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# THE PROBLEM OF SPURIOUS DRUGS IN PAKISTAN: NEED OF GOVERNMENT INTERVENTION AND PROTECTION OF CONSUMER RIGHTS

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**ABSTRACT:**

Consumer laws are comparatively weak in developing nations including Pakistan. This not only affects the economy but, in some case, causes severe health hazards. Spurious drugs is a phenomena prevailing in the whole world but the worst case scenarios are found in developing nation like Pakistan.It is reported that 6-10% of cross border trade in medicines in developing countries comprises of counterfeit medicines. It is alleged that Pakistani market has almost 50 % spurious drugs. Thesespurious drugs are fake medicines which are made to imitate the genuine. This is not only a crime against economy but also against public health. With this background, this study aims to gauge the level of awareness among different segments of society, to find out the contributing factors to this problem and possible remedies to counter the problem. Primary data was collected using structured questionnaires from the consumers, healthcare professionals, retailers and wholesalers. Purpose sampling technique was used to collect data from 200 respondents. The statistical results show that the most contributing factors are no law enforcement and weak legislation while the most effectiveremedies to solve the problem of growth of spurious drugs are severe and enhanced punishment for the culprits and enforcement of laws, as well as random inspections at drugs outlets.

## 1.  INTRODUCTION:

The issue of spurious drugs is worldwide phenomenon.It became an eminent threat in 1980's and World Health Organization (WHO)has been working on this problem for almost 20 years (WHO,2006). It affects all the individuals including manufacturers, healthcareprofessionals, distributors or consumers. Spurious drug is in its self an oxymoron, as these are the drugs or medications that work exactly opposite to what the medications are actually meant for. WHO estimates that every year almost one million people lose their lives due to fake drugs.Every sector of the society gets affected by this problem eventually. Special measures, on a larger scale are required to deal with this problem and eliminate it from its roots.

Pakistan is one of the most affected countries that face this menace.There are several reasons for the rapid growth of this problem like self-medication, affordability, availability, awareness and governmental regulatory policies etc. Medications bought from unauthorized sources aggravate this crisis to great heights. According to WHO (2010) factors that encourage spurious drugs are free trade zones, inappropriate legislations, lack of political commitment, shortage of supply, and lack of corporation between stakeholders, absent or weak regulatory agencies for medicines, weak enforcement and conflict of interests. The strength of governmental authorities is inversely proportional to crisis of counterfeit drugs. This is due to the effective and in time measures taken by regulatory authorities and proper implementation of laws and policies. The problem of spurious drugs has been prevailing Pakistan for decades. It is a problem that affects the society in several ways. It causes severe health problems and even leads to death; the economy also takes a big toll due to this side-by-side black market of life threating medications. In 2009, 20 million tablets, bottles and packets of counterfeit and illicit medicines were detained in a five-monthsactionorganized by the International Criminal Police Organization (Interpol) across China and seven of its South-East Asian neighbours; 33 people were detained and 100 merchandising outlets shut. Asia has the largest share of the trade in spurious medicines (WHO, 2010). International Medical Products Anti-Counterfeiting Task Force is made by WHO that is specifically targeting the issue of spurious drugs globally.

