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**SELF-MEDICATION AMONG UNIVERSITY STUDENTS OF LAHORE, PAKISTAN**

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**ABSTRACT**

**Introduction:** Self-medication is a global phenomenon in which individual takes a drug or a substance for the treatment of self-diagnosed ailment. **Methodology:** We conducted a survey on self-medication of students of University of Central Punjab in Lahore. 50 survey forms were completely filled. The data collected was entered and processed on IBM SPSS statistics, version 21.0. According to this survey we discussed the advantages and disadvantages of self-medication. And we took a brief insight on self-medication related problems and how to overcome those problems. **Results:** Among these students most of them were using OTC drugs as a form of self-medication. Like analgesics, antipyretic and antibiotics. And they were getting these drugs without prescriptions. Most of them have easy access to health care clinics. They were using self-medication as per as their previous experience to treat ailment. According to this survey self-medication has its own advantages such as easy access to medicines, helps to prevent the ailments that do not require a doctor. But the adverse consequences of such practices should always be emphasized to the community and take steps to curb it. **Conclusion:** This review focused on the self-medication of allopathic drugs, their use, its safety and reason for using it. It

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would be safe, if the people who are using it, have sufficient knowledge about its dose, time of intake, side effect on over dose, but due to lack of information it can cause serious effects such as antibiotic resistance, skin problem, hypersensitivity and allergy. There is need to augment awareness and implement legislations to promote judicious and safe practices. Improved knowledge and understanding about self-medication may result in rationale use and thus limit emerging drug resistance or toxicity issues.

**Keywords: Self-Medication, Hypothesis of Self-Medication, Importance, OTC Drugs**

## INTRODUCTION

**Self-medication** is a human behavior in which an individual uses a substance or any exogenous influence to self-administer treatment for physical or psychological ailments.

The most widely self-medicated substances are over-the-counter drugs and dietary supplements. The psychology of self-medicating with psychoactive drugs is typically within the specific context of using recreational drugs, alcohol, comfort food, and other forms of behavior to alleviate symptoms of mental distress, stress and anxiety, including mental illnesses and/or psychological trauma, is particularly unique and can serve as a serious detriment to physical and mental health if motivated by addictive mechanisms.

Self-medication is often seen as gaining personal independence from established medicine, and it can be seen as a human right, implicit in, or closely related to the

right to refuse professional medical treatment. [1-6]

Generally speaking, self-medication is defined as "the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms"

### Recognizing Forms of Self-Medication

Depression is classified as a mood disorder. It's associated with feelings of sadness, loss, and anger. When someone is depressed, these symptoms restrict their everyday life. Treating depression is important and usually involves counseling, medication, or both.

However, not everyone seeks professional help to treat their depression. Some try coping with their symptoms on their own. One way this happens is through self-medication. This can be dangerous and cause far greater problems than simply not getting treatment from trained medical professionals.

### The Self-Medication Hypothesis

The idea that substance abuse can be a form of self-medication is formally known as the self-medication hypothesis. According to the American Journal of Psychiatry, this hypothesis was introduced in 1985. It states that alcohol and drug abuse is often used to cope with a variety of mental health conditions, including depression. It also suggests that people gravitate toward the substance that best medicates their particular condition.

However, not everyone agrees with this hypothesis. While it claims that people use substances as a response to mental illness, some say using substances to self-medicate can lead to symptoms of mental illness. For example, the Anxiety and Depression Association of America says that alcohol and other substances can make anxiety symptoms worse.

Whether it's the cause or an effect, self-medication can impact mental health. Recognizing forms of self-medication can help people understand how substance abuse is related to depression and other mental conditions.

#### ❖ Self-Medicating with Food

**Risks:** decreased self-esteem, worsened depression symptoms

If you're an emotional eater, you might self-medicate with food. Emotional eating is

when food is used as a way to suppress or soothe negative emotions. This practice is also called "binging."

"Comfort eating" may temporarily reduce stress in those who aren't clinically depressed, a recent study showed. However, binge eating is not a healthy way to treat depression. It can negatively impact self-esteem and make symptoms of mental illness worse.

