S12

A SURVEY OF THE MISUSE AND ABUSE OF OVER THE COUNTER DRUGS IN KENYA

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Dedications

To my dad and mum for believing in me and being there for me always.

To my brother Ndiang`ui and my sisters Wahu, Milka and Njeri; you guys mean the world to me.

To John for his support and kindness and teaching me what life is all about.

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ABSTRACT

Drug misuse can be defined as the use of a drug`s medical properties for wrong indication, wrong dosage or for a duration longer than is recommended. Drug abuse is a situation where one is fully addicted or dependent on a drug. Drugs available to the public from pharmacy outlets can either be: -

- Over the counter (OTC) drugs
- Prescription only medicine (POM)

Over the counter (OTC) drugs are also known as non-prescription drugs. OTC drugs require no prescriptions from medical practitioners and hence are available to the public as they so wish. On the other hand POM can only be dispensed to the public as per the prescriptions from licensed medical practitioners. Although most people use POM properly, a significant number do not. They might take them without a doctor`s prescription, use more than prescribed or take them for reasons other than those that the drugs are prescribed for.

However, OTC drugs have the highest likelihood of misuse and abuse. Misuse and abuse of OTC products is quite common in Kenya and the objective of this study is to ascertain the extent and identify culprit drugs. This study also looks into the rational use of these products, their effect on underlying disease conditions and interactions with other drugs. The majority of health care professionals do not enquire about these interactions while there is rampant misuse and abuse of OTC drugs that may induce significant medical problems. The principles of rational drug use call for correct diagnosis of the problem followed by identification of the most effective and least toxic drug for managing the condition.

INTRODUCTION AND LITERATURE REVIEW

Self-medication abounds today with a very high degree of sophistication. It's a national policy for pharmacists, being custodians of drugs, to protect their patients in case of drugs which require prescription orders throughout their practice. OTC drugs are available to the public on request from pharmacy outlets allowing for misuse and abuse as self-medication is easy. These preparations have implications on other disease conditions, interact with other drugs and affect other activities such as driving, operating heavy machinery and breast-feeding. Although these interactions are clear to professionals in the health care delivery system, this is not the case with the public. Therefore, the health care professionals especially pharmacists have the greatest task in ensuring proper use of OTC drugs and thus prevent their misuse and abuse. We as pharmacists should prevent irrational use of OTC drugs at all levels by ensuring that we dispense OTC drugs only in conditions that warrant their use.

OTC Drugs most susceptible to misuse and abuse

Various OTC products are available in the pharmacy outlets. With recent scientific and technological advancements, hundreds of new OTC products are poured into the market each year. In recent years, the pharmaceutical world has recognized the need for complimentary medicine and hence increasing the number of OTC products. Therefore OTC drugs can either be in form of conventional medicine or alternative medicine. OTC drugs are used in a variety of problems which include: -

1. Respiratory problems e.g. colds and flu, cough, sore throat and allergic rhinitis.
2. Gastrointestinal tract problems e.g. mouth ulcers, heartburn, indigestion, nausea and vomiting, motion sickness, constipation, and diarrhea as well as haemorrhoids.
3. Skin conditions e.g. eczema, dermatitis, acne, athlete`s foot, cold sores and common childhood rashes as well as warts, verrucae and scabies.
4. Painful conditions e.g. headaches and musculoskeletal problems.
5. Women`s health e.g. cystitis, dysmenorrhea and vaginal thrush.
6. Eye and ear problems.
7. Childhood conditions e.g. napkin rash, head lice and oral thrush.

Certain classes of OTC drugs are more prone to misuse and abuse than others. These classes include: -

- Painkillers
- Antacids
- Cold and cough preparations
- Anti-malarials
- Anti-emetic drugs
- Laxatives
- Anti-allergy drugs e.g. creams and ointments

As much as antibiotics are considered to be POM, a number of them can be purchased from pharmacy outlets without a prescription. This is especially so with co-trimoxazole (SEPTRIN®) and the penicillins. In this light therefore, antibiotics were also included in this study to establish whether they are culprit drugs for misuse and abuse because contrary to ethics, some antibiotics are available as OTC drugs.

Misuse and abuse of OTC drugs may occur because the public lacks the following information:

1. Painkillers

Painkillers are also known as analgesics and as the name suggests, offer freedom from pain sensation. Analgesics are broadly classified into: -

- Non steroidal anti-inflammatory drugs (NSAIDS)
- Opioid analgesics
- Steroidal anti-inflammatory drugs

NSAIDS are the only OTC drugs that do not require a prescription. Many people unjustifiably take analgesics as the first option to alleviate pain in situations that do not warrant their use. Some of the most widely used analgesics available as OTC drugs include:

I. Aspirin

It's the most common analgesic used to treat fever, arthritis and pain. Possible side effects include nausea, heartburn or development of bleeding ulcers. Reye's syndrome may develop if aspirin is given to children with the flu or chicken pox. This syndrome is characterized by vomiting, swelling of the brain and liver, difficulty with mental functioning and can often lead to death. People with liver damage should also avoid using aspirin.