**Figure 1: Total Numbers of Incidents of Spurious Drugs 2011- 2015**
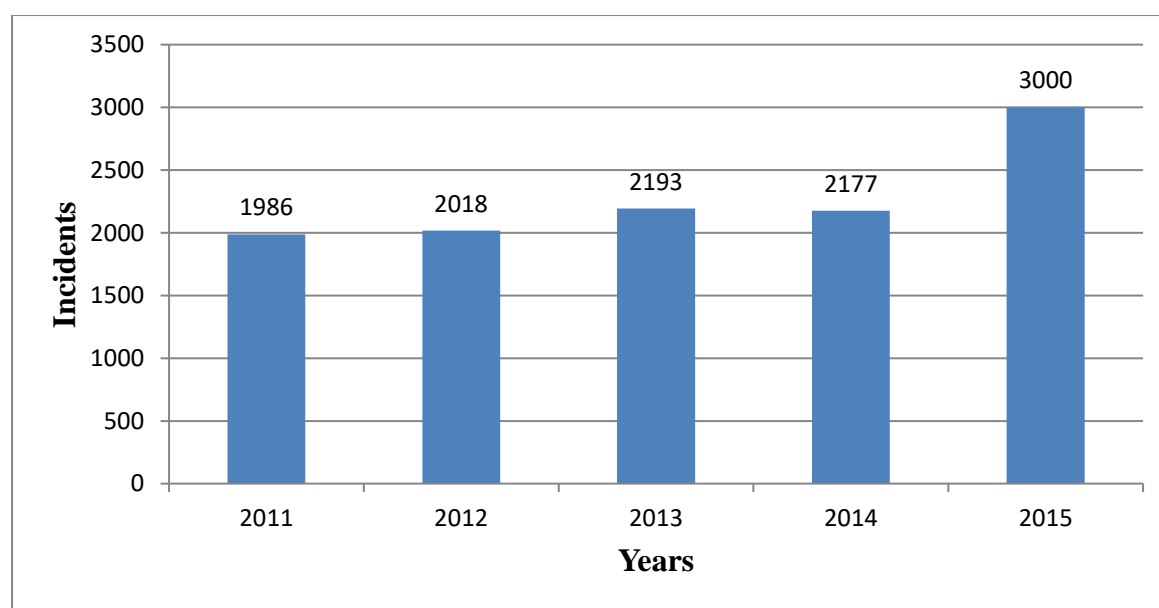


Source: Pharmaceutical Security Institute

The data presented by Pharmaceutical SecurityInstitute (PSI) reflects a continuous increase in the prevalence of the spurious drugs around the world (Figure 1). From year 2014 to year 2015 the incident reported has drastically increased which is alarming to all law enforcement agencies.

The geographic region with most occurrences of spurious medications is Asia (Figure 2). This not only reflects the illegal mass production but also brings forwards a huge number of vulnerable people facing the crisis.