#### ❖ Self-Medicating with Alcohol

**Forms:** beer, wine, liquor

**Risks:** addiction

In low doses, alcohol can temporarily relieve symptoms of depression. However, when used as regular treatment, it can lead to alcoholism, which worsens depression. Additionally, alcoholism requires months of recovery and can be extremely difficult to overcome.

Post-traumatic stress disorder (PTSD) is another condition that frequently results in self-medication with alcohol. Research shows that trauma is often linked to alcohol abuse.

#### Self-Medicating with Psychostimulants

**Forms:** cocaine, amphetamines

**Risks:** heart failure, death

People with mental health conditions often abuse psychostimulants such as cocaine and amphetamines. This is most likely due to the feelings of euphoria these drugs can cause.

However, cocaine can also cause addiction and depression.

Cocaine is considered a life-risking drug. It can be fatal when used as a recreational drug. Cocaine does major damage to the body's cardiovascular system. Common cocaine-related deaths occur as a result of sudden heart failure. Amphetamines speed up the function of the heart and carry the risk of a stroke.

Using these substances may distract from depression, but the "come-down" feeling after the drug has worn off hardly makes it an effective long-term solution for depression. In fact, cocaine users often find that it worsens their symptoms.

#### ❖ Self-Medicating with Caffeine

**Forms:** coffee, tea, energy drinks

**Risks:** increased feelings of depression and anxiety

Caffeine is a stimulant that comes in many forms such as coffee and tea. While coffee is popular for its ability to perk you up, the effects are only temporary. Once the high wears off, your insulin levels drop, creating feelings of confusion and depression. Caffeine can also heighten feelings of anxiety. One cup of coffee per day is recommended if you're sensitive to the effects of caffeine.

#### ❖ Self-Medicating with Cannabis

**Forms:** marijuana

**Risks:** worsened symptoms of depression, legal consequences

Cannabis is the most widely used illicit substance among those with depressive disorders. It has been found effective in treating depression in small doses. However, too much marijuana can worsen symptoms of depression.

Aside from that, marijuana is still illegal in most states. There may be legal consequences to using marijuana to self-medicate.

#### ❖ Self-Medicating with Opiates and Opioids

**Forms:** codeine, heroin, methadone

**Risks:** worsened depression symptoms, death  
Opiates are drugs derived from the poppy plant, including codeine and morphine. Any drug that mimics the effects of opiates is called an opioid. Opioids include heroin, oxycodone, and methadone.

The World Drug Report estimates that up to 32.4 million people worldwide use opiates and opioids annually. Depression is common among users of these drugs. When depression and opiate use or abuses are combined, the results can be deadly. [7]

**The increasing importance of self-medication**

The role of the pharmacist has been changing over the past two decades. The pharmacist is no longer just a supplier of medicines and a concocter of medicinal products, but also a team member involved in the provision of health care whether in the hospital, the community pharmacy, the laboratory, the industry or in academic institutions.

Pharmaceutical care is growing in importance with the challenges of self-care. For pharmacists, their greater involvement in self-care means greater responsibility towards their customers and an increased need for accountability.

The increase in self-care is due to a number of factors. These factors include: socioeconomic factors; lifestyle; ready access to drugs; the increased potential to manage certain illnesses through self-care; public health and environmental factors; greater availability of medicinal products; and demographic and epidemiological factors.

#### ❖ **Socioeconomic factors**

Growing empowerment, resulting from improved educational levels and greater access to information, combined with increased individual interest in personal health, is resulting in growing demand for direct participation in health care decisions.

#### ❖ **Lifestyle**

Awareness has increased of the impact of certain lifestyle factors - such as avoidance of smoking and keeping to a well-balanced diet - on maintaining health and preventing illness.

#### ❖ **Accessibility**

Consumers prefer the convenience of readily available of medicinal products to long waiting times at clinics or at other health facilities. In many countries, however, such availability may mean paying higher prices.

#### ❖ **Management of acute, chronic and recurrent illnesses, and rehabilitation**

It is now recognized that certain medically diagnosed conditions may be appropriately controlled by self-medication, or no medication at all. Indeed, in some countries this may a necessity rather than a choice.

#### ❖ **Public health and environmental factors**

Good hygiene practices and appropriate nutrition, safe water and sanitation have contributed to the capacity of individuals to establish and maintain their health, and prevent illness.

