutical contamination has become a great global concern, as masses of wastes are being deposited into the environment resulting in a detrimental impact on water supply, soil, atmosphere and consequently affecting the health of living organisms. There are many sources of pharmaceutical contamination, however, inappropriate medication disposal is one of the major contributors to the pharmaceutical pollution, all these growing concerns call for a solution that enables the safe removal of unused or unwanted medications. Pharmacists have a role in raising environmental awareness, providing valuable education on proper medication disposal and leading Drug disposal programs and Drug Take-Back programs.

Studies were conducted in the GCC about the knowledge, practice, awareness, and opinion of pharmacists toward the disposal of unwanted medicines but there is a scarcity of studies that cover the UAE.

Aims and Objectives

This study aimed to:

- Investigate community pharmacists' environmental awareness and knowledge on pharmaceutical pollution and drug disposal.
- Examine their perception of the feasibility of drug take-back programs in the UAE.

Methodology

Study design and setting

A cross-sectional questionnaire survey of 26 standardized questions was administered to pharmacists in Sharjah and Dubai, UAE.

Questionnaire development

The structured online electronic questionnaire, was designed by the researcher on SurveyMonkey and pre-tested in paper form on five pharmacists before use. It was pre-tested to ensure that the questions were uniformly understood and there were no ambiguities. Modifications were made to the questionnaire following the pre-test.

Sampling

Systematic random robust sampling of pharmacies was done. First, a list of all pharmacies in Sharjah and Dubai was obtained. Pharmacies were randomized in order then stratified according to the area.

An eligible respondent was someone holding at least a bachelor's degree of pharmacy and working in a community pharmacy.

Data collection

Pharmacies were visited according to the order where they appeared on the list. Permission was sought from the pharmacists before questionnaire administration. The language of communication was English or Arabic where this was preferred.

Data processing and analysis

Descriptive analysis was done using SurveyMonkey and Excel. And categorical variables were presented as proportions (percentages).

Points of strength:

- This is the first Drug Disposal/ Drug Take-back study in the UAE.
- The survey was electronic, convenient and environmentally friendly.
- The sampling was random, in a systematic robust fashion.

Limitations:

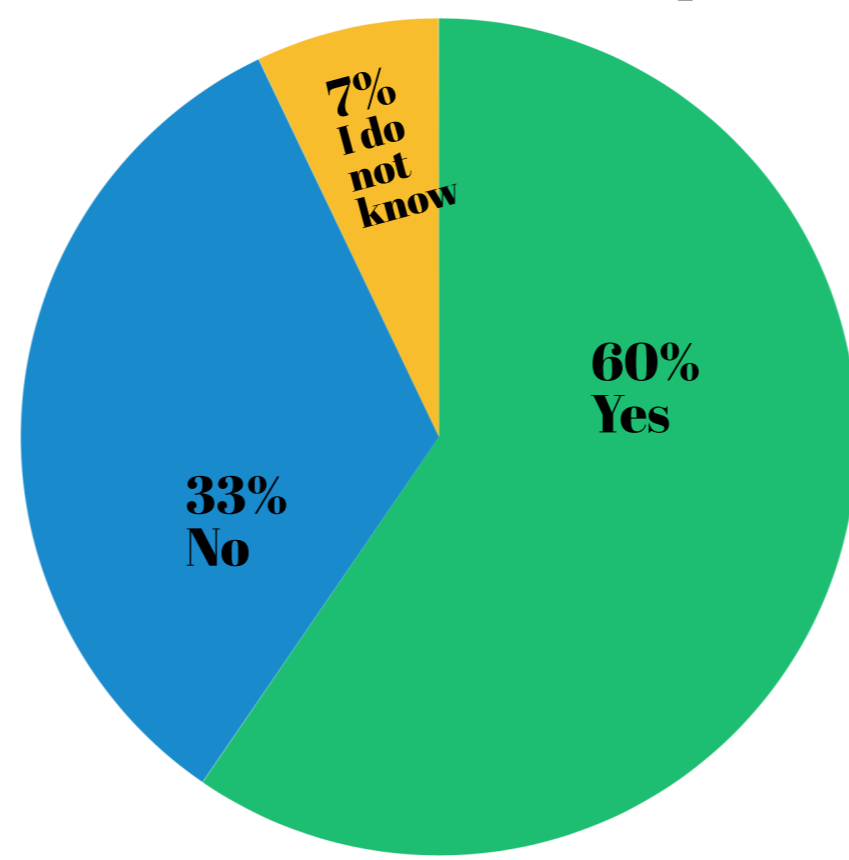
- Social desirability bias, as respondents may have not felt comfortable providing answers that present themselves in an unfavorable manner.
- The study sample might not be representative of the whole population in the UAE; due to the small sample size.