**Figure 2: Incidents of Spurious Drugs- Regions of the World**
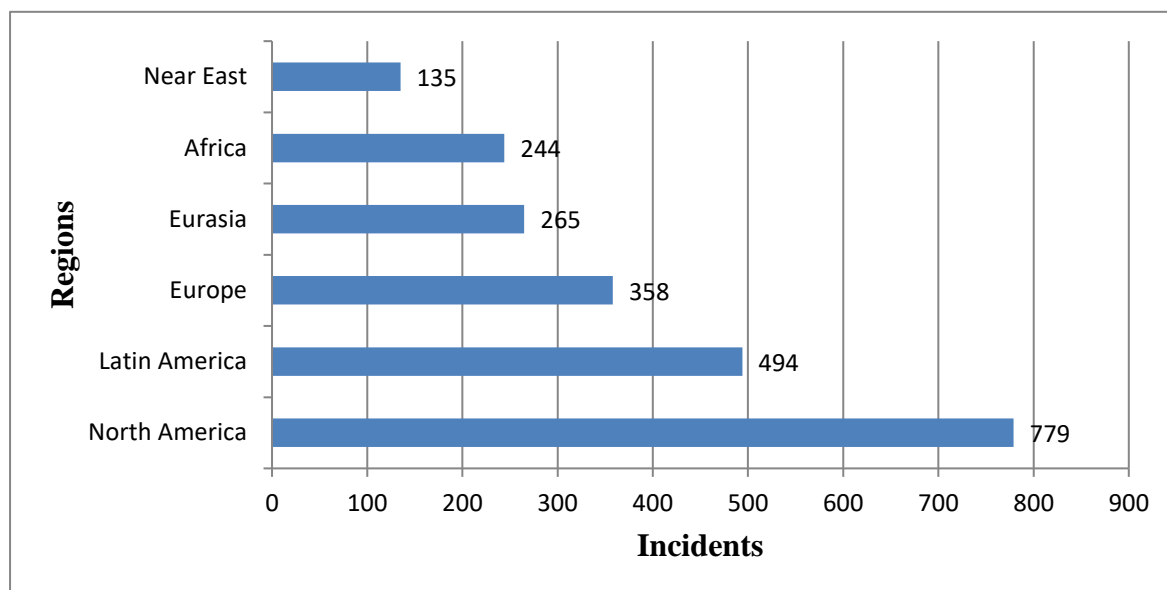


Source: Pharmaceutical Security Institute

Research work done on the spurious medications in developing countries is not enough due to several reasons like attitudes towards accurate reporting of cases, improper records and insufficient data resources. Pakistan has been placed at thirteenth among the countries that have prevalence of spurious drugs. It is reported that 6-10% of cross border trade in medicines in developing countries comprises of counterfeit medicines. It is alleged that Pakistani market has almost 50 % spurious drugs(Nishtar, 2010). Although there is a great potential for betterment, but due to the gap between policy formulation and proper implementation a vacuum is created that contributes in aggravating the crisis. Most of the spurious drugs produced in the country are sold locally and it is very difficult to distinguish the genuine medicines from spurious ones (Somra, 2015).

Public spends approximately 77 percent of their total health care budget on purchasing of the medicines. So, if 30 to 40 percent medicines are spurious then the vulnerability to the health hazards caused by spurious medicines also increases immensely (Fake Drugs, 2013). China, India, Japan and Pakistan are the four nations with most wide spread counterfeits (Lane, 2015). The data collected by Pharmaceutical Security Institute (PSI) identifies a few most prominent categories of healthcare medications that are targeted by the manufacturers of spurious drugs.

WHO raised the problem of spurious drugs for the very first time in 1985. According to WHO these drugs are mostly similar to the genuine drugs in their labelling, packing etc. they might not necessarily pose health hazard but can possibly fail to perform the functions they are administered for. In Pakistan, spurious drugs not only cause severe health hazards but also result in death. In 2012, 120 people lost their life due to a spurious cardiovascular

drug at Pakistan Institute of Cardiology (PIC) at Lahore (Yusuf, 2012). These are the situations in countries with poor drug regulations (Sahakyan, 2014). According to WHO the spurious drug crisis it twice higher in developing countries as compared to developed countries. The 100 cases of spurious drugs are reported and registered in Khyber Pakhtunkhwa (KPK), 130 pharmacies are operated by non- professionals in Punjab (Mazhar, 2016).

Such a dismal situation demands government interventionto stop counterfeiting of drugs because it damages economy, violates consumer rights, and it has severe health hazards(WHO 2006). According to Pharma Bureau of Pakistan, the pharmaceutical market is worth of two billion dollars and 15 percent or 300 million dollars are the spurious medicines. Similarly, according to the database of Havoc scope[1] the total worth of Pakistan black market is 6.53 billion dollars out of which $300 million is the counterfeits medicines. This has a drastic effect on the trade not only the export but also imports. Foreign companies are reluctant to do any kind of trade of transactions with Pakistan. Industrialist and pharmaceutical companies do not want to invest in Pakistan due legislative and regulatory vacuums. the effect on economy has led to many problems like inflation thus ultimately when there exists high prices, spurious drugs generate their ways to penetrate the market.

Additionally, it violates consumer rights. Consumers themselves are not able to identify the genuine medicines from the spurious ones in general. Most of the time they do not even realize that they are taking the wrong formula (Warsi, 2016). The medicines are copied so precisely that it would require a thorough testing and checking or sample testing from laboratories, which is not possible for public to do so on their own. Thus, government is required to take charge of the matter and ensure the good quality, licensed pharmacies and trained professional in this field. Finally, the most important reason government should regulate and intervene to stop counterfeiting of drugs which have severe health hazards.The weak supply system, lack of law enforcement, improper regulatory and pricing strategies are some of the main factors (WHO,2007)

The quality of drugs available in Pakistan is highly questionable. People are either not fully aware of the counterfeits in market or may not realise that they have purchased a fake product. This confusion is created to multi facet supply of drugs available in markets. These can be in forms of local vendors, online websites, private pharmacies, unauthorized wholesalers, private clinics etc. These medicines in most of the case are not properly manufactured (Somra, 2015). Despite the fact that there exists standard drug manufacturing and distribution procedures and laws drafted by government, still the existence of spurious drugs is not curbed. People have right to get safe, genuine and right products on the time off need. These products should be available to all and ensuring this is governments responsibility. Government is not only responsible to safeguard the rights and provide justice but it also has the duty of intervention when market fails to function. The findings of the research would be an insight to the real causes and most effective solutions as it would touch all sectors of society to gather the real knowledge about the contributing factors and solutions.

