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ORIGINAL ARTICLE

Perceptions of Egyptian physicians about drug shortage during political disturbances: Survey in Greater Cairo

Ammar A. Abdelrahman [a,*], **Amr A. Saad** [b], **Nirmeen A. Sabry** [a], **Samar F. Farid** [a]

[a] *Department of Clinical Pharmacy, Faculty of Pharmacy, Cairo University, Kasr El-Aini Street, Cairo 11562, Egypt*
[b] *Egyptian Pharmaceutical Vigilance Center, Egyptian Drug Authority, 21 Abd El-Aziz Al-Soud Street, Manial El Roda, 1451 Cairo, Egypt*

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KEYWORDS

Healthcare services research;
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Abstract *Background:* Drug shortage is a problem that entangles health systems. In Egypt, many complaints arose due to drug shortage in the period following the 25th January revolution. Physicians play a vital role in dealing with this crisis.
Objectives: Our aim was to investigate physicians' perspective of the drug shortage problem and its impact on the healthcare system.
Methods: A questionnaire was adopted and distributed by hand to physicians in customers' waiting areas in Medical Syndicates Union. The questionnaire covered general participant information, drug shortage effects, physicians' responses to the problem, the magnitude of the problem and its development three years around the revolution.
Results: Of the 319 distributed questionnaires, 192 responses were valid with a response rate of 60%. Most of participants expressed the dire impact of drug shortage on patients' health. Death as a result of drug shortage was reported by 67 physicians −35% of participants. A significant difference between internal medicine specialists and surgical medicine specialists in perception of drug related deaths was found (p-value = 0.004). A significant negative correlation between number of years of experience and agreement to analogues therapeutic equivalency was found (Spearman's correlation coefficient = −0.207, P-value = 0.006). About two thirds of participants viewed drug shortages as a cause of inter-professional conflicts. Generally, participants denoted that drug shortage problem is worsening with time since the revolution.
Conclusion: Prospective studies are required to quantitatively estimate drug shortage related mortality. Enhanced drug shortage communication by drug authorities and targeted education may relieve inter-professional conflicts resulting from drug shortages.

* Corresponding author at: Faculty of Pharmacy, Cairo University, Elkasr Eleiny st, Cairo 11562, Egypt. Tel.: +20 235686504, mobile: +20 1118004904.
E-mail address: ammar.mohamed@pharma.cu.edu.eg (A.A. Abdelrahman).
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1. Introduction

Drug shortage is defined as "a change in the drug supply that has the potential to compromise patient care" [1]. Drug shortage is a problem that entangles health systems preventing them from achieving their goals [2]. Not only is the patient care compromised, but healthcare team is also perplexed under the stress of insufficient supplies [2,3]. Drug shortage is a worldwide problem that many governments face [4].

In Egypt, drug shortage problem received much of the media attention when Egypt faced political instabilities since 25th January 2011. In more than one instance, this was referred to as the drug shortage crisis [5–7]. The Egyptian Drug Authority (EDA), the official pharmaceutical body in the Egyptian Ministry of Health and Population, created Drug Shortage Department (DSD) to cope with the problem [8]. Currently, the DSD publishes a monthly bulletin with drugs in shortage with suggested analogues and alternatives [9].

Physicians -as health care team leaders- play a vital role in dealing with drug shortage. With the assistance of pharmacists, physicians decide on alternatives, prioritize drug use in times of low stocks, and apply frugal drug use manoeuvers [10,11]. Cooperation between physicians and pharmacists is important for mitigating drug shortage impact on the healthcare system. Yet, drug shortages are reported to induce inter-professional conflicts [12]. In Egypt, a wide scope conflict between pharmacists and physicians manifested by Egyptian Pharmacists' Syndicate appeal to adopt International Non-proprietary Name prescribing policies. Pharmacists demanded more freedom in dispensing analogous products especially when the prescribed drug is in shortage to ease the pressure on the health system [13].

Improved collaboration between pharmacists and physicians would improve drug shortage management and mitigate impact on health system. Understanding physicians' perceptions about drug shortage and using alternatives can help in convergence of views. The current study aimed to explore physicians' perceptions about drug shortage impact and physicians' acceptability of substitution.

2. Methods

2.1. Survey tool development

This is a descriptive study where a structured self-administered questionnaire was developed based on previously published ones [12,14–16]. The various questionnaires were reviewed in focused group meetings to select proper questions that fit the purpose of the study and the Egyptian case. The used questionnaire was in English and consisted of 37 points of entry in three pages.

The first page collects general information as participants' demographic data, academic education, and current practice setting. Because the drug shortage bulletin published by DSD uses two terms regarding therapeutic substitution "alternatives and analogues", the same terms were used in the questionnaire with their definitions. "Alternative" was defined as a drug product that has different active ingredient but from the same pharmacological class as the original prescribed drug. "Analogue" was defined as a drug product that has the same active ingredient but made by different manufacturer. The second page had questions about the observed drug shortage effects on patients' outcome and attitudes towards alternatives and analogous products. The last page contained questions that would help describing the magnitude of the problem and its development with time. In the end of the last page physicians were asked to list the most remarkable drug shortages during the 3 years around the 25th of January revolution.

The questionnaire was validated by four physicians using in-depth interviews and cognitive feedback techniques. All comments were considered. Arabic translations of some terms were added. Then, the first ten participants were asked about the clarity and unambiguity of the questions. No additional amendments were required at this stage.

2.2. Questionnaire distribution and collection

Between January 2013 and January 2014, physicians were approached in customer waiting areas for subscription/renewal of subscription in Medical Syndicates Union. The investigator introduced himself and clarified the purpose of the study. Physicians who agreed to participate received the self-administered questionnaire. Physicians were totally free to decline participation or leave the study without any consequences. Physicians who initially agreed to participate then aborted the study were recorded as dropped out. Filled questionnaires were collected by hand on the same day.

2.3. Statistical analysis

Data analysis was done using IBM SPSS Statistics, version 20 (IBM Corp. Armonk, NY). For 1 to 5 Likert type scale questions, responses more than 3 were categorized as "agreement", while responses less than 3 were categorized as "disagreement" and responses with 3 were considered neutral. A wider scale was used from the start to avoid extreme aversion bias [17]. For categorical and ordinal data, Chi-square test was used to determine differences in frequencies of responses [18]. For assessing the correlations between non-parametric variables, Spearman's correlation coefficient was used [18].

2.4. Ethical approval

The study protocol was approved (June, 2012) by the Research Ethics Committee for experimental and clinical studies at Faculty of Pharmacy, Cairo University. A registration sheet was used to record participants' names, work setting and contact information. Registration sheet was used to detect duplicate filling of questionnaire and exclude participants from outside target region, Greater Cairo. Registration sheet was kept confidential and questionnaire responses were anonymous. The Research Ethics Committee waived the study from informed consent as the data were anonymously collected and analyzed.

4. Results

4.1. Demographics of participants

The number of questionnaires distributed to physicians was 319. Questionnaires were filled and returned by 192 physicians

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