Results and Findings

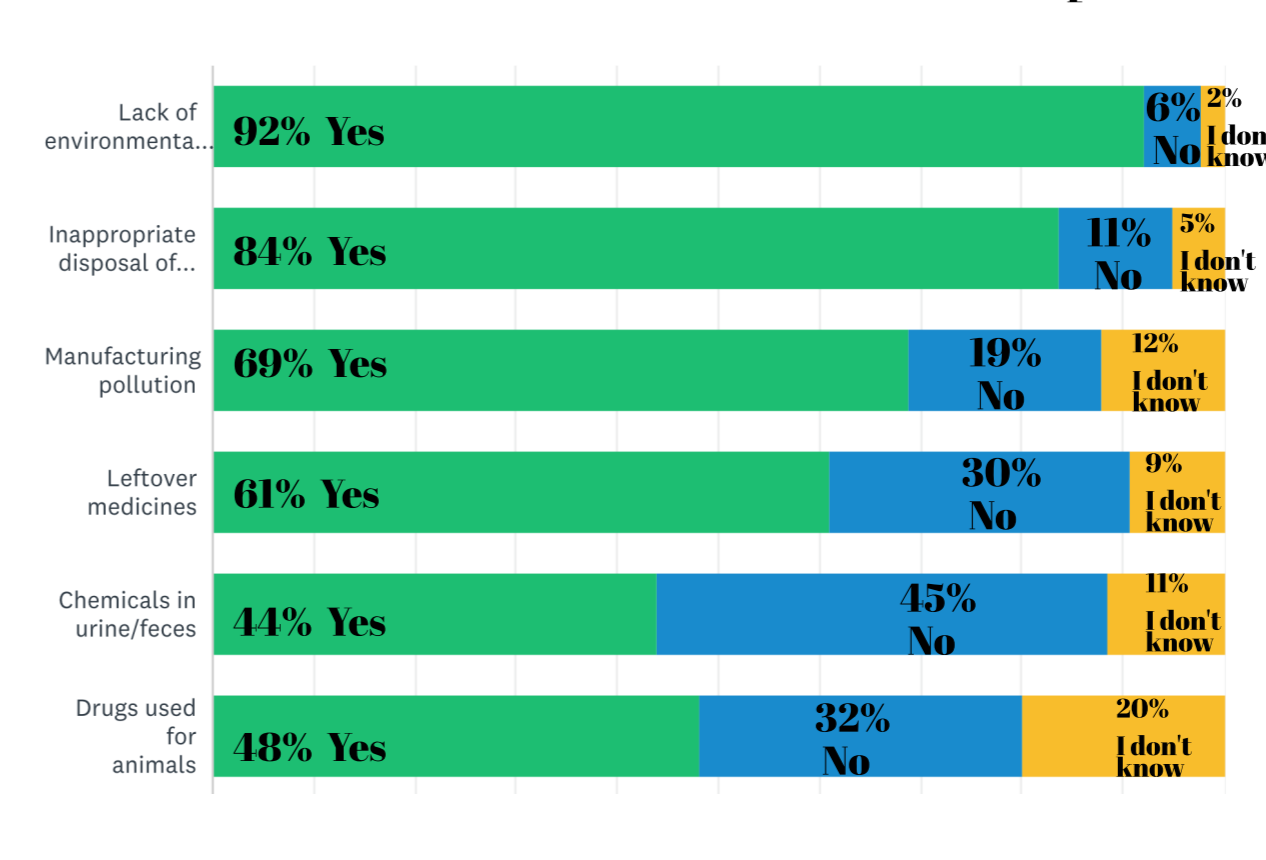
Demographic characteristics

A total of 141 pharmacists were included in the study, from February 01, 2020 to February 18, 2020, and the response rate was 78.33%. Pharmacists were predominantly males (59.57%), their age group was from 22-29 years (42.86%), holding Bachelor's of pharmacy (67.86%), most pharmacists have obtained their degrees from India (60.71%) with 6 or more years of experience (45.24%).