The study has the objectives to understand the existence of spurious drugs in Pakistan and to examine the factors contributing in growth of counterfeit drugsand finally to determine effective measures of controlling spread of spurious drugs in Pakistan.

Remaining part of the paper is organized as follow: Section 2 discusses the literature review that support the study and builds a theoretical understanding. Section 3briefs about all

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[1]http://www.havocscope.com/: Havoc scope Black market is an online database website that provides information about the black economy and black markets. The source of the data for the website includes government documents, media reports, academic researches etc.

the methodologies, sampling techniques, tests applied and the research instrument. Section 4 elaborates the results and discusses the implications of the findings. Lastly Section 5 sums up all the study to bring forward recommendations to fix the problem of spurious drugs.

## 2. THE ORETICAL UNDERSTANDING AND REVIEW OF LITERATURE:

When markets fail to maximize the social welfare or produce commodities that pose a threat to society than it is to be referred as market failure. It often leads to the interventionof government. Spurious drugs pose severe threat to health. This shows that market needs to be regulated so that any adverse effect can be controlled. After the identification of the nature of problem, government can formulate several policies that suit best to regulate the market by targeting the problem.Similarly, the article (9) "security of a person "of the Constitution of Pakistan, under the fundamental rights, explains that every individual has a right to life with all its amenities. The law guarantees that the life will be safeguarded and rights will be protected, it also encompasses the provision of a healthy and safe environment to live in.

The previous studies on spurious drugs have revealed that the problem has existed over many decades. Alubo (1993) examines the death causality caused by paracetamol drug in 1990. The impact of consumer actions and effective regulation system is focused. The study uses a cross sectional data for fraudulent drugs in market of Nigeria. The study finds that a thorough self-regulatory system can prevent the relapse of the tragedy. The war on counterfeit and poisonous drugs cannot be won without a better and improved regulatory system and initiatives taken by consumers. Cordell, Wongtada, and Kieschnick (1996) examine the relation between the consumer's willingness and product performance expectations. They also examine attitudes towards the lawfulness. Total 221 upper division business students from a state supported university were selected as a sample through convenient sampling. The findings reveal that consumer pragmatism and risk aversion drives the purchase of counterfeits. Odili et at (2006) examine the means of recognition of counterfeit drugs by the society pharmacists in Lagos State. Convenient sampling was used that consisted of 69 community pharmacists in retail and wholesale were considered. The method for collecting the data was questionnaires. The study indicated pharmacists that were selected as a sample were aware of the prevalence of the counterfeit drugs and also came across them as well. Despite that, no rigorous steps were taken to confirm or report the suspected drugs to the related authorities. Gaudiano, et al (2007) examine the quality control implemented on antimalarial tablets. These tablets were bought by random sampling in informal markets of Congo, Burundi and Angola. The results indicate that low dissolution profile was also a problem apart from the quality and quantity of the contents in drugs. The dissolution test while manufacturing the drugs should be the part of standard quality control protocol in case of developing countries as well. Other studies have clearly identified factors that contribute to the crisis. Mohamed (2007) examines the Sudan's Pharmacy legislations effectiveness to control the low-quality drugs and examines the market test available are sufficient or capable of detecting the spurious drugs or not. The results have suggested to stop the import of unregistered drugs, a well-developed system is required to ensure the quality and the procedures that are already existing are not effective enough to cater the problem should be revised.

Studies have also suggested some effective strategies and ways that would aid in control the problem. Berman (2008) examines ways to detect and reduce counterfeiting. It also examines a plan consisting of four steps that consist of budgeting, early warning signs supply side and demand side strategies. It concludes early detection of counterfeiting can play a significant role. The budgeting can also deter counterfeit from floating in the market. The

demand side can be controlled by making people aware of the risk that fraudulent drugs bring
along whereas the supply side can be controlled by rigorous monitoring and prohibiting all
unauthorized channels. Lybecker (2008) presents a theoretical model for examining
motivations driving counterfeiting. The study investigates why the pharmaceutical companies
have been slow to address the problem of counterfeiting. A time secondary series data from
different national and international entities was collected, especially from WHO. A proposed
theoretical model has been suggested for stopping counterfeit drugs. The study concludes a
need for cooperation for both supply chain and national boundaries. It also shows that larger
the supply of counterfeit drugs, the easier it is to detect and punish.

