

A questionnaire-based study on knowledge and attitude towards counterfeit medication among the doctors in tertiary care hospital

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ABSTRACT

Background: Counterfeit drugs are a global problem and suffered almost all developing and developed countries worldwide. In India, it is a major problem which results life threatening issues as well as financial loss on health system. So, we conducted a cross sectional questionnaire-based study on knowledge and exposure to counterfeit drugs of doctors at SHKM Govt. Medical College, Nuh, Haryana, India.

Methods: A structured questionnaire was distributed to 100 registered doctors. The questionnaire was based on knowledge, attitude and its consequence on the health system by the practices of counterfeit medication.

Results: There were Twenty questionnaires excluded from the study due to incomplete information. Only 57.77% (46/80) subjects having the knowledge of questionnaire correct meaning of counterfeit drug. However, almost 90% (72/80) subjects were aware about its dangerous effects. More than 50% of the subjects have suggested that modern technology is capable to control counterfeiting of the medicine.

Conclusions: Counterfeit drugs create a people health hazard and waste to consumer income. The proper knowledge, awareness and modern technological approaches are the devices may helpful in diminution of counterfeit medication practices.

Keywords: Counterfeit drug, Doctors, Medication

INTRODUCTION

Counterfeit medicines pose a considerable threat to health and economic aspects of a population. It is a global problem and suffered almost all developing and developed countries worldwide. Counterfeit drugs are mostly originating from evolving industrial economies, especially

developing countries before entering the global market.¹ In many cases, they have been positively dangerous and detrimental to public health in terms of human suffering and burden on the health services.

According to WHO, A Counterfeit Medicine is one which is deliberately and fraudulently mislabelled with respect to

identity and or source. Counterfeit pharmaceuticals are that which intentionally carries a wrong label of identity and origin. It may include the product with the correct ingredients wrong ingredients without active ingredients, with insufficient quantity of active ingredient or with fake packaging.²

Literally Counterfeiting means copying or imitating. Counterfeit medicines represent an enormous public health challenge. Anyone, anywhere in the world, can come across medicines seemingly packaged in the right way but which do not contain the correct ingredients and, in the worst-case scenario, may be filled with highly toxic substances.

In other words, counterfeit pharmaceuticals are produced with lower quality, safety and efficacy than standards; this could be true about both brands and generics.³ Counterfeiting can apply to both branded and generic products. Counterfeiting medicines, including the entire range of activities from manufacturing to providing them to patients, is a vile and serious criminal offence that puts human lives at risk and undermines the credibility of health systems.

There is lack of studies about knowledge, attitude and practices towards counterfeit medicine, so this study was conducted. The present study was carried out to assess the awareness towards counterfeit medicine among healthcare providers.^{4,5}

METHODS

This is a cross-sectional, non-interventional, observational, questionnaire-based study.

The study was carried out at Shaheed Hasan Khan Mewati Government Medical College, Nuh, Haryana, a 500-bedded tertiary care hospital and medical college located in Northern region of India.

Study population

This is a non-interventional study which was conducted in the working doctors of S.H.K.M Govt. Medical College, Nuh, Haryana.

Inclusion and exclusion criteria

All the Doctors of S.H.K.M Govt. Medical College, Nuh, Haryana were randomized and 100 subjects who are willing to take part, were included in this study. The total numbers of selected subjects were 100, in which 20 subjects were excluded due to incomplete filling of questionnaire of the study.

Study instrument

The study instrument is being designed, validated questionnaire. The questionnaire contains 10 questions

regarding knowledge, attitude, and practices of Counterfeit drugs along with suggestions to improve reporting a counterfeit drug.

Modality of obtaining response

Every healthcare professional was given 5 minutes of time to fill the questionnaire. Verbal consent was taken before filling the questionnaire. During attempting the questionnaire, any clarification regarding understanding of the questions was provided.

Study conduct

The questionnaire was provided to the selected working doctors. The participants were personally, briefed about the questionnaire. Each participant was given 5 minutes to answer the questionnaire and they were not allowed to consult anyone during that time. They were allowed anonymity with regard to their names, but they had to write their designation. The questionnaires were then evaluated.