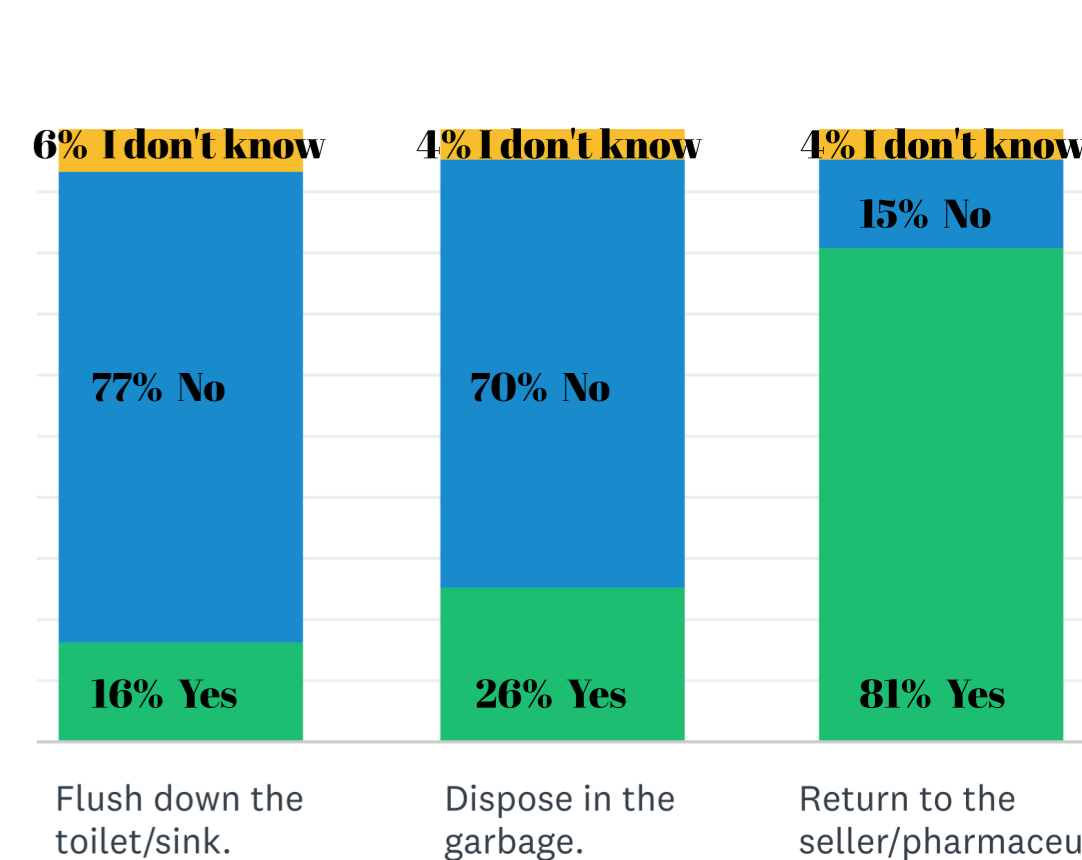
Are medications environmental pollutants?