Several studies have pointed out that governmental intervention, better policy
formulation and laws enforcements are the most crucial parts in battling prevalence of
spurious drugs. Tipke et al (2008) have examined theoccurrence of sub-standard anti -
malarial drugs in market.  Analysis was conducted on a cross sectional data with 77 samples
which were tested by two physical approaches i.e. visual examination and fragmentation test
and two chemical methods i.e. qualitative colour reaction test and semi-quantitative thin-layer
chromatography. The study concludes that the governmental drug control authorities should
be reinforced; they should make efforts to improve and affordable quality control procedures.
General population should also be informed about the health risks associated with these
falsified or counterfeit drugs.

Consumer right protection and policies are also a way to prevent the problem. Patel et
al. (2009) have examined the perceptions of the consumers in South Africa about the quality
of drugs and if these perceptions have an influence on the procurement and use of these
drugs. A mixture of purposive and snowball sampling was employed for the study. Thematic
analysis was performed on the data gathered through 12 focus group debates including a total
of 73 members and through interviews. The findings point out the importance of involvement
of consumer in policies and campaigns. Ali (2009) has examined the fundamental quality of
finished drug products.  Findings indicated a serious need of regulatory actions and political
willingness in order to protect consumers.Sugita and Miyakawa (2010) analysed the health
impairment risk of taking counterfeit drugs. They also analysed the convenience in obtaining
the counterfeits in of Japan and worked on countermeasures for reducing the health
impairment risks. Employees from chemical cooperation and pharmaceutical chemist were
interviewed. The interviews were taken over the time period from 2006 to 2009. The findings
of the study indicate that the counterfeit drug prevalence is estimated to be 2.5 times higher
than the authentic drugs,under study, in market. Whereas, the cost of counterfeit drugs is
nearly equivalent to the authentic drugs. This requires a rigorous action and physician must
make people aware of the health impairment risk of counterfeit drugs.

Spurious drugs not only have serious health hazards but also have an adverse effect on
economy. Intake of counterfeit drug is not only harmful but itslows the recovery process. In
some cases, the body might not respond to genuine medicines due to prolonged usage of
spurious medicines. 50 people lost their life by using a spurious cough syrup in Pakistan
("Counterfeit on rise", 2015). The constraints faced by consumers in Pakistan also make it
difficult to have a complete record of the extent of the spread of problem. People are either
unaware or lack the resource to put their case forward. In time like these, only government
can ensure that there exist no such markets that promote the sale of these killer drugs.
The studies provide a clear picture about the intensity of the problem around the
globe. The literature has identified several methods that prove to be accurate when
conducting the research on this specific topic. It has elaborated the strategies/remedies and
several factors that are found to be common in solving and causing an increase in spurious

drugs respectively.The literature is suggestive that counterfeit is a common phenomenon in drug markets around the world but all the studies or surveys carried out mainly utilized the scientific methods of analysis. Still there is a lot of work that needs to be done in order to understand the problem properly. Developing nations especially require more focus on sorting the solution to this problem.

## 3. RESEARCH METHODOLOGY:

The research design emphasizes the problem of spurious drugs in Pakistan. Thus, the study follows the quantitative style which would help measure the objectives explicitly. Every participant from whom the data was collected was considered as unit of analysis. Asthe target population was healthcare professionals like doctors, nurses, lab-assistants, retailer at pharmacies, wholesalers and general public of city of Rawalpindi. Thus, in order to touch all these groups, purposive sampling technique was used consisting of 50 individuals from each category.The target sample was provided with the questionnaires through email while some were approached in person to ensure a quick and accurate response.