#### ❖ **Demographic and epidemiological factors**

Demographic transition towards a more elderly population is requiring changes in health policy and delivery. Likewise,

epidemiological factors arising from changing disease patterns are necessitating adaptation of primary health care provision and funding. These changes and adaptations include enabling individuals to assume greater responsibility for their health care needs. This in turn means increasing individuals' capacity for self-care.

#### ❖ **Health sector reforms**

In the midst of declining economic activity and resources, governments and other third-party payers and individuals worldwide are grappling with escalating health care costs. Many countries are establishing mechanisms whereby these costs can be contained and health care made more cost-effective. Worldwide, self-medication is being promoted as a means of reducing the health care burden on the public budget. Structural changes including increased reliance on private sector delivery are also increasingly being put in place.

#### ❖ **Availability of new products**

New, more effective products, which are considered suitable for self-medication, have recently been developed. In addition, many long-established products with a good safety profile have been rescheduled as over-the-counter products; for example: topical and oral imidazoles for vaginal candidiasis; topical fluorinated steroids for hay fever;

acyclovir for cold sores; H-2 blockers for prevention of heartburn; H1-agonists for asthma. In other words, they will be available without prescription.[8-13]

In conclusion, self-medication can facilitate access to medicines and reduce health care costs. But more specific studies are needed to evaluate the impact and role of self-medication in the diversity of settings of different health care sectors. The combined efforts of industry and regulators must meet the expectations of consumers by providing products which are safe, effective, good value for money, and accompanied by complete and relevant information. High ethical standards should be applied to the provision of information, promotional practices and advertising. The content and quality of such information and its mode of communication remains a key element in educating consumers in responsible self-medication. [14-17]

#### **METHODOLOGY**

The survey on self-medication was conducted at "University of Central Punjab". The sample population chosen was that of students only. The survey form was prepared with the help of previous research articles and data present on the internet. About 20 questions on self-medication and evaluation

of its effectiveness, as well as the general views based on students' experience were asked. 50 survey forms were completely filled. The data collected was entered and processed on IBM SPSS statistics, version 21.0. The frequency and percentage value

tables were converted into graphs which depicted what options the majority of students selected and which option was least preferred. The results were then analyzed.