II. Paracetamol (acetaminophen)

Paracetamol commonly known as PANADOL® is used to treat aches, pains and fevers and is generally free from side effects. However, large doses or overuse of this drug may cause rashes, fevers or changes in blood composition. People with kidney or liver problems should consult a doctor before using paracetamol.

III. Ibuprofen

Locally marketed as BRUFEN®. Ibuprofen is used to relieve pain associated with arthritis, menstrual cramping and discomfort, fever and muscle strains. Possible side effects might include stomach upset, dizziness, drowsiness, headache or ringing in the ears. Overuse of this drug may lead to confusion, tingling in hands and feet and vomiting.

2. Antacids

Antacids are drugs which neutralize the hydrochloric acid secreted in the digestive juices of the stomach. Antacids which include aluminium hydroxide, calcium carbonate, magnesium hydroxide and sodium bicarbonate (ENO®, ANDREW'S LIVER SALT®) are used to relieve pain and discomfort in disorders of the digestive system including dyspepsia,

hyperchlorhydria and peptic ulcer. However, if these products are overused, various complications may arise which include renal calculi, constipation, diarrhea, lethargy and neurological disturbances. Neuro-muscular problems and bone defects may occur because aluminium hydroxide may cause loss of phosphates from the body. Preparations containing sodium bicarbonate are contraindicated in patients having hypertension and renal insufficiency.

3. Cold and cough preparations

Most cold and cough preparations are designed to treat specific cold symptoms and provide temporary relief from discomfort. The most widely used constituents in cold remedies include:-

I. Anti-histamines

Used to combat symptoms such as hay fever, burning and tickling sensations in the pharynx and itchy, watery red eyes. Due to their sedating action, preparations with anti-histamines such as diphenhydramine, triprolidine and chlorpheniramine have been used as sleeping aids by a considerable number of people.

II. Nasal decongestants

They bring about intranasal vasoconstriction leading to decrease in the volume of the nasal secretions hence decongestion. Nasal decongestants include ephedrine, pseudoephedrine, phenylpropanolamine and phenylephrine. Decongestants can be misused and abused because of their excitatory action. They can also cause rebound nasal congestion which increases their misuse and abuse thus prompting a cycle of dependence.

III. Antitussives

These are cough suppressants used to treat painful persistent dry coughs which usually lead to discomfort, disturbed sleep, inducing anxiety, and worsen laryngiotracheal inflammation. Narcotic antitussives commonly used include codeine, dihydrocodeine, pholcodeine and hydrocordone. Codeine has a potential for abuse due to its analgesic and sedating properties.

IV. Expectorants

These are compounds which facilitate and accelerate the removal of bronchial secretions from the airways. Expectorants are used to help clear mucous from the respiratory system. But these medications may contain alcohol, hence may be addictive because young people may abuse these medications for the effects derived from alcohol use as the alcohol content in some OTC preparations maybe as high as 40%.

4. Anti-malarials

These are drugs used for prophylaxis, treatment and prevention of relapses of malaria. Malaria is endemic in most tropical countries and especially so in Kenya. Anti-malarials commonly used in Kenya include: -

- 4-aminoquinolines e.g. chloroquine and amodiaquine
- 8-aminoquinolines e.g. primaquine

- 4-quinoline methanols e.g. quinine and mefloquine
- Biguanides e.g. proguanil
- Diaminopyrimidines e.g. pyrimethamine and trimethoprim
- Sulphonamides and sulphones e.g. sulphadoxine, sulphamethopyrazine and dapsone.

Chloroquine and sulphadoxine-pyrimethamine combinations are the most misused antimalarials. They are misused by individuals from malaria endemic areas once they experience symptoms like fever, headache and muscular aches and pains which are synonymous with but not diagnostic of malaria. It often happens that malaria may not be the underlying condition. Sometimes misuse occurs by self-administration of one antimalarial after another due to what the individual may perceive as lack of therapeutic effect of the initial drug. This however may be a case of wrong indication or drug resistance.

5. Antibiotics

Antibiotics are used to treat infections caused by organisms that are sensitive to them, usually bacteria or fungi. Antibiotics are the greatest contribution of the present century to therapeutics. Their importance is magnified in the developing countries where infective diseases predominate. As a class, they are one of the most frequently used as well as misused drugs. Misuse could occur in any of the following ways: -

- Wrong indications e.g. in viral illness like flu, self-medication with antibiotics is quite common.
- Under dosing hence sub therapeutic dosing
- Overdosing
- Premature stopping of effective therapy
- Extended duration of administration than the recommended duration that has no added therapeutic effects. Beta lactam antibiotics especially penicillins are the most susceptible to misuse due to their wide clinical applications. Saturation of certain environments e.g. hospitals with penicillin has produced penicillin resistant strains of micro-organisms. These pathogens produce Beta lactamases excluding penicillins as treatment of choice for infections by these micro-organisms.

6. Anti-emetics

These are drugs that prevent vomiting. They are used for such conditions as motion sickness, vertigo and to counteract nausea and vomiting caused by other drugs. Common constituents in anti-emetics include: -

- Anticholinergics e.g. hyoscine
- Anti-histamines e.g. promethazine,diphenhydramine and meclizine
- Neuroleptics e.g. phenothiazines like chlorpromazine and prochlorperazine. Haloperidol is also available in some preparations.