Mainly fourcategories were made due to the nature of the problem. The groups were one for health care professionals that included doctors, general practitioners and other healthcare staff, the other group was general public that included individuals belonging from all ages and socio-economic background. Thirds group included the retailers and pharmacists,while the last category included all the individuals that dealt in the medicines business and sale them in bulks like wholesalers. The reason to make the categories was to generate a response that touches all the layers of society mainly involved in the crisis so the identifying the weak link gets easier and more variation of point view and information can be collected.

The tool used for data collection was questionnaires. The questionnaire was mainly divided into five parts: cover page, background information, signs used to identify spurious/fake medicines, factors causing increase in the problem and remedies or interventions that could be used to hamper the problem. The cover page basically provided the rational and derails about the purpose of questionnaire. The background information focused on respondent profile that included questions about age, income, education, experience, profession. Another question was added to categorized the respondents as retailers/wholesalers, doctors or consumers. The next part investigated about the signs that people use to identify whether a drug is counterfeit. The part following this inquired about the possible factors that contribute in the spread of the phenomena of spurious drugs in society. The last part investigated for the most effective and efficient remedy/intervention that would curb the crisis. A 5-point Likert scale was used in the questionnaire.

To strengthen the content validity, it was presented to some experts to ensure that the questionnaire collects the information needed. To conduct the pilot study 11 questionnaires filled by 11 respondents was included and the data was analysed using Statistical Package for Social Sciences (SPSS version 20) for application of reliability test. The questionnaire contains 25 items apart from the demographic items. After confirmation from reliability tests, the questionnaire was finalized for the main data collection.

The questionnaires were distributed among 200 target individuals (doctors, healthcare professionals, general public, retailers, wholesalers). 169 out of 200 questionnaires were filled making a response rate of almost 84.5 percent. Wholesalers provided the least responses. While the doctors and general public gave a 100 percent response. Due to improper filling,5 questionnaires were discarded making a total of 164 accurately filled questionnaires out 200.

Statistical test of One-Way ANOVA was executed on the first part of the questionnaire to determine the level of understanding/awareness among the individuals utilizing the demographic details. On the second part (Contributing factors in increase of spurious drugs) and third part (Effective remedies to control the spread of spurious drugs), One sample t-test was used to check the degree of effectiveness of each part. Frequencies were also calculated to compare the sections of the responses.

Following hypotheses were formulated to test:

$H_1 = \mu_{literacy} = \mu_{supply/demand} = \mu_{pricing} = \mu_{legislation} = \mu_{corruption} = \mu_{prescription} = \mu_{non\text{-}professionals} = \mu_{illegal\ imports} = \mu_{no\ law} = \mu_{unlicensed} \geq 2.5$ i.e. mean value for each item is $\geq 2.5$.

$H_2 = \mu_{implementation} = \mu_{coporation} = \mu_{association} = \mu_{awareness} = \mu_{inspection} = \mu_{regulations} = \mu_{prohibition} = \mu_{amendments} = \mu_{licensing} = \mu_{regulations\ on\ trade} = \mu_{increase\ supply} \geq 2.5$ i.e. mean value for each item is $\geq 2.5$

$H_3$= Understanding of spurious drugs increases with increase in age

$H_4$= Understanding of spurious drugs increases with increase in education

$H_5$= Experience is positively related to understanding of spurious drugs

$H_6$= Profession has effect on understanding of spurious drugs

## 4. RESULTS, INTERPRETATION AND DISCUSSION:

First of all, reliability test was executed to confirm that the data collected is reliable and noteworthy for further analysis. Table (1) presents the reliability statistics.

**Table 1: Reliability Statistics**

| Cronbach's Alpha | Number of Items |
|---|---|
| .761 | 25 |

Source: Authors' Calculations

The resulting Cronbach's Alpha reliability is 0.761. According to the acceptable standard any value ranging from 0.5 and above is considered acceptable and represents the internal consistency. Thus,it suggests that the data is valid and correct and the results can be deduced from it.

The demographics statistics reveal that the majority of respondents i.e. 32.9 percent (54 out of 164) lie between the age of 26 to 33 years while the participants under the age ranging between 18 to 25 are 31.1 percent and following that comes the respondent age bracket of 34 to 41 (17.7 percent) and 42-49 (12.2percent)respectively. The respondents lying between the ages of 50 and above occupy the least fraction i.e. 6.1 percent making a total of 10 out of 164 participants.

