



Public Medication Behavior & Pharmacists' Perception for Declassification of Diclofenac Diethylamine 1.16% Gel: A Cross-Sectional Study

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INTRODUCTION

- Voltaren® Emulgel** containing diclofenac diethylamine 1.16% w/w gel (DDEA) is classified as an **over-the-counter medication (OTC)** in many countries.¹⁻³
- According to the Pharmacy and Poisons Ordinance, DDEA belongs to **Part 1 Poison** in Hong Kong (HK) which can only be sold at an Authorized Seller of Poison in the presence or under the supervision of a registered pharmacist.⁴
- Public should be able to **self-diagnose minor ailments** correctly and **self-administer medications** appropriately before declassifying a drug to minimize the risk of adverse drug reactions (ADRs) related to drug misuse.⁵
- Understanding healthcare professionals (HCPs) **opinions and concerns** towards declassification is crucial in lobbying their support for drug reclassification.⁶
- Currently, studies evaluating HK citizens' medication behavior and knowledge on the use of DDEA and OTC are limited. No local studies have been done to investigate the perception of pharmacists towards the use and declassification of DDEA.

Figure 1. Voltaren® Emulgel



OBJECTIVES

- To assess HK people's **knowledge and perception towards DDEA** and their **medical behavior**
- To investigate **pharmacists' perception** towards the declassification of DDEA
- To identify **potential challenges** for successful declassification of DDEA in HK

MATERIALS AND METHODS

A **cross-sectional study** on (1) HK public drug knowledge and medical behavior, and (2) pharmacists' perception of DDEA declassification was conducted via online questionnaires.

Figure 2. Study Procedure

Study and Questionnaire Design



Study Approval by Institutional Review Board (IRB)



Recruitment of Participants & Collection of Informed Consent Form



Completion of Questionnaire



Collection and Analysis of Data

Study population – Questionnaire for the Public

HK residents aged 18 or above

Study population – Questionnaire for Pharmacists

Pharmacists registered in Hong Kong

Data Collection

Surveys were disseminated via social media platforms and communication applications over 3 months from Sep to Dec 2021.

Statistical Analysis

- Collected responses were analyzed using SPSS Statistics Version 27.
- Categorical data were reported using descriptive statistics.
- Spearman correlation was used to evaluate relationships associated with ordinal variables.

RESULTS AND DISCUSSION

1 Hong Kong Citizens' Medication Behavior and Knowledge

Figure 3. Respondent has purchased or used Voltaren® Emulgel before (n = 402)