All the above drugs have the potential to cause drowsiness Promethazine appears to be the most sedating of the anti-histamines.

Hence, anti-emetic drugs are subject to misuse and abuse due to their sedating effects. Some patients may procure anti-emetics in conditions which warrant treatment other than anti-emetics as is the case with peptic ulcer and gastric carcinoma. Patients who are vomiting should be referred to the doctor, who will be able to prescribe an anti-emetic if needed.

7. Laxatives

Laxatives are also known as cathartics or purgatives. Laxatives are used to stimulate or increase the frequency of bowel evacuation or to encourage a softer or bulkier stool. Common laxatives in use include: -

- Bulk laxatives e.g. bran, plantago, ispaghula, methyl cellulose and sterculia
- Stimulant or irritant laxatives e.g. emodins (senna, aloe and cascara sagrada), castor oil, bisacodyl and phenolphthalein
- Lubricant laxatives e.g liquid paraffin
- Emollients or stool softeners e.g. docusates (dioctyl sodium sulfosuccinate-DOSS)

Two groups of patients are likely to abuse laxatives. Those with chronic constipation who get into a vicious cycle by using stimulant laxatives which eventually results in damage to the nerve plexus in the colon. Others take laxatives in the belief that they will control weight for example, those who are dieting, or more seriously, women with eating disorders (anorexia nervosa or bulimia) who take very large quantities of laxatives.

Some individuals are obsessed with using purgatives regularly. This maybe the reflection of a psychological problem. Others who use a purgative casually, obtain thorough bowel evacuation and by the time the colon fills up for a proper motion (2-3 days) they get convinced that they are constipated and start taking the drug regularly. Chronic use of laxatives must be discouraged. Once the laxative habit forms, it is difficult to break. The pharmacist is in a position to monitor purchase of laxative products and counsel patients as appropriate.

8. Anti-allergy drugs

Anti-allergy creams and ointments usually contain corticosteroids. Topical corticosteroids are widely employed and are highly effective in a number of skin diseases e.g. atopic eczema, exfoliative dermatitis, contact dermatitis etc. They are especially useful in inflammatory skin conditions. They are also used as antidotes to insects stings e.g. bee sting. Common corticosteroids included in creams and ointments are betamethasone, beclomethasone and mometasone furoate. However, these preparations are widely misused in the treatment of acne. This is a wrong indication because the most effective preparations for acne are keratolytics, anti-microbials and abrasives. These preparations are also misused as skin lighteners to achieve a fair complexion especially by ladies who are dark-skinned. Prolonged use of topical corticosteroids can lead to fragile skin, purple striae, easy bruising, telengiectasis and cutaneous atrophy.

EFFECTS OF DRUG MISUSE AND ABUSE

Misuse and abuse of OTC drugs has various consequences which include: -

1. Failure to achieve treatment goals e.g. due to drug resistance as is the case with penicillins. Sub therapeutic doses and dose regimes are another reason for drug failure.
2. Iatrogenic effects e.g. improper and chronic misuse of antacids like aluminium hydroxide can cause constipation while prolonged misuse of NSAIDS e.g. brufen can be ulcerogenic.
3. Drug dependence e.g. phenylpropanolamine, a sympathomimetic included in many cold, allergy and weight control products has been abused by adolescents and is often sold as cocaine or amphetamine substitutes (AHFS Drugs info.1999). Regular misuse and abuse of laxatives can lead to habituation. Laxatives cause powerful bowel movements that empty the whole colon. This may lead to a long interval before the next motion. For some individuals, this long interval maybe confused with constipation and they may require to take more laxatives hence habituation. As mentioned earlier, caffeine is found in many painkillers, allergy remedies and cold preparations. Misuse and abuse of such stimulants can precipitate physical and psychological dependence.

4. Development of drug induced diseases or adverse drug reactions. Misuse of OTC products may actually produce significant medical complications. For example, dangers of purgative abuse include: -
   - Flaring of intestinal pathology and rupture of inflammed appendix
   - Fluid and electrolyte imbalance, especially hypokalaemia
   - Steatorrhoea, malabsorption syndrome
   - Protein losing enteropathy
   - Spastic colitis and an atonic nonfunctioning colon

   Caffeine is found in many pain medications and allergy and cold remedies. Unusually high doses or excessive use of stimulants over long periods of time can lead to anxiety, hallucinations and severe depression.

5. Drug tolerance – This signifies requirements of higher doses of a drug to produce a given response. Tolerance develops by repeated use of a drug in an individual who was initially responsive. It is largely due to compensatory responses that decrease the drug's pharmacodynamic action.

6. Rebound phenomenon – Intranasal vasoconstrictors misuse leads to rhinitis medicamentosa a condition where rebound congestion only responsive to the culprit drug occurs. Hence nasal decongestants should not be used for long.