Analysis of data

Completed questionnaires were collected from each participant to evaluate the awareness of Counterfeit drug knowledge, Attitude and practice and reporting among healthcare professionals. The filled questionnaires were analysed with the help of Microsoft Excel worksheet (Microsoft Office 2016). Data was presented as a percentage (%) of the respondents. In case of unanswered questions, the participant was excluded from the study.

RESULTS

Sample size

Out of 100 subjects, 20 were excluded from the study due to incomplete information. So, the total no of subjects included in this study were 80 (n=80).

Result of the structure questionnaire

Only 57.77% subjects were reported about correct knowledge of counterfeit drugs. However, 90% were willing about the harmful effect of counterfeit medication practice. Almost all the subjects were agreed that counterfeit medication is major health problem for patient as well as society (Figure 1).

All most 90% of the subjects were able to identify the counterfeit drug and uses various methods were used to identify like labelling, colour appearance, packaging of the drug. More than 90% of the subjects were reported after identifying it (Figure 2).

To prevent the use of counterfeit medications 52.22% suggested that presently available legal action is sufficient to stop it. But, 96.66% subjects were shown the interest in requirement of stronger legal action for preventing

Counterfeit Medicine. On another hand 53.33% advices use of modern technology tools are helpful for awareness and prevention of counterfeit medication practices (Figure 3).

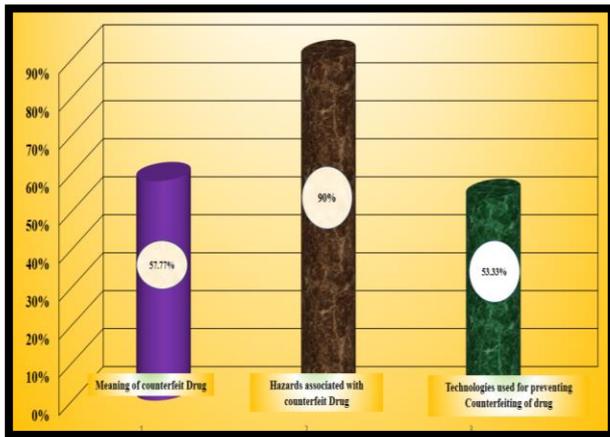


Figure 1: Result of knowledge about counterfeit drug (n=80).

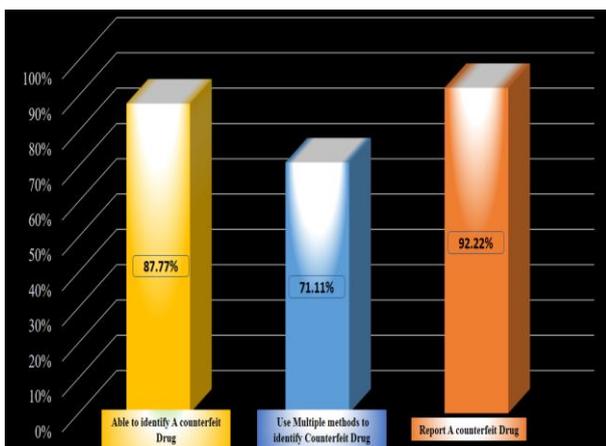


Figure 2: Result of practices about counterfeit drug (n=80).

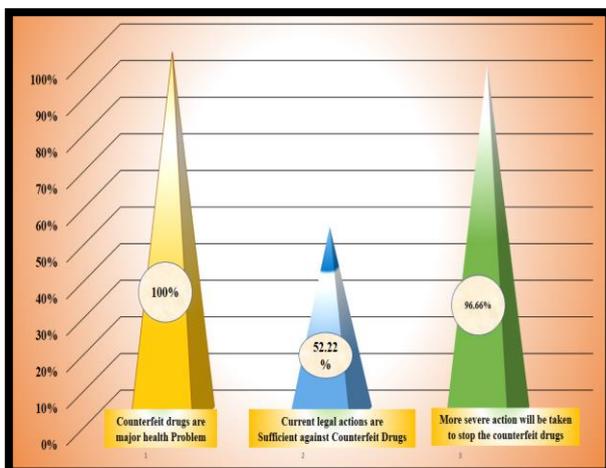


Figure 3: Result of attitude about counterfeit drug (n=80).