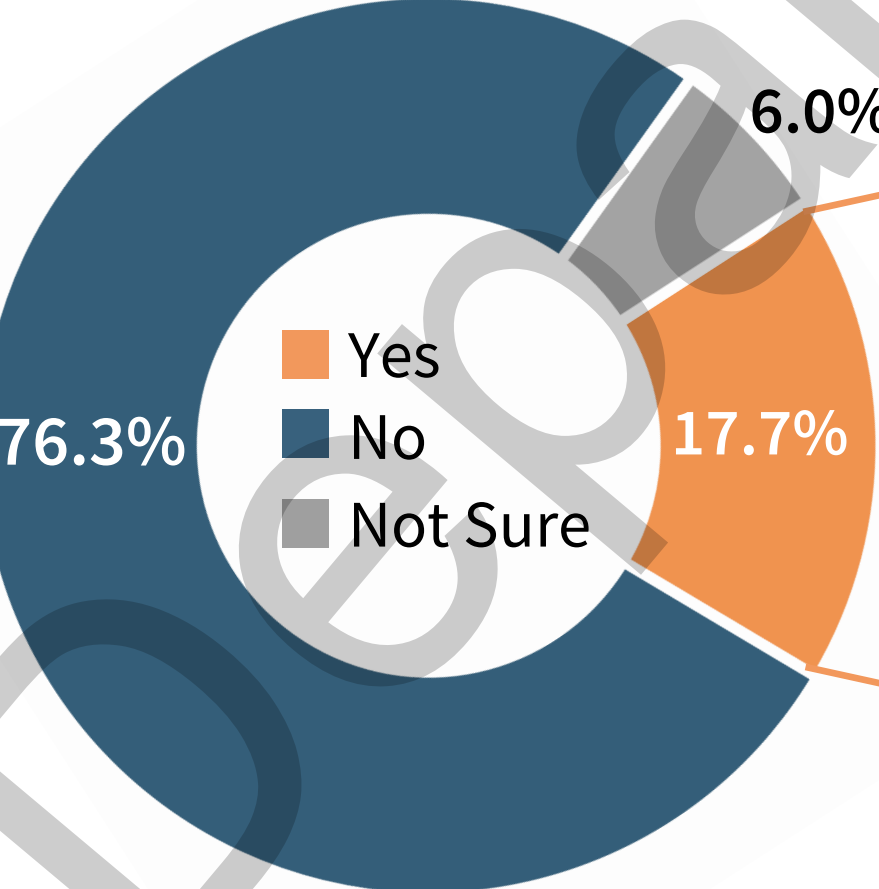


Figure 4. Voltaren® Emulgel uses who could accurately identify all 3 common side effects (n = 71)

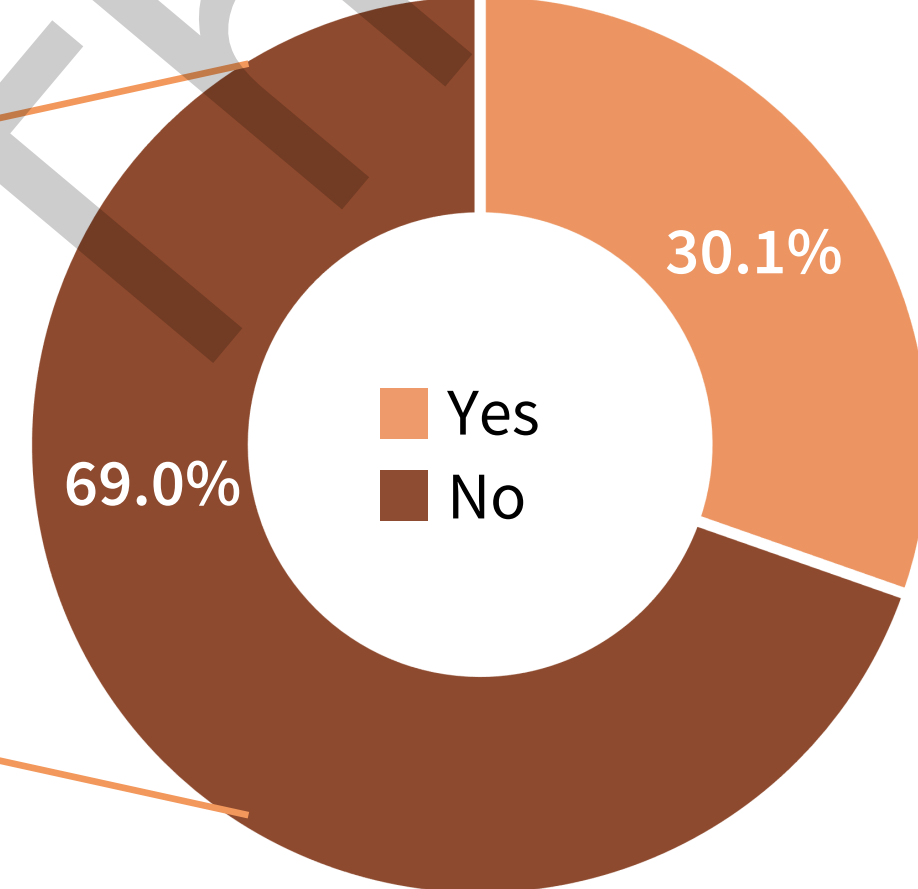


Table 1. Response to missing dose of Voltaren® Emulgel (n = 71)

Responses	n (%)
1 Apply two doses of drug of the skin at the same time when you remember	2 (2.8)
2 Apply one usual dose of drug when you remember and then apply the next dose after 5 minutes	6 (8.5)
3 Apply one usual dose of drug when you remember and then apply the next dose at the usual time	52 (73.2)
4 Not sure	11 (15.5)

Table 2. Response to drug ineffectiveness

Responses	Voltaren® Emulgel (n = 71)	OTC (n = 402)
1 Apply two doses of drug on the skin	6 (8.5%)	10 (2.5%)
2 Apply the stated amount of drug for a few more days	30 (42.3%)	147 (36.3%)
3 Stop applying the drug and switch to other products / visit the doctor	34 (47.9%)	230 (57.2%)
4 Not sure	1 (1.4%)	15 (3.7%)

Figure 5. Off-label use of Voltaren® Emulgel (n = 71)