Most of the respondents were intermediate making almost 34.8 percent (57 out of 164) of total respondents. The second majority was of bachelor degree holders who were 26.8 percentof total. Respondents holding the professional degree were 18.3 percent, respondents with matriculation and master's degree were 7.3 percent, and diploma holder and other educational level were 4.9 percent and 0.6 respectively.

Participants belonging from experience of 5 years or below comprised the biggest proportion. The experience holders of over 20 years were only 1.8 percent and individuals with work experience of 6 to 10 years, 11 to 15 and 16 to 20 years are 29.9 percent, 10.4 percent and 3 percent respectively.

As the questionnaire was distributed among four strata, 30 percent are the doctors which mean out of 164 respondents 50 were doctors. 28 percent were retailers that included shop boys, managers at outlets and drug store owners. 11 percent i.e. 18 out of 164 were dealing in wholesale business of medicines whereas 30 percent were categorized as other which were basically consumers who opted for the "other" in the questionnaire due to varying professions.

To check the level of awareness among the participants One-Way Anova was used. it represented that whether people (based upon demographics) have the understanding and awareness about the spurious drugs and their signs. After applying the test for level of awareness with age, the results show that with increase in age level of awareness also increases. The least awareness is in the respondents between the ages of 18 to 25, while the highest awareness regarding the spurious drugs is in the individuals of age from 42 to 49.

The test for level of awareness with experience shows that individuals with experience of 16 to 20 yearsare the most aware about the problem.The level of awareness with professions of respondents depicts that the consumers or people apart from the professions of doctors, retailers and wholesalers arethe least aware about the signs whereas the wholesalers, retailers and doctors are more aware.If we compare the level of awareness with level of education of respondents, results show distinctive results, because it illustrates that the individuals holding a matriculation degree have more awareness as compared to other people. The reason is that the individuals with matriculation degree are mostly retailers or wholesalers with more experience but less education.Observing the categories in which mainly respondents have been divided into categories, consumers have the least awareness but the retailer/wholesalers and doctors are comparatively more aware.

To calculate the mean and the mean difference for the contributing factors and the remedies/intervention, One-sample t-test has ben conducted. The test value was 2.5 as the 5-point Likert scale has been used (Table 2).

**Table 2: One Sample Statistics (Factors)**

| Sr# | Contributing Factor | t-statistics | Mean | Mean Differences |
|---|---|---|---|---|
| 1. | Lack of Awareness and Literacy | 16.365* | 3.88 | 1.378 |
| 2. | Supply and Demand of Medicines | 16.324* | 3.75 | 1.250 |
| 3. | Poor Pricing Strategies | 17.029* | 3.84 | 1.341 |
| 4. | Weak Legislation | 19.602* | 3.99 | 1.488 |
| 5. | Corruption | 13.735* | 3.67 | 1.171 |
| 6. | Availability of Drugs without Prescription | 14.477* | 3.63 | 1.128 |
| 7. | Non-Professionals in Drug Business | 15.123* | 3.66 | 1.159 |
| 8. | Illegal Drug Importation | 12.127* | 3.47 | .970 |
| 9. | No Law Enforcement | 25.041* | 4.18 | 1.677 |
| 10. | Unlicensed Pharmacies and Healthcare Professionals | 19.380* | 3.94 | 1.439 |

*significant at 1% level.
Source: Authors' Calculation

All the means values presented in the Table (2) clearly depict that the factors under study are contributing in the spread of spurious drugs. As the mean value of "No Law Enforcement" is scoring the highest it reveals to be one of the most leadingfactors that cause an increase in the spread of spurious drugs. Apart from this the second most contributing

factor is "Weak Legislation" with a mean score of 3.99. All the rest of the factors are also scoring above the test value i.e. 2.5, and range between 3.47 to 3.94,   it implies that the other factors also play a major role in the increase of the spurious drugs in the society.