**RESULT**

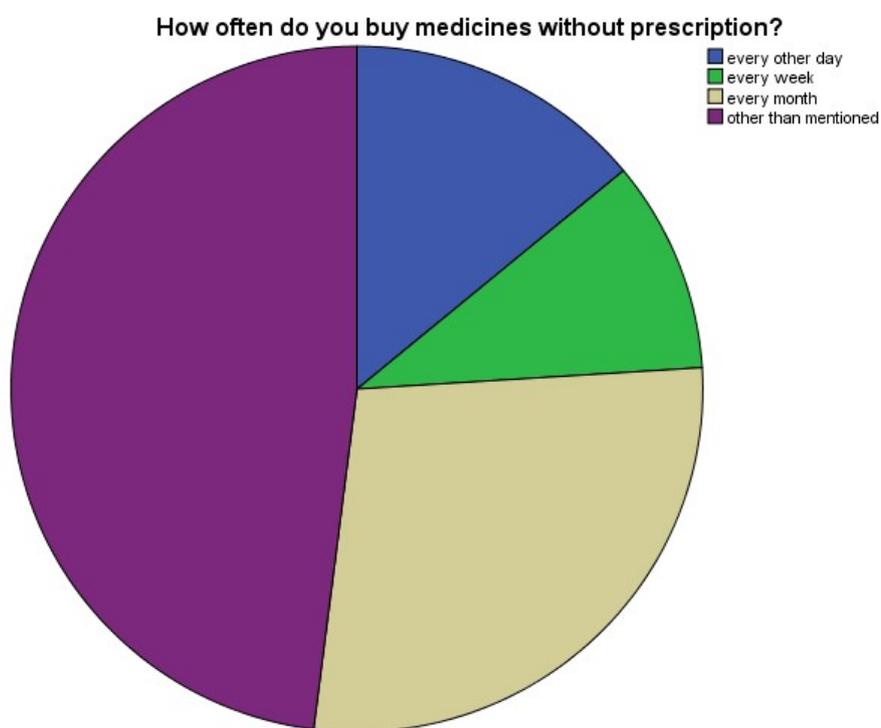


Figure 1

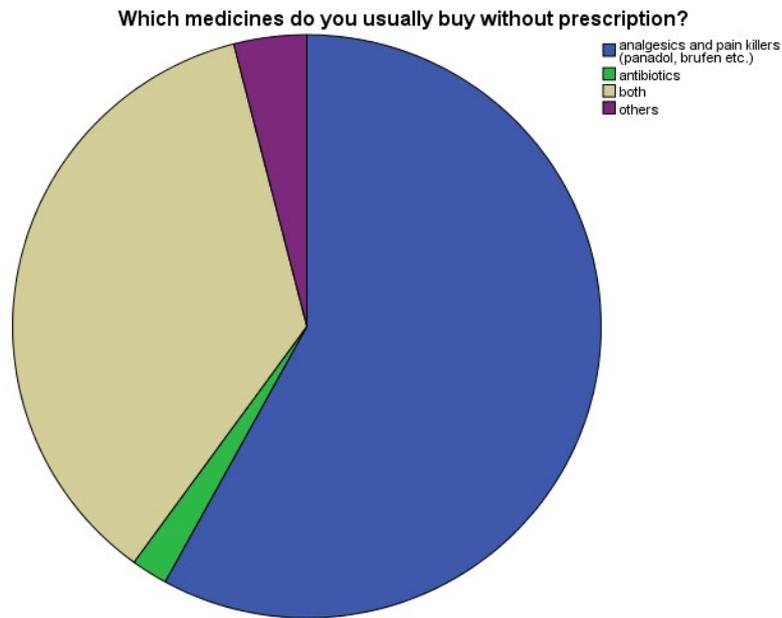


Figure 1

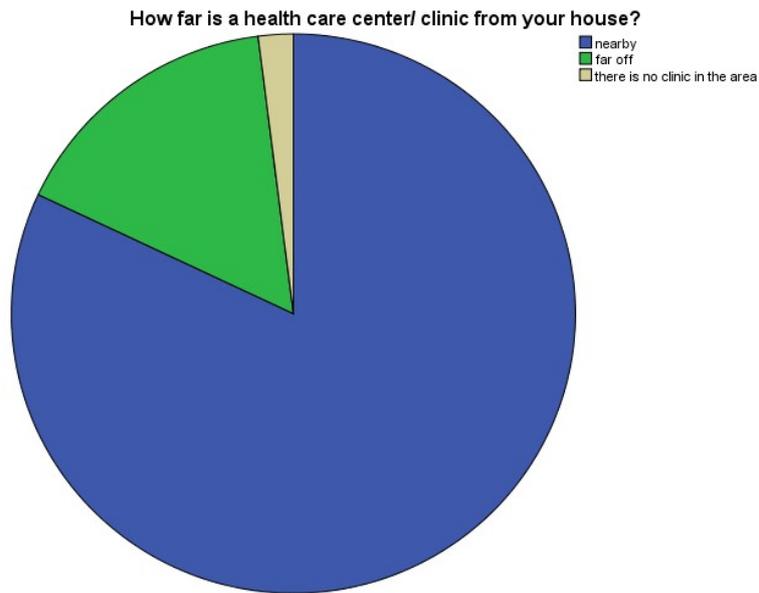


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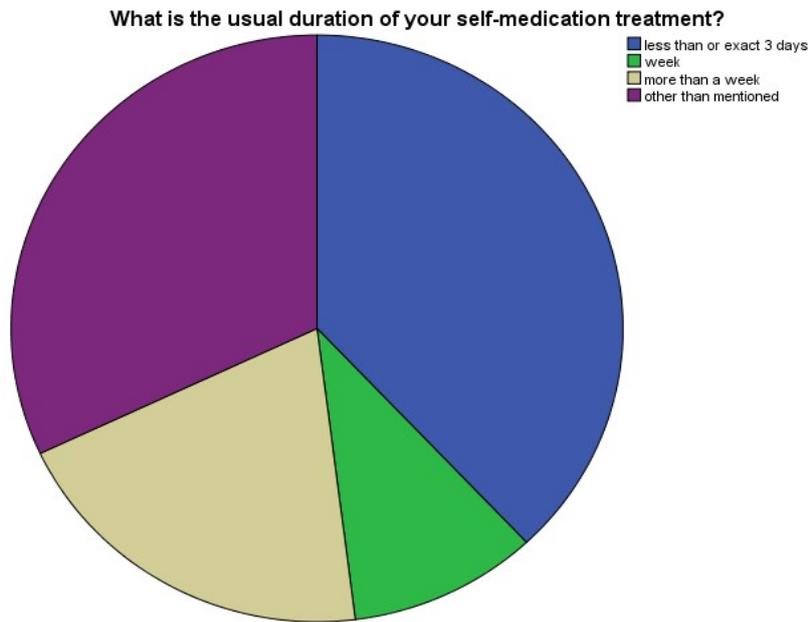


