



## BRIEF REPORTS

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# Pharmacist's age affect information provided for pharmacy clients about generic substitution

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### ABSTRACT

**Introduction.** According to WHO, increase in usage of generic drugs may be one of the ways to reduce costs of healthcare systems around the world. However, according to scientific data, physicians and pharmacists doubt in their effectiveness – the reason for that is not well known. Due to this fact an evidence of factors affecting their opinion is being searched for.

**Aim.** The aim of this study was to assess whether correlation exist between the age of pharmacist and the way information about generic drugs is provided.

**Material and Methods.** This was a questionnaire-based study. Especially prepared questionnaire was made available to pharmacists of Lodzkie province. Survey was conducted in Lodz (81.8%) and other towns of lodzkie province.

**Results.** One hundred and forty eight pharmacists working in Lodzkie province have answered the questionnaire (84.5% women and 13.5% men, aged 23–59, working mainly in private pharmacies – 89.1%). Most of pharmacists (47; 31.8%) younger than 35 years provided information about generic drugs, after being asked about it. Most of pharmacists older than 35 years had given information before patients asked them about it. Correlation analysis revealed that strong statistically significant correlation between pharmacist's age and the moment when he provides an information about generic drugs exist ( $P < 0.05$ ).

**Conclusions.** Age of pharmacists affect their commitment to provide information about generic drugs for pharmacy clients.

**Keywords:** generic drugs, generics, questionnaire study, pharmacists' opinions.

## Introduction

Generic medicines are cheaper equivalents of brand name drugs. Instead of long lasting clinical trials, their introduction to the market is preceded by bioequivalent studies. Although there is no convincing evidence supporting the fact that generic drugs are inferior to brand name drugs [1], a number of healthcare professionals including pharmacists question equality between them [2]. In literature some problems were highlighted regarding medications of narrow therapeutic index [3, 4]: antiepileptics [5], levothyroxine [6] and warfarin [7]. In contrast other study confirmed that there was no difference between generic and brand-name

medications used in cardiology [8]. The study analyzed 9 main groups of drugs: beta-blockers, diuretics, calcium channel blockers, antiplatelet agents, statins, angiotensin-converting enzyme inhibitors and alpha-blockers [8]. Because of contradicting views on generic drugs, an urgent necessity arises to determine the reasons of doubt in cheaper equivalents. If we look at the decision process and who is deciding about the finally bought medication, we may indicate three persons. Pharmacist, together with physician and patient, are the ones who decide which drug – brand name or generic – will be used by patient. When dispensing a medication pharmacists decide which drug to sell to

the client, thus their opinion on generics and decision which they make highly matters. Knowing the drivers of this decision would enable promotion of generic drugs and more cost-effective therapy to the patient. Moreover it would help in building decision models for these professionals. In order to do that factors affecting pharmacists decisions should be identified. One of them may be pharmacist's age.

## Aim

The aim of this study was to answer the question whether pharmacist age (and indirectly pharmacist experience) affect the moment in which he informs patient about generic drug and thus does it affect indirectly the choice of generic or brand name drug.

## Material and methods

Especially prepared questionnaire was distributed in a paper copies among pharmacists working in lodzkie province pharmacies. Surveys were personally given to pharmacists from randomly chosen pharmacies in Lodz (81,8%) and other lodzkie province cities (18,2%). The questions presented in the pharmacy were: "If patient wants to buy brand name drug, do you inform him/her about the choice of buying cheaper equivalents of these drugs?" with possible answers: 'yes, I inform before patients ask about them', 'yes, I inform when patient asks', 'I do not inform'. These questions were a part of bigger survey including a total number of 38 enquiries. Additionally demographic data was collected: age, gender and other. Questionnaire filling was voluntary and anonymous. The results underwent statistical analysis.

## Results

One hundred and forty eight pharmacists answered the questions including 125 females (84,5%) and 20 males (13,5%), 3 persons did not determine their gender. Partic-

ipants' age was 23–59 years (average 35,8; median 35), most of them worked in private pharmacies (132; 89,1%), the rest – in public pharmacies (12 people; 10,9%). Pharmacists worked in their occupation for 1 to 35 years, average 11 years. Results are presented in **Table 1**.

In the group of participants aged more than 35 years most of pharmacists (44 persons; 64%) inform about the choice of drug exchange before patient asks about it. In contrary most of pharmacists younger than or equal 35 years inform patients after they ask about this possibility (47 participants; 60%).

Correlation analysis confirmed statistical relevance between information given by pharmacists about the choice of exchange of brand name drug to generic drug and pharmacist age ( $p < 0.005$ ). Pharmacists older than 35 years are more eager to inform patients about the possible exchange of brand name drug to generic drug, before patients ask about it themselves.