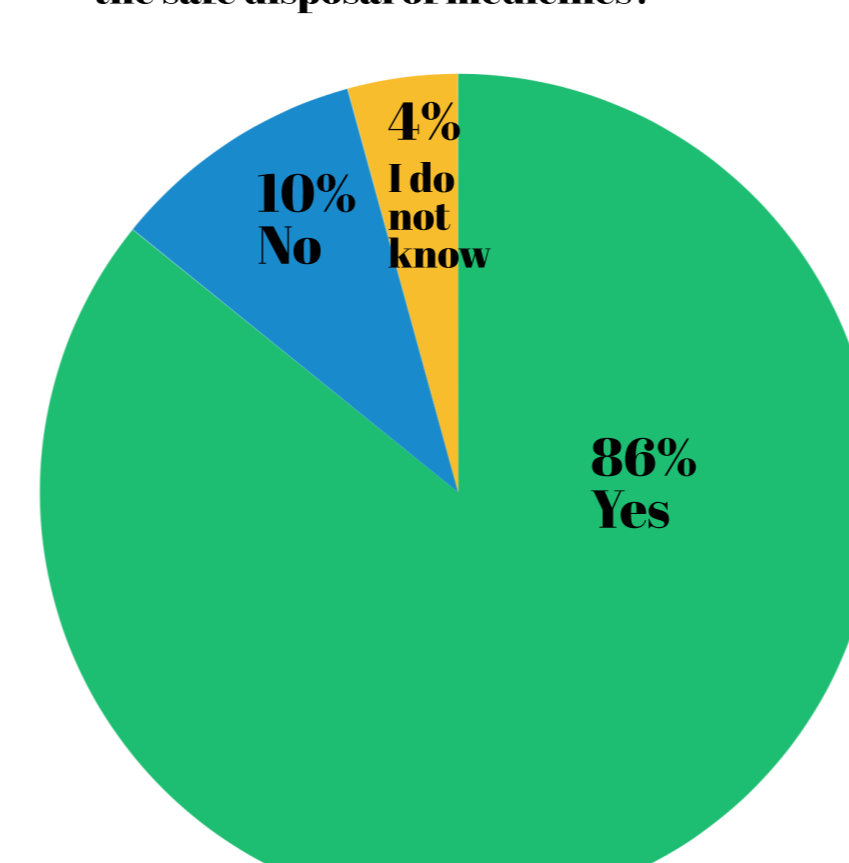
What are the reasons for increased environmental pollution?



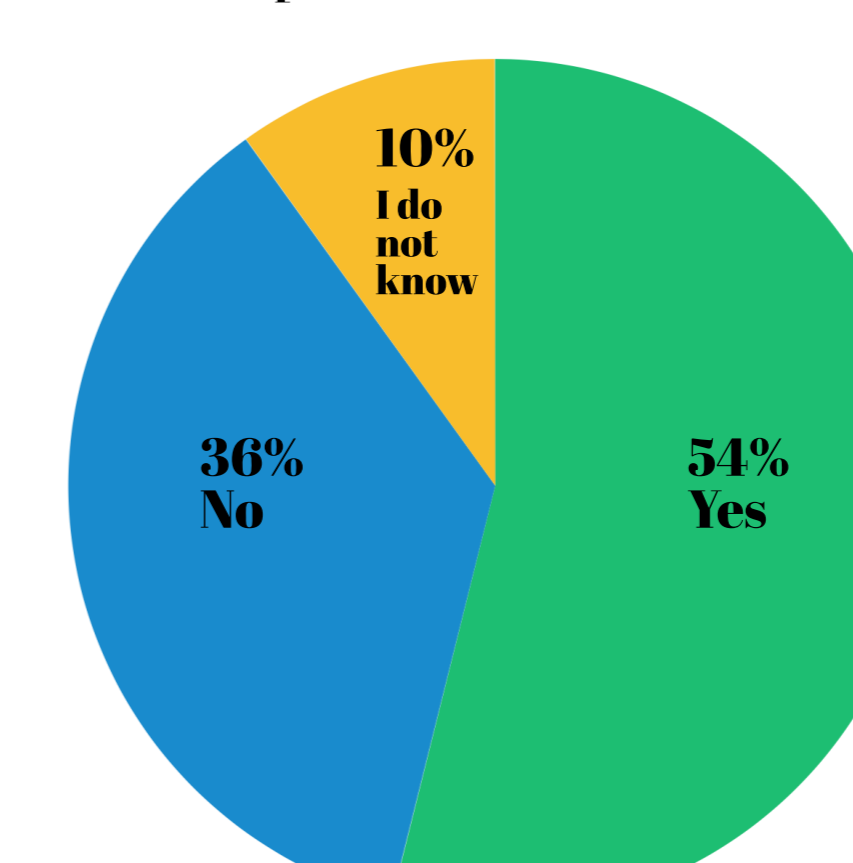
What is the appropriate way for disposal of medications.