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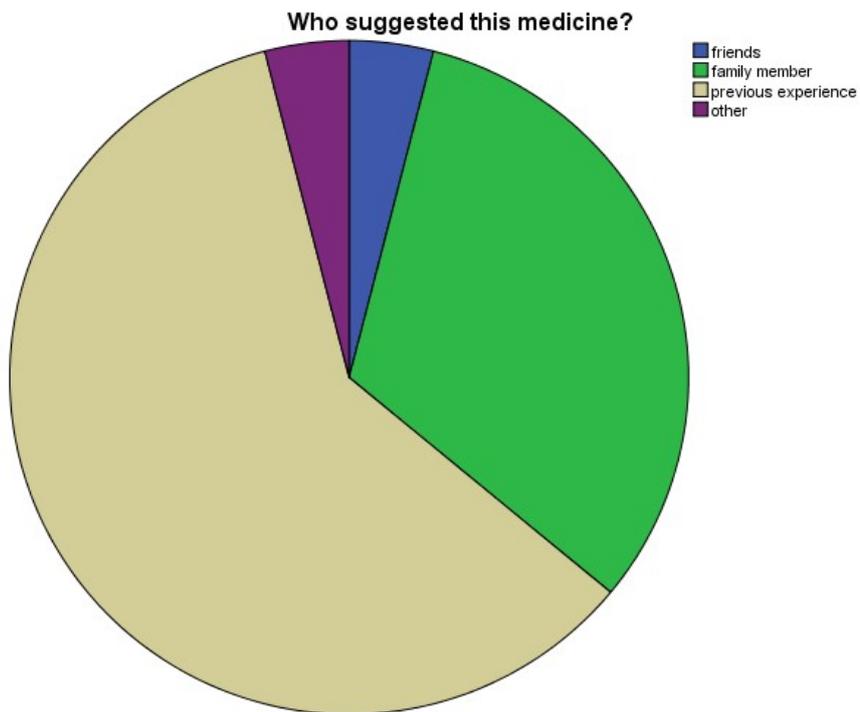


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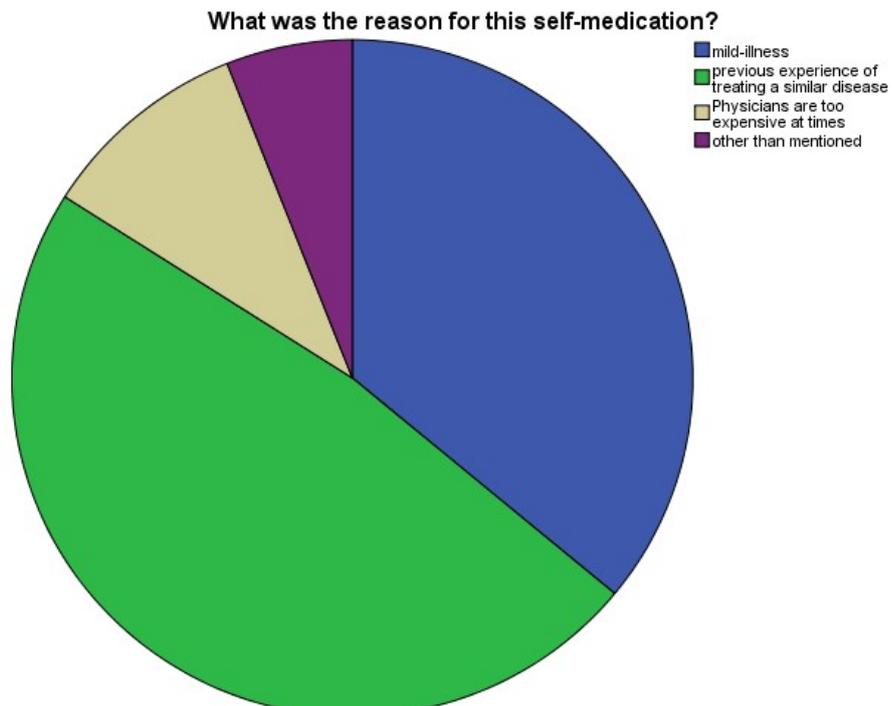