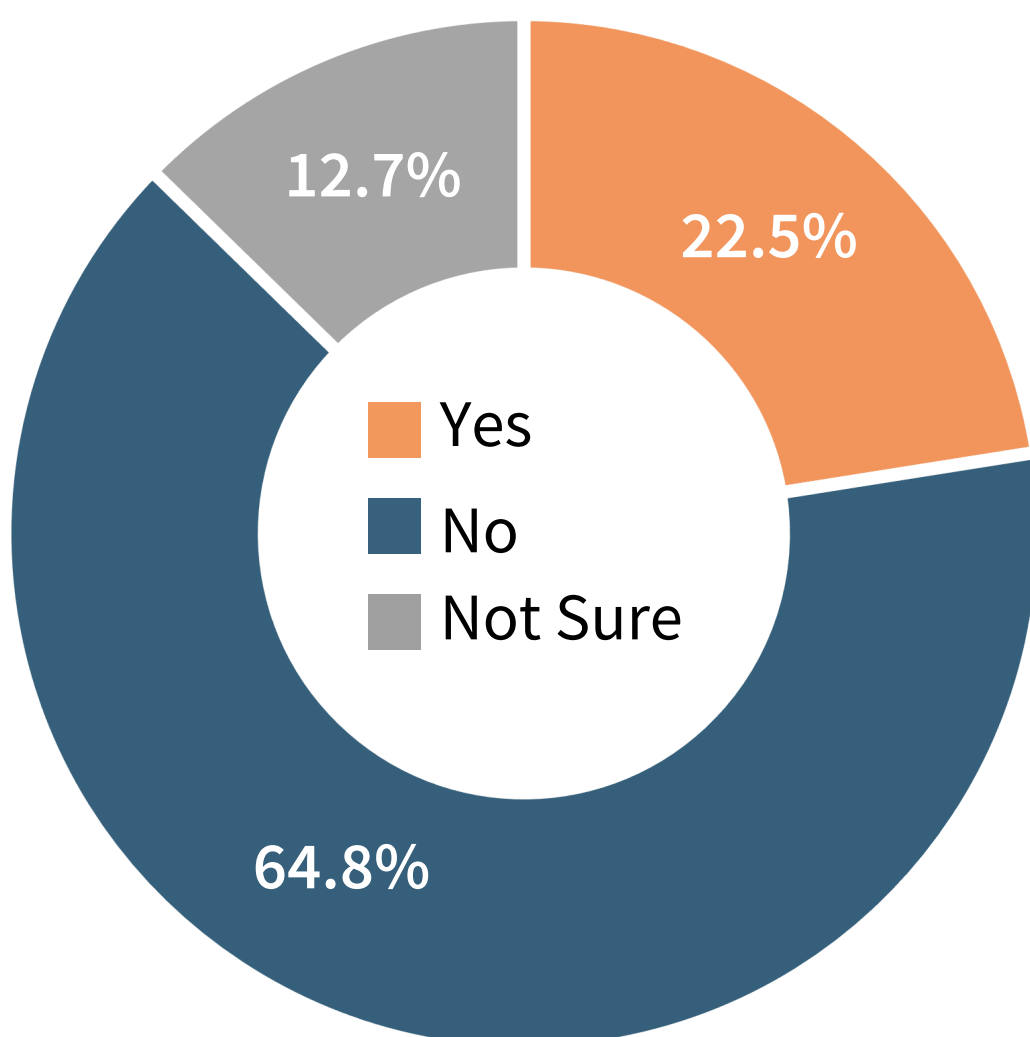


Figure 6. Statement: OTC is ___ risky than Part 1 poisons (n = 402)