REASONS BEHIND MISUSE AND ABUSE OF OTC DRUGS

1. Self-medication – The best illustration of this is a situation whereby individuals buy antimalarials just because they exhibit symptoms characteristic of malaria yet no laboratory investigations have been carried out.
2. Dependence which may be: -
   - Pyschological dependence characterized by an irresistible urge to take drugs whereby individuals use the drugs for personal satisfaction, as is the case with codeine which is an antitussive hence included in many cough preparations.
   - Physiological dependence when withdrawal of the drug produces signs and symptoms frequently the opposite of those sought by user e.g. habituation with laxatives
3. Provision of POM as OTC drugs without a prescription especially antibiotics. The main culprit drugs here are the penicillins.
4. Desire to achieve a speedy recovery than is possible e.g. an individual hoping to clear a throbbing toothache within minutes may take extremely high doses of painkillers e.g. ibuprofen.
5. Misconceptions held by the public as to what remedy works best for certain conditions. For example, many people believe that chlorpheniramine (PIRITON®) is indicated to induce sleep yet its main clinical application is as an antihistamine.
6. Failure by the health care professionals to inform members of the public about the undesirable effects of drug misuse and abuse.
7. Lack of enforcement by drug suppliers to curb drug misuse if they suspect that the drug in question will no doubt be misused and abused e.g. preparations containing opiates like codeine.

OBJECTIVES OF THE STUDY

In the light of the above information, this study aimed at: -

- Establishing the extent of misuse and abuse of OTC drugs with respect to selected categories of OTC products.
- Establishing the common constituents in various categories of OTC drugs which make them an easy target for misuse and abuse.
- Finding out what contributes most to misuse and abuse of OTC drugs.
- Identifying the consequences of misuse and abuse of OTC drugs in our local setup.
- Finding out if control measures of curbing drug misuse and abuse are being implemented.
- Coming up with suggestions to avert the inappropriate misuse and abuse of OTC drugs and what the pharmacists in particular can do to achieve this whether in a hospital, community or industrial setting.

DATA COLLECTION

My target study area was in pharmacies. I aimed to cover both private and community pharmacies.

Research Methodology

This study was carried out by use of a questionnaire which was designed to identify the predominant OTC products which are misused and abused by the public as obtained from pharmacy outlets. I chose to concentrate my study on pharmacies because pharmacists whose social objective revolves around drugs should be in a position to provide an approximate picture of the prevalence of misuse and abuse of OTC drugs in our country.

I made visits to various pharmacies operating within the city of Nairobi. The respondents targeted would preferably be pharmacists though a number of them were not available and only pharmacy assistants could be reached. The respondents were issued with a questionnaire which they were required to answer by ticking appropriate answers (see sample questionnaire provided in the appendix). This process was carried out over a period of seven days.

Information required from the questionnaire

This sought to establish:-

- The most misused OTC products
- Aspects responsible for drug misuse and abuse
- Consequences of misuse and abuse of OTC drugs
- The pharmacists' opinion on how to eradicate the misuse and abuse of OTC products

The pharmacists' view of the patterns of misuse and abuse of OTC drugs by the public might not be precise but should be considered statistically significant if a picture of misuse and abuse of OTC drugs in present day Kenya is to be established.

RESULTS

Fifty questionnaires were distributed and collected over a period of one week. All the questionnaires distributed were recovered hence the response was 100%.

TABLE I: RESULTS OF THE STUDY

QUESTION	OBJECTIVE STATEMENT	NUMBER OF RESPONDENTS	PERCENTAGE
1	MOST MISUSED OVER THE COUNTER DRUGS		
	• Painkillers	33	66%
	• Antacids	6	12%
	• Cold and cough preparations	22	44%
	• Anti-malarials	21	42%
	• Antibiotics	18	36%
	• Anti-emetics	0	0%
	• Laxatives	4	8%
	• Anti-allergy creams/ointments	19	38%
2	QUESTIONING OF PATIENTS BEFORE DISPENSING OTC DRUGS		
	• Yes	47	94%
	• No	3	6%
3	ADVISING PATIENTS BEFORE DISPENSING OTC DRUGS		
	• Yes	49	98%
	• No	1	2%
4	PATIENTS SEEKING ADVICE BEFORE PURCHASING OTC DRUGS		
	• Yes	27	54%
	• No	23	46%
5	WHETHER SOME PATIENTS BUY OTC DRUGS UNNECESSARILY		
	• Yes	46	92%
	• No	4	8%
6	MAJOR EFFECT OF DRUG MISUSE AND ABUSE		
	• Failed therapy	17	34%
	• Drug resistance	30	60%
	• Physical and psychological dependence	30	60%
	• Adverse drug reactions	10	20%
7	DOES THE LEVEL OF EDUCATION CORRELATE TO TYPE OF DRUG MISUSED		
	• Yes	35	70%
	• No	15	30%

8	HEALTH CARE SYSTEM TO BLAME MOST FOR MISUSE OF OTC DRUGS		
	• Hospitals • Pharmacies/chemists • Clinics • All systems	3 39 4 13	6% 78% 8% 26%
9	REASONS BEHIND MISUSE AND ABUSE OF OTC DRUGS		
	• Self medication • POM being dispensed as OTC drugs • Physical and /or psychological dependence • Lack of proper advice to patients	27 9 9 35	54% 18% 18% 70%
10	HEALTH SECTOR WITH GREATEST ROLE TO CURB DRUG MISUSE AND ABUSE		
	• Pharmacies/chemists • Hospitals • Clinics • Other e.g. supermarkets, local shops etc	47 2 3 2	94% 4% 6% 4%
11	MEASURES TAKEN ON DISCOVERING A DRUG MISUSE OR ABUSE CASE		
	• Counselling • Withholding of culprit drug • Supplying the drug	41 24 0	82% 48% 0%