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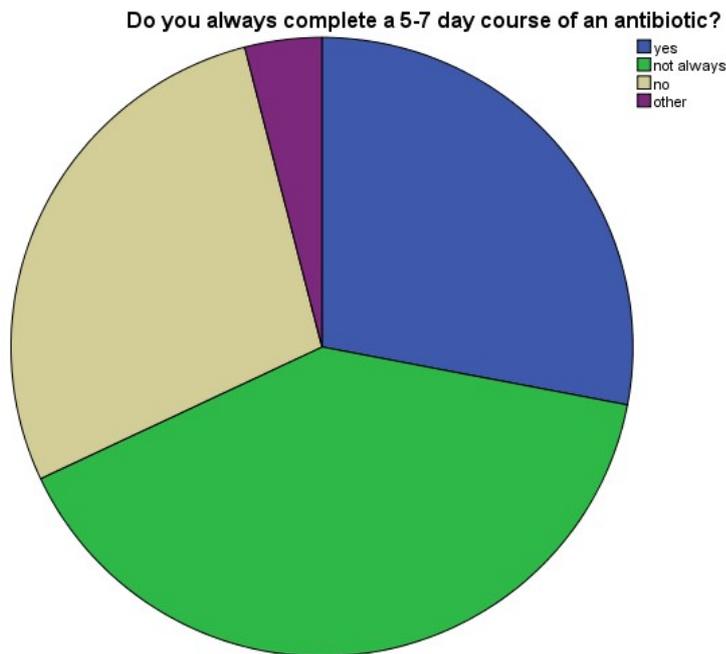


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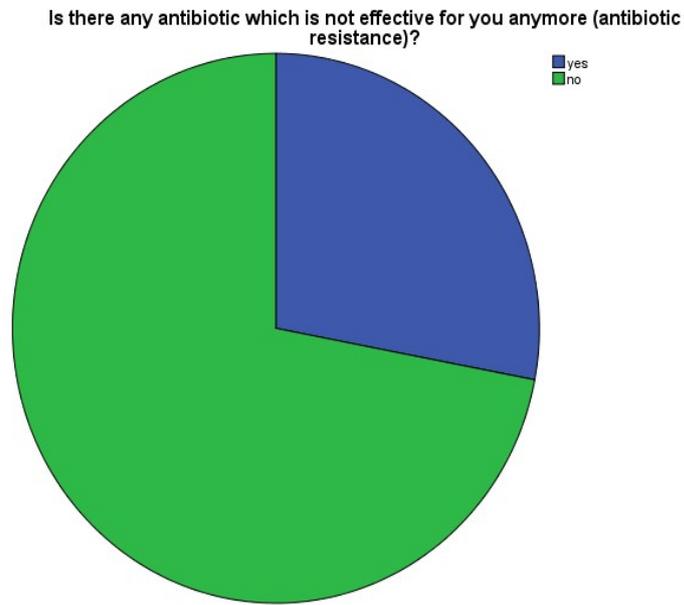