DISCUSSION

Counterfeiting is public health problem in developing as well as developed countries. The poor medicine quality directly evils patients and produce harmful impact on healthcare systems. Based on previous studies, the median prevalence of counterfeit medicines was 28.5% that varied from 11% to 48% in individual studies.⁵ The global market for counterfeit drugs is estimated to be at US \$200 billion in which India repercussions worth of 15 billion dollars.⁶ There are several reasons for counterfeit medication, the most common are lack of pharmacies or health clinics in rural area, cost effective (relative cheaper), poor legislative and regulatory framework for monitoring drug quality and imminent awareness of society towards its adverse effect.^{7,8}

The present questionnaire study was based on knowledge and attitude towards counterfeit medication among the medical practitioner in tertiary care hospital. A structural questionnaire was based on knowledge, uses, identification and harmful effect of counterfeit drugs. It's also contained regulatory and modern technology for the prevention of counterfeit medication behaviour.

The correct knowledge about counterfeit medicines is most important aspect to control it. The present study reveals that 57.77% (46/80) participants having the correct knowledge about counterfeit medicine which was higher than previous reported study Nagaraj et al, which imitates the increase in the awareness about counterfeit medicines.⁹ However, present study also reported that more than 40% doctors having lack of awareness about this. It will contribute toward an increase of counterfeit medicines behaviour. So, there is need to set of guidelines to be developed for the doctors execute anti-counterfeit measurement. Most of the participants in the present study were able to distinguish a counterfeit drug and warned about the risks associated with it. Counterfeit drugs consequences compromised patient safety, including drug resistance and patient deaths.^{10,11} Barcodes and Radio Frequency Identification (RFID) are the modern tools to differentiate the fake medicines from original one. Bansal et al, explained the various contrivances for prevention of counterfeiting. Almost 50% of the participants in the present study reported that current legal action is insufficient against counterfeit medication. Various previous studies also revealed that strict laws, enforcement/legal actions needed to stop the counterfeit medicines.⁵ There are lots of national and international initiatives were taken to conflict the problem of counterfeit and substandard drugs. With the 2008 amendment of Drug and Cosmetic (D and C) act, 1940, Indian drug regulatory authority that is Central Drugs Standard Control Organization (CDSCO) has classified not of standard quality (NSQ) products into three different categories A, B and C standard which is helpful in the evaluation quality of the products.¹² World Health Organization (WHO) introduced International medical products anti-counterfeiting taskforce (IMPACT) which are deliberately

and fraudulently useful in delivering the identification of mislabelled, wrong ingredients and fake packaging of drugs. Similarly, The Container Control Programme (CCP) was established by the United Nations Office on Drugs and Crime (UNDOC) and World Customs Organisation (WCO), to improve the inspection of containers which is the important tool for thwart the traffic of counterfeit drugs.¹³

In the Present study 92.22% (74/80) of medical participants shown the interest in reporting of counterfeiting and also suggested that more action will be needed for preventing such behaviour.

These findings of the current study suggest that there is an enormous need for training Doctors in the field of counterfeit. However, by strict vigilance and using modern technological tools by the drug control department prevent illegal entry of counterfeit medicines in the supply chain.

CONCLUSION

In conclusion, the findings from this study explained the knowledge, attitudes, and practice regarding counterfeit drugs among doctors and reveal that requirement of proper designing and implementation of educational programs among them for identify counterfeit drugs. Conversely, the findings also suggested that need of vigilant laws for thwart the society from counterfeit medication behaviour.