DATA ANALYSIS AND RESULTS EVALUATION

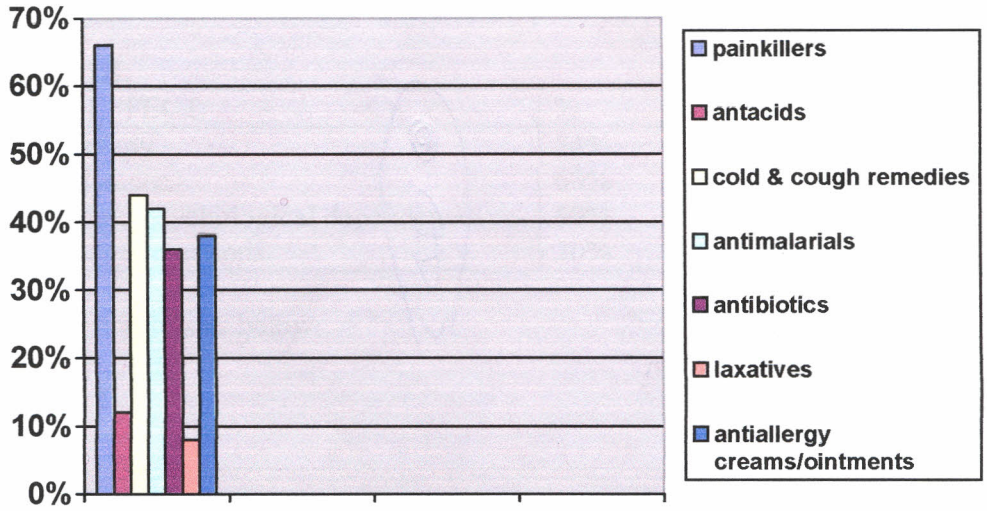
I. The pharmacists' feedback to the most misused OTC products was as follows: -

TABLE II.

OTC PRODUCT	%
Painkillers	66%
Antacids	12%
Cold and cough preparations	44%
Anti-malarials	42%
Antibiotics	36%
Anti-emetics	0%
Laxatives	8%
Anti-allergy creams/ointments	38%

The bar graph is as below:-

GRAPH I.



From the above results, it was discernible that painkillers were thought to be the most misused OTC preparations (66%). 44% of the respondents felt cold and cough preparations were among the most misused OTC products while 42 % chose antimalarials. Antibiotics and anti-allergy creams had a vote of 36% and 38% respectively. From the following information it can be extrapolated that painkillers, cold and cough preparations, antimalarials, anti-allergy creams/ointments and antibiotics are the most misused OTC products in that order. Antacids and laxatives on the other hand have a low incidence of misuse because their tally was 12% and 8% respectively. Anti-emetics show no pattern of misuse which is

possible due to the fact that a need to suppress emesis rarely occurs except in a few occasions like in pregnancy, motion sickness and drug induced vomiting.

II. I was able to establish that most pharmacists question patients before dispensing OTC drugs from pharmacy outlets. 94% of respondents indicated that they clerk patients hence establishing the symptoms the patients are suffering from, any other drugs that they might be taking or any other disease conditions they might be having. Such an approach is critical in the practice of pharmacy to avert life-threatening situations such as severe drug-drug interactions, hypersensitivity to drugs and toxic effects of various drugs in pregnancy. The pharmacist is in a position to monitor purchase of OTC products and counsel patients as appropriate.

III. The study established that not all patients seek advice form pharmacists before purchasing OTC drugs. 54% of the patients go the extra mile and consult the pharmacist for advice regarding the medication they are purchasing while 46% of the patients just go ahead and purchase the products. This underscores the fact that many patients assume that these products are safe despite them having serious health implications. Most respondents (92%) ascertained that some patients buy OTC drugs unnecessarily. The public should be in a position to seek a professional opinion before purchasing OTC products.

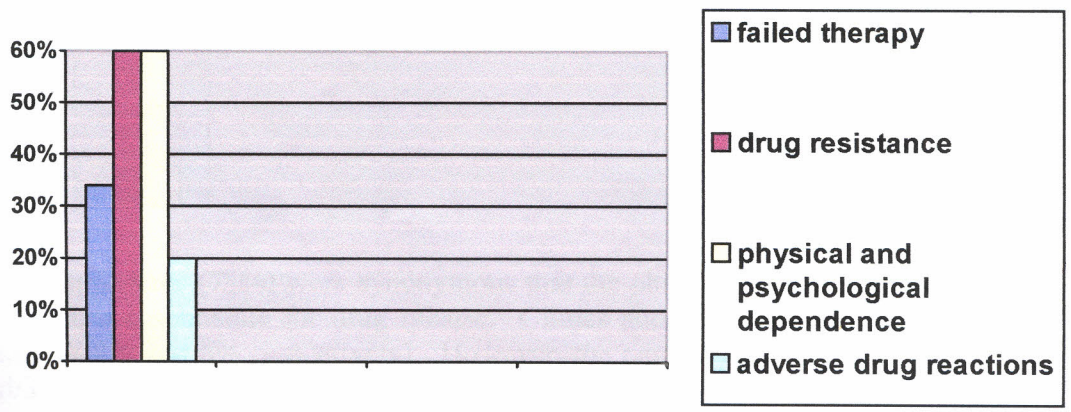
IV. Data for the major effects of drug misuse and abuse was as below: -

TABLE III.