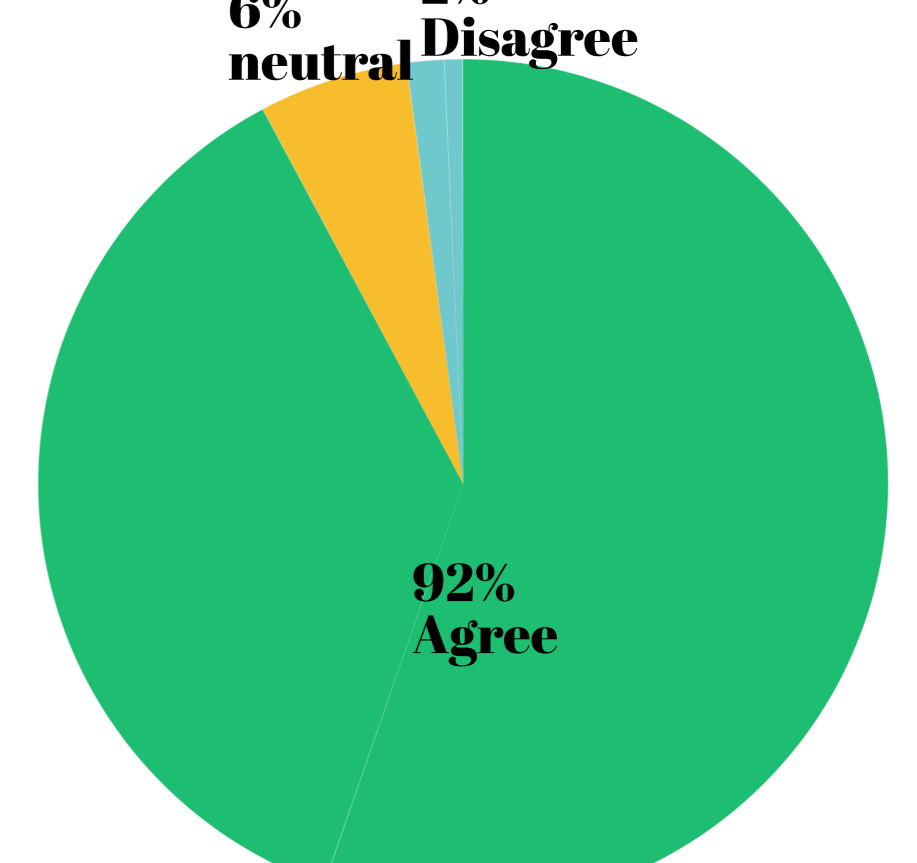
Do people in our society lack awareness about the safe disposal of medicines?



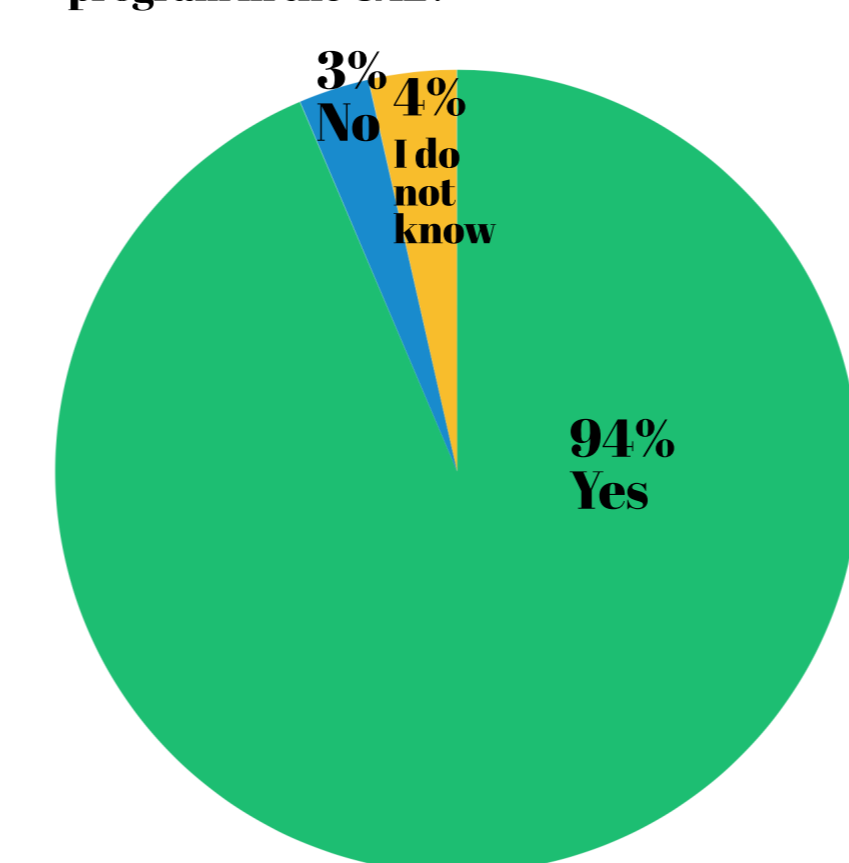
Do you think pharmacists lack knowledge about the safe disposal of medicines?