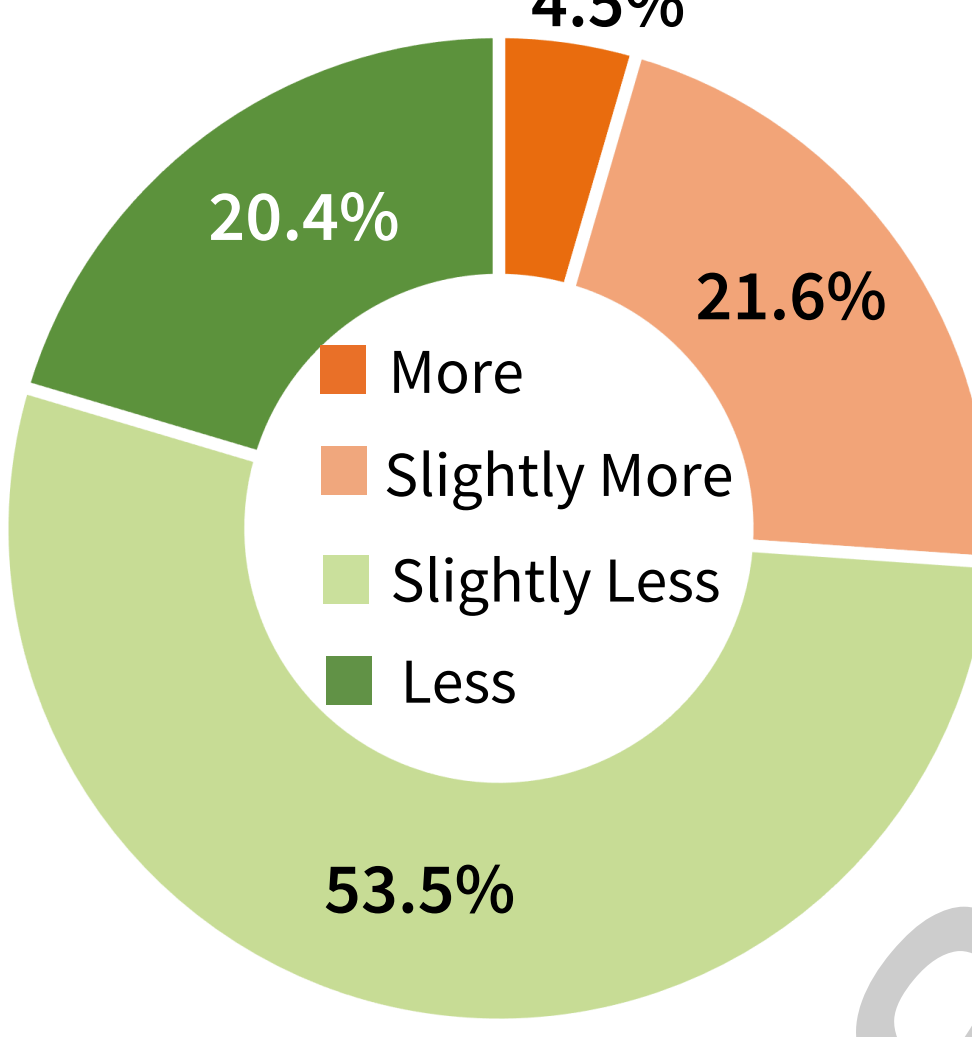
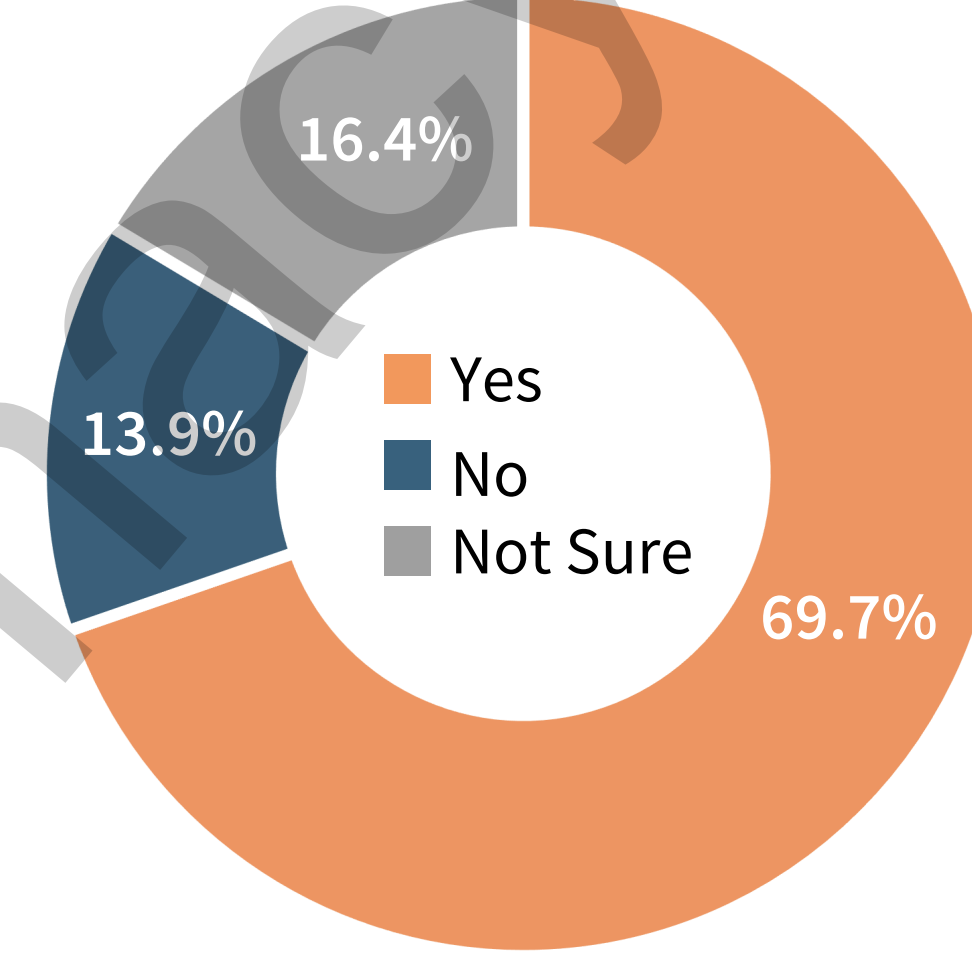