MAJOR EFFECT	%
Failed therapy	34%
Drug resistance	60%
Physical and psychological dependence	60%
Adverse drug reactions	20%

The bar graph is as below:

GRAPH II.



Concerning major effects of drug misuse and abuse, 60% of the respondents considered increased drug resistance and physical and psychological dependence to be the outcome. Failed therapy was voted 34% while adverse drug reactions was voted for by 20% of the respondents. Therefore increased drug resistance and development of physical and psychological dependence are the major consequences of drug misuse and abuse. On the issue of ones level of education correlation to the type of drug one is prone to misuse, 70% of the respondents indicated that education does play a role. This maybe attributed to the fact that many people due to their level of education ask for advice and suitability of the medicines they are prone to misuse prior to purchase.

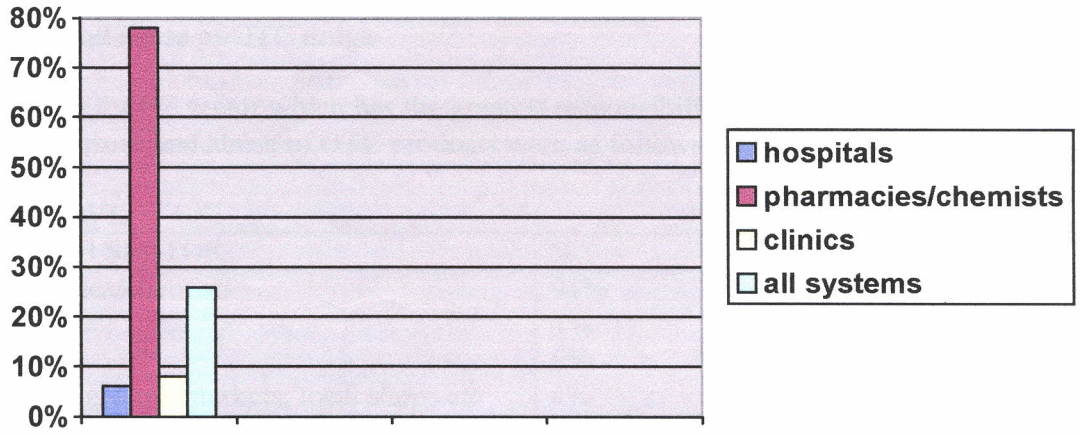
V. The results for the health care system most to blame for the misuse and abuse of OTC drugs is as below:-

TABLE IV

HEALTH CARE SYSTEM	%
Hospitals	6%
Pharmacies/chemists	78%
Clinics	8%
All systems	26%

The bar graph is as below:-

GRAPH III.



Most respondents (78%) were synonymous that the pharmacy needs more stringent controls as it's most responsible for drug misuse. Clinics and hospitals too feature but to a lesser extent (8% and 6% respectively). However, the participation of all health care sectors in curbing drug misuse cannot be overemphasized.

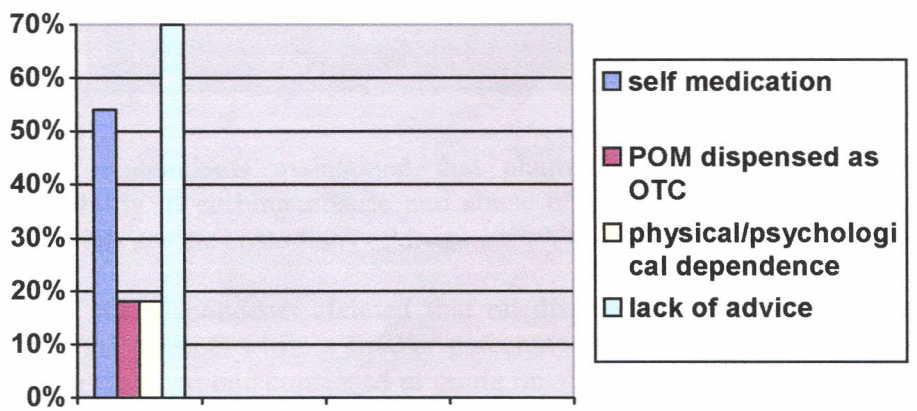
VI. Reasons behind misuse and abuse of OTC drugs had the following response: -

TABLE V.

REASON CONTRIBUTING TO MISUSE AND ABUSE	%
Self medication	54%
POM being dispensed as OTC drugs	18%
Physical and/or psychological dependence	18%
Lack of proper advice to patients	70%

The bar graph is as below:-

GRAPH IV.



Self-medication and lack of proper advice to patients are cited as the most rampant causes of misuse and abuse of OTC drugs.