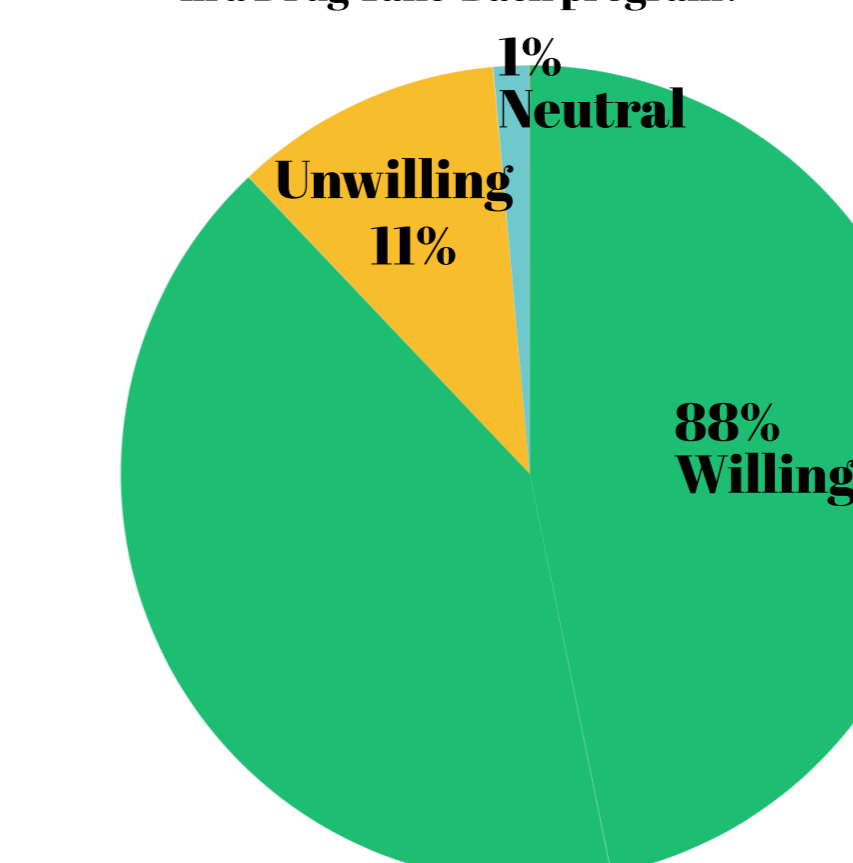
Pharmacists have a role in increasing environmental awareness.