## Discussion

According to World Health Organisation increase of generic drugs usage may be one of the ways to reduce healthcare costs around the world [2]. Although Polish generic drugs market is one of the biggest in European Union, there is still place for their promotion [9]. It is so, because many physicians and pharmacists present negative opinions about generic drugs [10], although the evidence for it is missing [11]. Questions asked in our study were a part of larger questionnaire designed to check the opinions of pharmacists on generic medications. The aim of described in this paper part of our study was to indirectly find out whether the older is the pharmacist, the more his opinion changes towards generic drugs utilization. Opinions of pharmacists regarding generic drugs were presented in previously published papers [12,13]. It was presented that most of pharmacists knew their duty to inform patients about possible exchange of prescribed drugs – this process of change is called 'generic substitution' [14]. Thus, according to this study the older pharmacist is, the

**Table 1.** Influence of pharmacist age on the moment of giving information to patient about the choice of changing the drug from brand name to generic

The information given by pharmacist about the choice of changing the drug	Age				Total	
	Less or equal 35		More than 35		Number of participants	Fraction
	Number of participants	Fraction	Number of participants	Fraction		
Informs before patient asks	32	0,40	44	0,64	76	0,51
Informs after patient asked	47	0,60	25	0,36	72	0,49
Total	79	1,00	69	1,00	148	1,00
Statistical analysis	Test Chi <sup>2</sup> <sub>Person</sub> = 8,00 <b>p &lt; 0.005</b> ; Test Chi <sup>2</sup> <sub>NW</sub> = 8,06 <b>p &lt; 0.005</b>					

more eager to use this process in his daily routine. Polish pharmacist is obliged to propose drug exchange to cheaper (generic) drug to every patient according to Polish regulations [15]. However this refers only to reimbursed medications [15].

Results of our study are consistent with recent study by Drozdowska A. and Hermanowski T [16]. In that study on representative sample of Polish pharmacies authors found that less experienced pharmacists were less likely to inform consumers about the availability of cheaper generic substitutes. Our study also confirms that pharmacist experience plays a role in the way patients are informed by pharmacists. However our study was focused on situation when pharmacist gives the information to the patient (before or after patient asks about it) and not on general frequency of asking the patient. Our results show that the interaction with patient also matters in conveying the information about generic drugs and confirms that less experienced pharmacists may present less information about generics to the patient.

There are many survey-based studies in literature devoted to generic drugs and their perception by pharmacists. Quintal et al. [17] were studying opinions of patients and pharmacists. Four hundred patients and 95 pharmacists took part in survey conducted in Coimbra in Portugal. Portuguese pharmacists very often (91.6%) advised their patients generic medicines. Most of them (83.2%) claimed that knowledge of patients about generic medications is not sufficient. In recent US study of 553 licensed pharmacists authors found that pharmacists for their self-treatment prefer generic OTC medications to brand OTC medications (62 to 5% respectively) and they do it regardless of health symptoms [18]. In an Iranian study of 1205 pharmacists, 73.6% of them claimed that they substitute generic medicine once it is available [19], thus the preference of generic medications was also confirmed. Majority (92.9%) of eighty four Nigerian pharmacists were supporting generic substitution and most of them (68.2%) preferred generic medicines to brand ones [20]. Chong et al. presented perceptions of future generic substitution policy of Malaysian pharmacists [21]. Majority of respondents (93.6%) agreed that this should be a right of pharmacists. Nonetheless these studies did not find a correlation similar to our study to support the thesis that pharmacists age affect the information given to the patient about generic drugs, as they were not aimed at such association.

Our study presents that correlation between pharmacists' age and the moment when they inform

patients about possibility of changing the drug are probable. The older pharmacist is, the more likely that he will inform his client before being asked for such information. The reason for that remains unknown. It is possible that the older is pharmacist, the more knowledge has about regulations including obligation to inform patients about drug change [15]. Perhaps the will to inform patients by more experienced pharmacists is driven by their own knowledge about possibility of such exchange or perhaps they want patients to be more satisfied with their visit in pharmacy. These are hypotheses which need further research. As far as we are concerned the correlation described in this study was found for the first time, and at the moment there is no similar data in available literature. This is than a start for extended studies on influence of age and pharmacist experience on their decisions made in pharmacy.

A limitation of this study is not representative study population. Although only 148 pharmacists from lodzkie province filled in the questionnaire, statistical correlation was strong. The probability value (p-value) below 0.005 suggests that association between pharmacists age and information given to the patient is very strong and should be confirmed also in bigger representative populations.

Our findings suggest that there is a strong correlation between the age of pharmacist (and due to that his experience) and the way to provide information for the patient about generic medications. There are two conclusions that can be drawn from these results. First one: the information given by young pharmacists about generic medications may be less effective than older ones. Second: in order to improve information given to patients in pharmacies about generic medicines, pharmacists 35 years old or younger should be reminded about this possibility in the first place. Although they probably now about generic substitution for some reason do not inform patients. By improving this procedure, an increase in generic medications utilization may be expected.

## Perspectives

Results of this study suggest that the younger is the pharmacist, the lower probability that patients will be informed about their choice of switching to cheaper equivalent of brand name drug before patient asks about it. Because generic drugs are cheaper equivalents of brand-name drugs patients should have the option to exchange prescribed brand name drugs. It

will not be possible if they are not informed about such possibility, thus a campaign to inform younger pharmacists about their obligation to advise patients should be implemented. Prospective studies on younger pharmacists should be conducted in order to find what action improves message conveyed by pharmacists..

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### Conflict of interest statement

The authors declare no conflict of interest.

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