Figure 7. Respondent believed that topical drugs have less risk of developing ADRs than oral drugs (n = 402)



2 Pharmacists Attitude Towards Declassification

Figure 8. Pharmacists attitude towards DDEA declassification (n = 38)

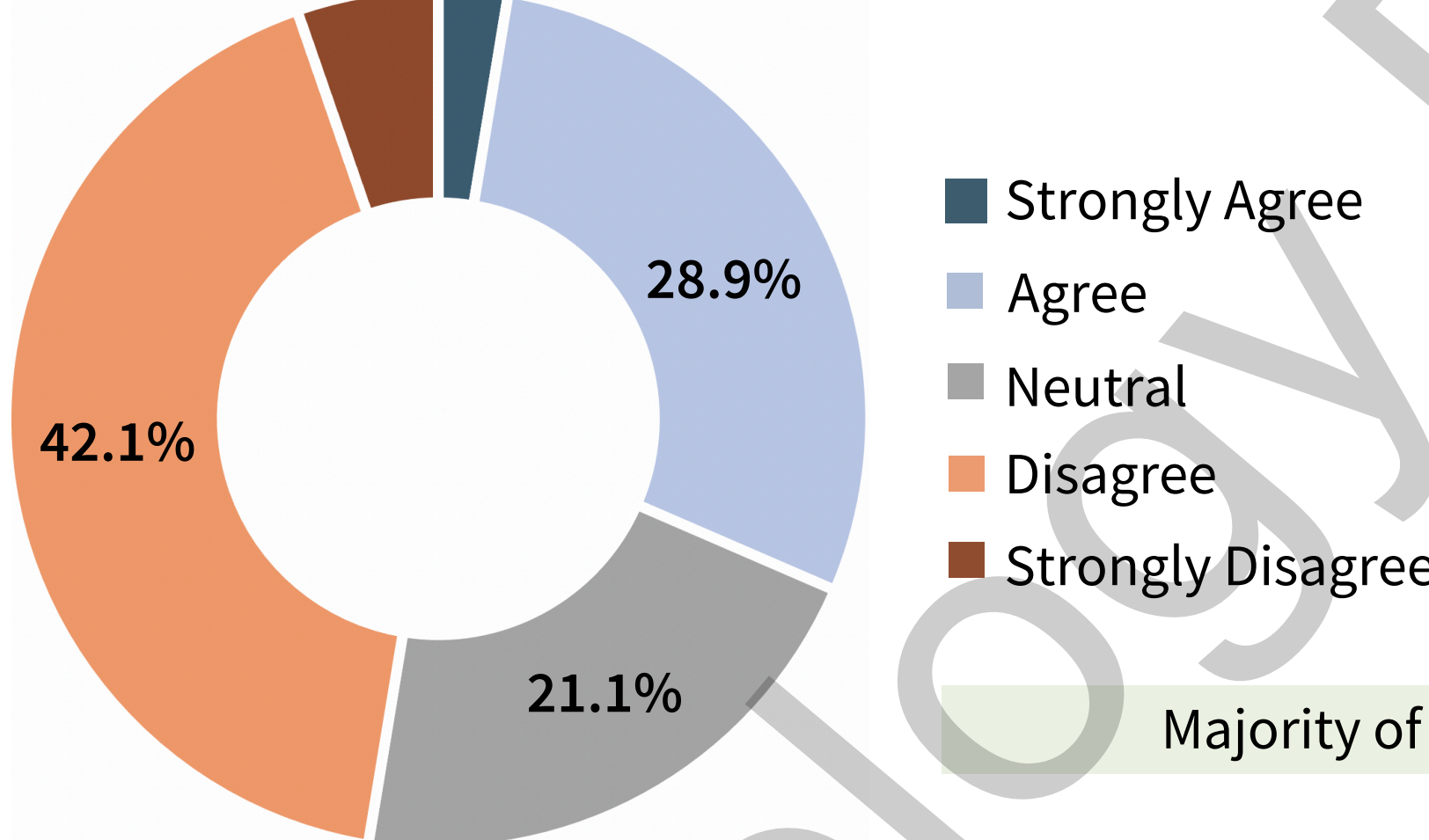


Table 3. Correlation of pharmacists' supportive attitude towards DDEA declassification and determinants of declassification

Variables	Supportive Attitude	
	Correlation coefficient	P-value
Pharmacist thinks patients are capable of using DDEA safely without HCP's advice	0.520	0.001
Pharmacist thinks there is no concern of potential drug abuse / misuse / overdose of DDEA	-0.218	0.016

Majority of pharmacists held opposing stance towards declassification

Figure 9. Reason(s) supporting DDEA declassification – Pharmacists (n = 20)

Reason(s) supporting declassification	Responses
Patients are capable of using DDEA safely without HCPs' advice	n = 16
Patients do not need to be referred to pharmacists if they want to purchase DDEA	n = 8