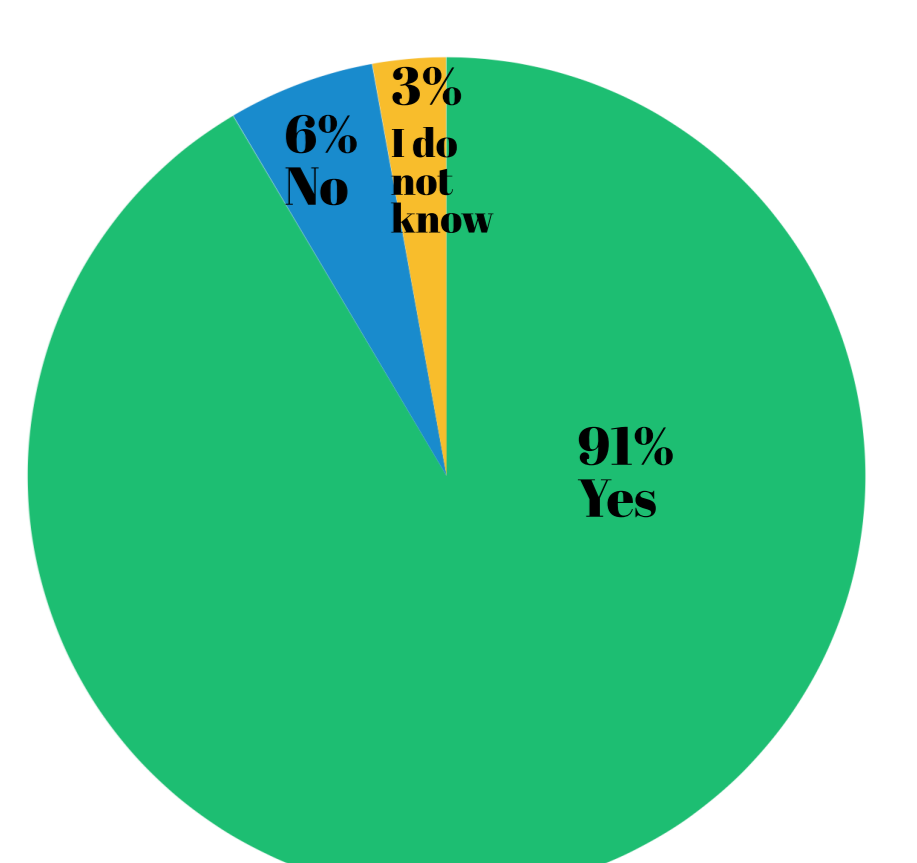
Do you think we need a Drug Take-Back program in the UAE?



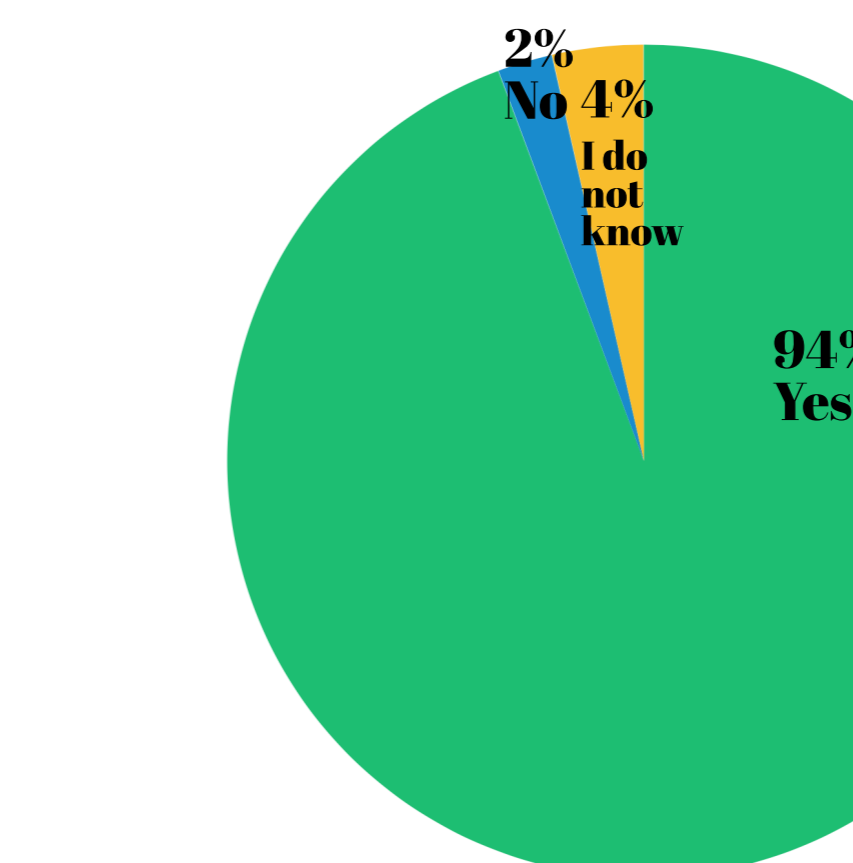
How willing would you be to participate in a Drug Take-Back program?