**Table 3: One Sample Statistics (Remedies/Intervention)**

| Sr# | Remedies/Interventions | t-statistics | Mean | Mean Differences |
|---|---|---|---|---|
| 1. | Ensure Implementation of laws & Increase Punishment in drug laws | 24.731* | 4.26 | 1.762 |
| 2. | Enhance corporation between stakeholders (e.g. Drug Inspectors, Drug Regulatory Authority Punjab, Pharmaceutical Associations, Pakistan Standards and Quality Control Authority) | 12.420* | 3.55 | 1.049 |
| 3. | Awareness and Training programs for professionals & public | 17.564* | 3.90 | 1.402 |
| 4. | Random Inspection Of drugs at sale points | 23.164* | 4.06 | 1.561 |
| 5. | Price Regulation | 15.527* | 3.79 | 1.287 |
| 6. | Prohibit sale of drugs without prescription | 17.092* | 3.80 | 1.299 |
| 7. | Amendments into legislation | 15.212* | 3.84 | 1.341 |
| 8. | Buy drugs only in licensed drug stores | 20.410* | 3.89 | 1.390 |
| 9. | Regulation of Drugs Trade Chain | 12.582* | 3.57 | 1.067 |
| 10. | Increased Drug Supply | 10.151* | 3.46 | .963 |

*significant at 1% level.
Source: Authors' Calculations

Table (3) provides the details of meanscore, it clearly shows that the remedy/intervention "Ensure implementation of laws & Increase punishment in drug laws" scored the highest value i.e. 4.26. It infers that the most effective intervention that government can use to purge problem from society is to pledge that the laws will be properly enforced and the punishment of the any accused authority or person will be increased. The second most effective remedy is "Random inspection of drugs at sale points" with a scoring mean of 4.06. It indicates that honest and random unannounced inspections at drug store or outlets will also prove to be reason that would play a vital role in eliminating the problem.

## 5.  CONCLUSION AND RECOMMENDATIONS:

All the evidences, data and literature conclude that drug counterfeiting is a problem faced by many nations all over the globe. The remedies that were found to be the most effective in the study cannot be executed with the government intervention. The results have shown that the most identified factor that causes spread in counterfeit drugs is lack of law enforcement. Weak legislation scored second on most leading cause in spread of the problem. When ranking the remedies, the enforcing the implementation of laws and increase punishment has been found to be the most effective. The random inspection of drugs at outlets has also resulted as very significant. The aforementioned factors and remedies clearly indicate that law implementation is lacking. The system requires to be strengthened to ensure that laws serve the purpose they are made. The laws that already exist require government to ensure their proper application. No one can deal with this problem on individual base neither

can it be sorted only by focusing on only one segment in the society. A multi-level cooperation is required and laws need to be implemented on all levels and in every possible way. This study has identified very low consumer awareness apart from weak legislation and no law enforcement. Consumer awareness can play a significant role in controlling the growth because if the consumers know about the dangerous health implications and signs to identify the spurious drugs, the purchase will automatically drop. Lacking awareness is the main thing that gives way to the spread of this problem.

This problem is currently not prioritized on government'sagenda neitherit is being a subject of any campaigns. The consumers are not only at the most dangerous edge of the problem but also least informed and aware. The government should intervene not only to protect consumers rights but to encourage public to report such cases. The law enforcement is identified as the most crucial part whereas random inspection of drugs was also pointed out as a significant remedy. The study is a foundation that provides policy-oriented suggestions.

There are several remedies that the research has proven to be effective but the one that have scored the most and are also supported strongly by the literature are:
- Ensure the laws that exist are implemented properly, accurately and without any discretions
- A proper structure with law implementation authorities is required which would focus on executions of policies and laws more effectively.
- Policies should be formulated that are oriented towards an action like random inspections at drug outlets
- The working of drug courts and drug inspectors should be monitored and enhanced.
- No drugs should be bought without proper prescription from any health care specialist
- Legislations must be introduced where people involved in any business regarding spurious drugs get strict and harsh punishments
- Most importantly, Public must be made aware and government should provide proper platforms where trainings and information regarding the problem are provided to enhance the understanding of consumers

The reluctant behaviour of the individuals also added as a limitation because due to issues like confidentiality, security and other factors people were not willing to be a part of the survey. Although it was ensured to respondents that the data is collected for academic purpose even then the individuals were suspicions about the information being gathered, which made data collection very laborious. Further studies can be done on the role of quacks in the increase of the problem spurious drugs.

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