There is no concern for potential drug abuse/misuse/overdose of DDEA	n = 4
Declassification will not delay medical consultation	n = 6
Declassification will not mask underlying progressive pathology	n = 3
Patients are capable of self-diagnosing their conditions	n = 2

Figure 10. Reason(s) opposing DDEA declassification – Pharmacists (n = 26)

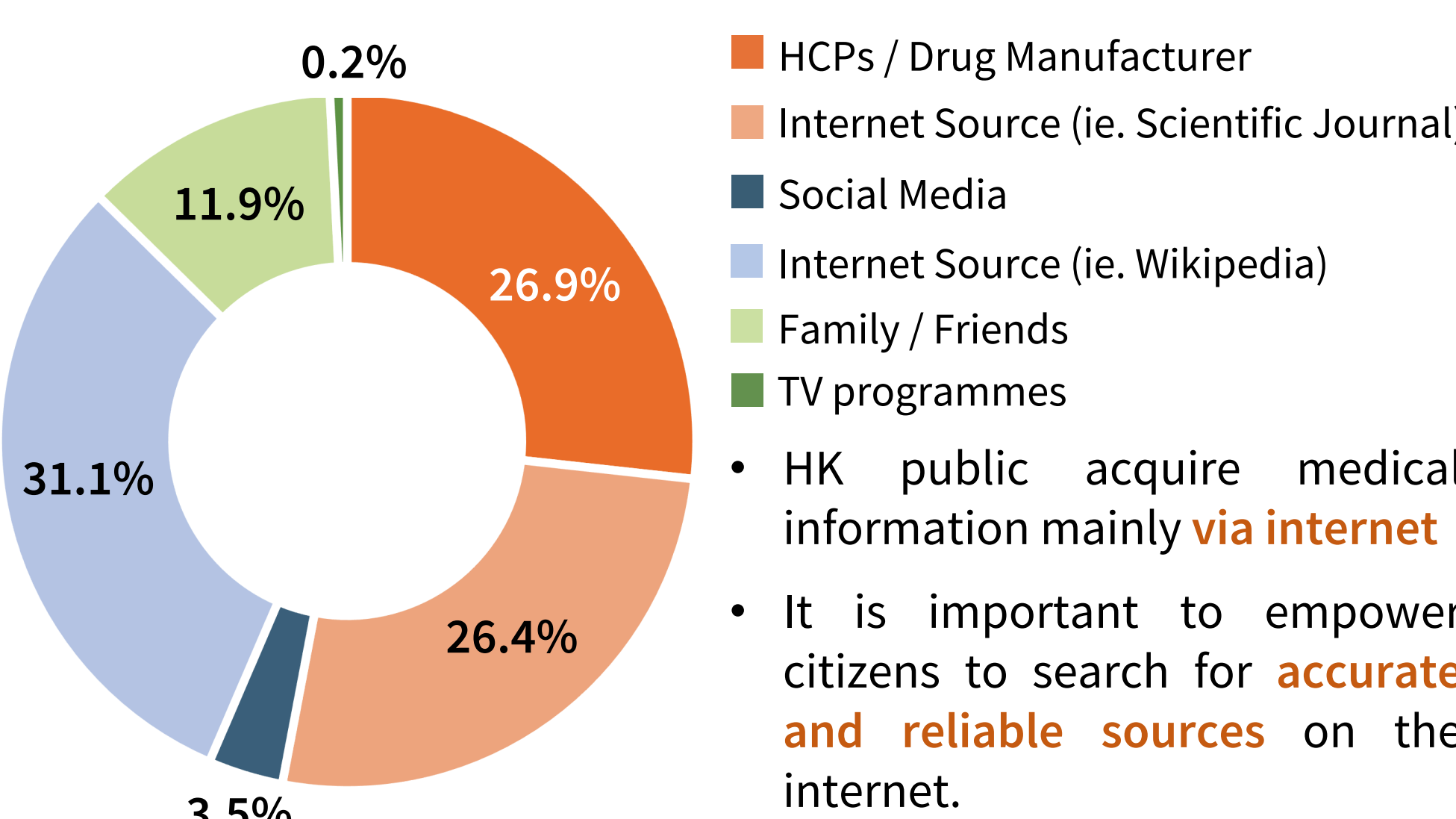
Reason(s) opposing declassification	Responses
Patients are not capable of using DDEA safely without HCPs' advice	n = 10
Patients should be referred to pharmacists if they want to purchase DDEA	n = 11
There is concern for potential drug abuse/misuse/overdose of DDEA	n = 17
Declassification will cause delay medical consultation	n = 7
Declassification will mask underlying progressive pathology	n = 9
Patients are not capable of self-diagnosing their conditions	n = 9
There are many OTC available for the treatment of muscle pain and inflammation	n = 8