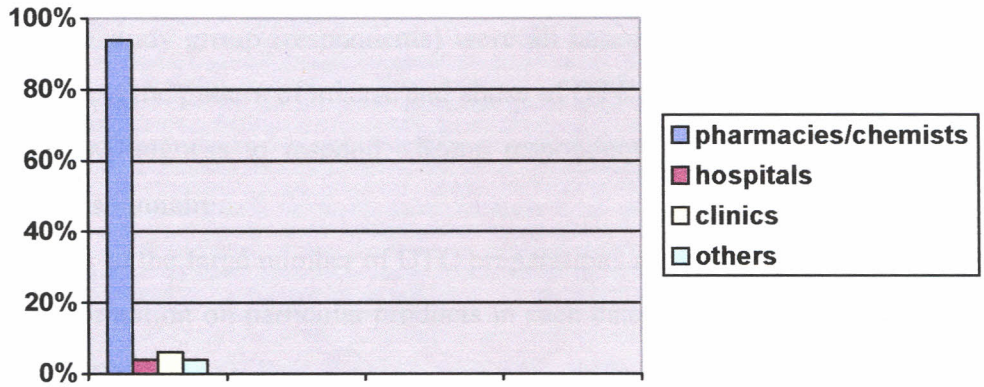
VII. Results for the sector which has the greatest responsibility concerning drug use so as to curb misuse and abuse of OTC products were as follows:

TABLE VI.

HEALTH SECTOR	%
Pharmacies/chemists	94%
Hospitals	4%
Clinics	6%
Others e.g. supermarkets, local shops etc	4%

The bar graph is as below:-

GRAPH V.



94% of respondents maintained that pharmacies and chemists shoulder the greatest responsibility in curbing misuse and abuse of OTC products. This is reasonable because pharmacists are the custodians of drugs.

Most of the respondents claimed that on discovering a drug misuse or abuse case, they counsel the patients while a smaller percentage implied that they withhold the culprit drug. From the data, no one confessed to going on ahead and supplying the drug. As much as the respondents were considered to be telling the truth, we cannot omit the occurrence of such cases. This is wrong, as ethics should always override business acumen.

PROCEDURE EVALUATION

Limitations of the study: -

- The study group (respondents) were all based in Nairobi. The results therefore do not reflect the pattern of misuse and abuse of OTC products in other areas of Kenya.
- Unwillingness to respond. Some respondents had to be really coaxed to answer the questionnaire.
- Due to the large number of OTC preparations available it was not possible to get specific information on particular products in each category of OTC products that are misused or abused.
- The respondents were expected to be honest in their feedback yet incidences of falsehoods could not be excluded.
- Finances and time constraints.

The main problem encountered in carrying out this study is the inability to cover as diverse a population base as possible owing to inaccessibility, budget line and time.

CONCLUSION

Misuse and abuse of OTC drugs has risen in recent times. This pattern has been identified in our country Kenya as well as in the rest of the world. The most misused drugs according to this research are painkillers. According to the South African Community Epidemiology Network on Drug Use (SACENDU) project of 2002, analgesics were the most misused group of OTC drugs. Chronic use of NSAIDS is associated with headaches, gastro-intestinal problems such as ulcers, analgesic nephropathy including renal failure, renal cancers and atherogenesis. Cold and cough preparations, antimalarials, anti-allergy creams/ointments and antibiotics are also major culprit drugs for misuse. Antibiotics and antimalarials are a major concern where resistance develops very fast rendering the drugs less therapeutically effective sometimes to a level where they can not be used in therapy. Cold and cough preparations misuse can often lead to psychological and physical dependence, whereby people use increased amounts of drugs to ensure a sense of well-being while treating unrelated illnesses or health problems or for non-medical purposes. Many medications contain alcohol and narcotics such as codeine which can be addictive and life threatening. Failed therapy is another major effect of drug misuse and thus may get complications of the conditions often leading to: -

- Increased health care cost
- Increased mortality and morbidity
- Increased lost man hours

Anti-allergy creams/ointments showed a high prevalence of misuse. Women normally misuse them for cosmetic purposes (as skin lighteners). They are also used in the treatment of acne and to handle inflammatory skin conditions which can respond to other less potent drugs.

Self-medication was cited to be rampant and is a major contributor to misuse of OTC products. This is probably due to the fact that most of the Kenyan population falls below the poverty line hence cannot afford consultation costs. Lack of proper advice to patients is probably the single greatest cause of drug misuse and abuse. All respondents agreed that the best way to curb misuse and abuse of OTC products lies in educating the public on the perils of drug misuse and abuse and the need to seek medical advice instead of irrational self-medication. Many people who attempt self-medication are usually learned and tend to think they understand what is happening to them hence opt for self-medication.

All the respondents agree that the pharmacy contributes the largest extent to misuse and abuse of OTC drugs. Hospitals and clinics were also implicated but to a lower extent. It's worth noting that most pharmacies are not ran as a practices but as ruthless business with total disregard of code of ethics largely as they employ incompetent staff and lack qualified pharmacists. The authorities are to blame for not enforcing chapters 244 and 245 of the Kenya Law. The Pharmacy and Poisons Board is also to blame for lack of self regulation to weed out people engaged in malpractices.