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Ethical approval: Not required

REFERENCES

1. Geneva, Switzerland: Department of Essential Drugs and Other Medicines, WHO; 1999. World Health Organization. Counterfeit Drugs: Guidelines for the Development of Measures to Combat Counterfeit Drugs. Available at: http://whqlibdoc.who.int/hq/1999/WHO_EDM_QSM99.1.pdf.
2. World Health Organization. General Information on Counterfeit Medicines. [Last accessed on 2013 May 19]. Available at: <http://www.who.int/medicines/services/counterfeit/overview/en>
3. Counterfeit Drugs Kill, World Health Organization. Available at: <http://www.who.int/impact/FinalBrochureWHA2008.a.pdf>
4. Bate R. Washington DC. American Enterprise Institute. Making a killing. The deadly implications of the counterfeit drug trade; 2008.
5. Sammons HM, Choonara I. Substandard medicines: a greater problem than counterfeit medicines? BMJ Paediatrics Open. 2017;1:e000007.
6. Shah NA, Bhagya M, Sattigeri, Nirav NP, Haresh AD. Counterfeit drugs in India: significance and impact on pharmacovigilance. Int J Res Med Sci. 2015;3:2156-60.
7. Chika FU, Alphonsus CO, Obiageli FE, Maureen NA, Andrew UU, Samuel OI. Factors associated with drug counterfeit in Nigeria: A twelve-year review. British Journal of Medicine & Medical Research. 2016;12:1-8.
8. Golocorbin KS, Mikov M. Counterfeit drugs as a global threat to health. Med Pregl. 2011;64:285-90.
9. Nagaraj A, Tambi S, Biswas G, Ganta S, Kumawat H, Mathur G. Counterfeit medication: Perception of doctors and medical wholesale distributors in western India. J Int Soc Prev Community Dent. 2015;5:S7-S11.
10. Mackey TK, Cuomo R, Guerra C, Liang BA. After counterfeit Avastin®--what have we learned and what can be done? Nat. Rev Clin Oncol. 2015;12(5):302-08.
11. Mackey TK, Liang BA. The global counterfeit drug trade: patient safety and public health risks. J Pharm. Sci. 2011;100:4571-79.
12. Bansal D, Malla S, Gudala K, Tiwari P. Anti-counterfeit technologies: a pharmaceutical industry perspective. Sci Pharm. 2013;81:1-13.
13. Almuzaini T, Choonara I, Sammons H. Substandard and counterfeit medicines: asystematic review of the literature. BMJ Open. 2013;3:1-7.

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ANNEXURE I

KAP survey questionnaire toward Counterfeit drugs

Department: -

Designation: -

PLEASE, lend us 5 minutes of your time and fill out our survey questionnaire

Your answers will be treated confidentially, and you will remain anonymous. You would do us a great favour. We are conducting a survey focusing on the topic of counterfeit drugs

1. What do you mean by counterfeit drugs

A. Placebo drugs B. Orphan drugs C. Fake drugs D. Substandard drugs

2. In your opinion, how much percentage of drugs are counterfeit in India

A. 0%-2.5% B. 2.6%-5% C. 5.1-10% D. >10%

3. Is it dangerous to take counterfeit drugs?

A. Yes B. No

4. Hazards associated with counterfeit drug

A. Treatment failure B. More side effects C. Increase in cost of treatment
D. All of the above

5. Do you think you are able to distinguish a counterfeit drug from the original?

A. Yes B. No

6. Methods to identify the counterfeit drugs

A. By physical observation B. By unexpected side effects
C. By lack of effectiveness D. All of the above

7. Technologies that have the capability of preventing counterfeiting drugs?

A. Barcodes B. Radio frequency identification (RFID)
C. Both A and B D. None of the above

8. Do you think the actions taken against counterfeit drugs are severe enough to stop you from buying these drugs?

A. Yes B. No

9. Would more severe consequences will be taken to stop the counterfeit drugs?

A. Yes B. No

10. Methods to combat counterfeit drugs?

A. Technological tools B. Enforcing regulatory bodies
C. Public awareness D. All of the above

11. If You encounter with A Counterfeit drug then would you like to report it?

A. Yes B. No