3 Recommendations

Table 4. Correlation of education level and medication habits

Variables	Education Level	
	Correlation coefficient	P-value
Respondent could accurately identify all common side effects of the drug	0.392	0.005
Respondent would apply one usual dose when he remembers and apply the next dose at the usual time	0.321	0.012
Respondent would apply the drug for conditions other than its stated indication	-0.286	0.024
Respondents think taking OTC is riskier than Part 1 poisons	-0.131	0.009

Figure 11. Health advice-seeking behavior (n = 402)



- HCPs / Drug Manufacturer
- Internet Source (ie. Scientific Journal)
- Social Media
- Internet Source (ie. Wikipedia)
- Family / Friends
- TV programmes

- HK public acquire medical information mainly **via internet**
- It is important to empower citizens to search for **accurate and reliable sources** on the internet.

Table 5. Utilization of medication instructions

Utilization of medication instructions	Voltaren® Emulgel (n = 71)	OTC (n = 402)
1 Respondents would read the product insert	48 (67.6%)	316 (78.6%)
2 Respondents would read and follow the directions printed on the product package	58 (81.7%)	370 (92.0%)

Table 6. Top 3 methods of improving drug safety(n = 440)

Methods of improving drug safety	n (%)
1 Highlighting important information on product insert	391 (88.9)
2 Having advertisement on TV / social media	352 (80.2)
3 Organising interviews on TV programmes	348 (79.1)

Table 7. Top 3 methods of enhancing product insert readability (n = 440)

Methods of enhancing product insert readability	n (%)
1 Inclusion of photos with captions illustrating common side effects and method of administration	317 (72.0)
2 Enlarging the words	271 (61.6)
3 Inclusion of diagrams to illustrate side effects of drugs	240 (54.5)

CONCLUSION

- HK public demonstrated **inadequate product knowledge and some erroneous medical perception** which may lead to potential ADRs. Medication safety during self-administration of drugs could not be ensured.
- Majority of HK registered pharmacists possessed **a cautious attitude towards declassification** of DDEA into OTC. **Potential for drug misuse** and **patients' ability to self-administer DDEA safely** were two major determinants when considering declassification.
- Enhancing HK citizens' medical literacy by **modifying and increasing readability of product insert** could eliminate public's misconception towards DDEA and OTC use.

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