Most respondents in community pharmacies claim to give advice to members of the public as they purchase OTC drugs. Many resident pharmacists do indeed offer counsel to their clients but this is not always the case with lower cadres of staff e.g. pharmacy assistants. It's only logical to say that many people have no time to counsel unless the patient asks and that it's the pharmacists who have the relevant knowledge to offer comprehensive counselling. Unfortunately the ratio of pharmacists to members of the public is disturbingly low which might explain why many community pharmacies lack superintendent pharmacists.

RECOMMENDATIONS AND INTERVENTIONS

The use of OTC drugs needs regulation if rational use is to be achieved. Recommendations for strict regulation of pharmacy practice include: -

- Strict enforcement of rules and regulations covering pharmacy practice by the Pharmacy and Poisons Board (PPB) and the Ministry of Health. The rules and regulations should be reviewed continuously to meet current international standards.
- Self regulation by the professional body, which is the Pharmaceutical Society of Kenya (PSK).
- Review of the current code of ethics governing the practice of pharmacy as the current one is outdated and inconsistent with the current trends. It should be tailored to suit the Kenyan situation.
- Strict regulation of the qualifications of people working in pharmacies and their job description.
- A campaign by the Ministry of Health and non-governmental agencies on drug misuse and abuse targeted at health care providers and members of public.
- Closure of all pharmacies and chemists which fail to meet operation criteria and institution of punitive measures for persons caught running such outlets.
- As data obtained from pharmacists is unlikely to reflect the extent to which OTC drugs are used by the general population, future research can invest in community based studies that provide further information on the nature and extent of OTC drug misuse and abuse.

POLICY IMPLICATIONS

A number of policy issues related to OTC drug misuse and abuse need to be considered. These include: -

- Developing treatment protocols for OTC drug misuse and abuse.
- Establishing protocols for general practitioners, pharmacists and other health workers that provide guidelines for the identification, management and referral of people who misuse and abuse drugs.
- Raising public awareness about the health risks associated with medicine misuse.
- The potential re-scheduling of codeine-containing OTC preparations should be debated.

APPENDIX I

REFERENCES

1. ESSENTIALS OF MEDICAL PHARMACOLOGY – BY K.D. TRIPATHI 4TH EDITION.
2. A GUIDE TO THE MANAGEMENT OF COMMON ILLNESS – BY ALISON BLENKINSOPP & PAUL PAXTON 2ND EDITION.
3. BASIC AND CLINICAL PHARMACOLOGY – BY B.G. KARTZUNG 8TH EDITION.
4. BRITISH NATIONAL FORMULARY – NUMBER 35.
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6. PHARMACOLOGICAL BASIS OF THERAPEUTICS – BY GOODMAN & GILLMAN 8TH EDITION

APPENDIX II
SPECIMEN QUESTIONNAIRE
QUESTIONNAIRE TO PHARMACISTS/PHARMACY ASSISTANTS

USE OF OVER THE COUNTER DRUGS

TICK (✓) WHERE APPLICABLE .

1. Of the following over the counter drugs, which class of products do you think are most misused?
   - (a) Painkillers ☐
   - (b) Antacids ☐
   - (c) Cold and cough preparations ☐
   - (d) Anti-malarials ☐
   - (e) Antibiotics ☐
   - (f) Anti-emetic drugs ☐
   - (g) Laxatives ☐
   - (h) Anti-allergy drugs e.g. creams and ointments ☐
2. Do you ask patients questions before dispensing over the counter drugs e.g. what their symptoms are, any other drugs that they might be taking or any other disease condition they might be having?
   (a) Yes ☐ (b) No ☐
3. Do you give advice to the patients before dispensing over the counter drugs e.g. about side effects and drug interactions etc?
   (a) Yes ☐ (b) No ☐
4. Do the patients ask for any advice concerning the drugs before buying them?
   (a) Yes ☐ (b) No ☐
5. Do you think that some patients buy over the counter drugs unnecessarily?
   (a) Yes ☐ (b) No ☐
6. What do you consider as the major effect of drug misuse and abuse?
   - (a) Failed therapy ☐
   - (b) Increased drug resistance ☐
   - (c) Physical and Psychological dependence ☐
   - (d) Drug induced diseases or adverse drug reactions ☐

7. Do you think that the level of education correlates to the type of drug one is prone to misuse?

   (a) Yes ☐ (b) No ☐

8. Which health care delivery system do you think is the most to blame for drug misuse?

   (a) Hospitals ☐

   (b) Pharmacies/chemists ☐

   (c) Clinics ☐

   (d) All systems ☐

9. What do you think contributes most to drug misuse and abuse?

   (a) Self medication ☐

   (b) Laxity when prescription only medicines are dispensed as over the counter drugs. ☐

   (c) Physical and/or psychological dependence ☐

   (d) Lack of proper advice to the public concerning drugs. ☐

10. Which sector has the greatest responsibility concerning drug use so as to curb drug misuse and abuse?

    (a) Pharmacies/chemists ☐

    (b) Hospitals ☐

    (c) Clinics ☐

    (d) Others e.g. supermarkets, local shops etc. ☐

11. What measures do you undertake on discovering a drug misuse or abuse case?

    (a) Counselling ☐

    (b) Withholding of culprit drug ☐

    (c) Going on ahead and supplying the drug ☐

12. Give suggestions on possible solutions to the misuse and abuse of over the counter drugs?

    _____

END