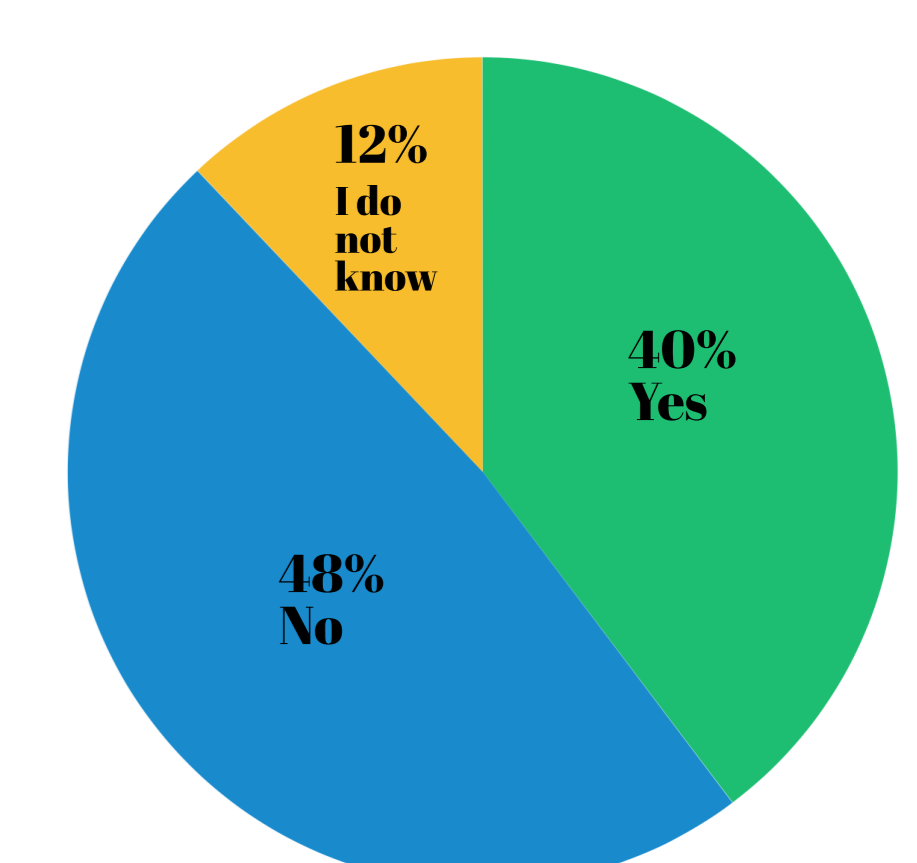
Do you think pharmacists need educational courses on Take-Back programs?



Do you think pharmacists should inform patients on proper disposal of medicines?



Do you think pharmacists need to be paid for providing this Drug Take-Back service?



Discussion

In this study we investigated the knowledge of community pharmacists about medications' impact on the environment, medication disposal related practices, attitude towards patients education about medication disposal, and perception on Drug Take-Back programs and their feasibility.

The assessment of the pharmacists' knowledge showed that most pharmacists are aware of the general environmental knowledge, but still a large portion of them lack important information concerning the extent to which drugs can impact the environment. Moreover, we noticed a weak sense of responsibility towards the environment from a considerable portion of pharmacists, they reported to us that they do not consider themselves as people who care about the environment, nor that they have time to attend seminars concerned with the environment.

Most pharmacists believed they have a role in educating patients and spreading environmental awareness, and they showed great enthusiasm towards participation in Drug Take-Back programs, and interestingly most of them wanted to do this as a social service without getting paid. Also, they reported that we do need Drug take-Back programs in the UAE, and they are willing to receive educational courses and training sessions on it.

Conclusion

The present study reveals poor knowledge and awareness among community pharmacists. Hence, there is an increasing need for Drug Take-Back Programs in the UAE, and for including safe drug disposal techniques among pharmacy curriculum as well as encouraging pharmacists to attend seminars and training sessions.

References

1. Al-Shareef, F., El-Asrar, S., Al-Bakr, L., Al-Amro, M., Alqahtani, F., Aleanizy, F. and Al-Rashood, S. (2016). Investigating the disposal of expired and unused medication in Riyadh, Saudi Arabia: a cross-sectional study. *International Journal of Clinical Pharmacy*, 38(4), pp.822-828.

2. Albaroodi, K.A.I. Pharmacists' Knowledge Regarding Drug Disposal in Karbala. *Pharmacy* 2019, 7, 57.