Figure 7

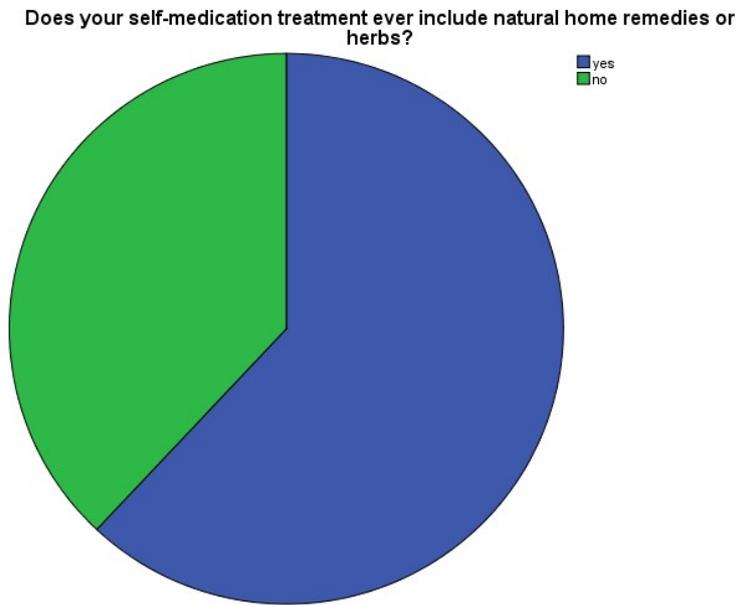


Figure 9

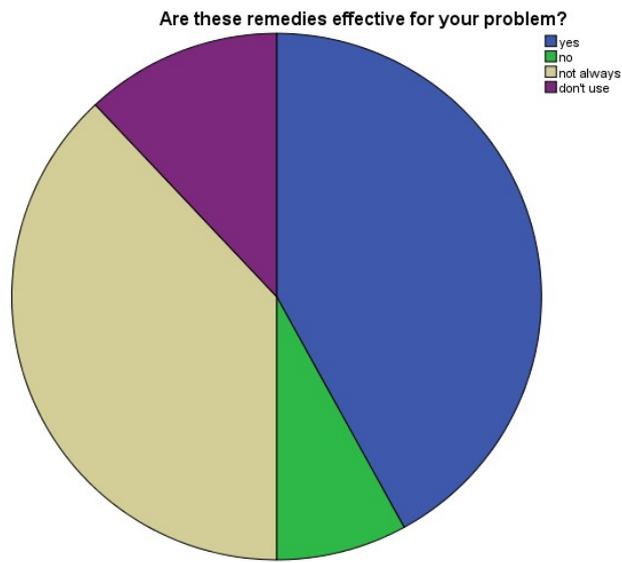


Figure 8

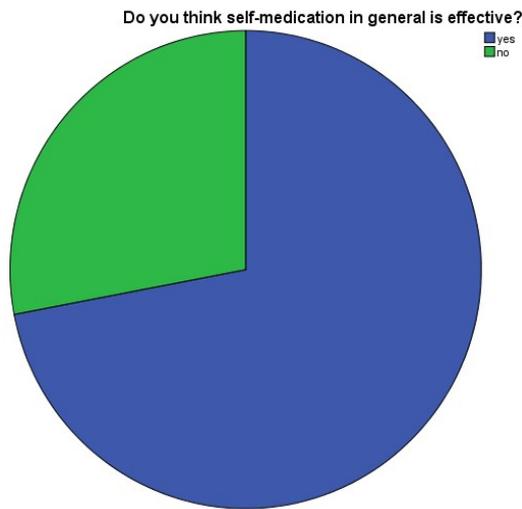


Figure 9

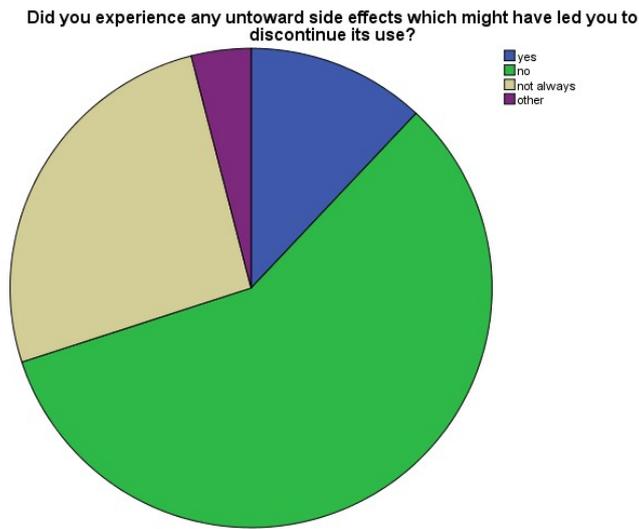


Figure 10

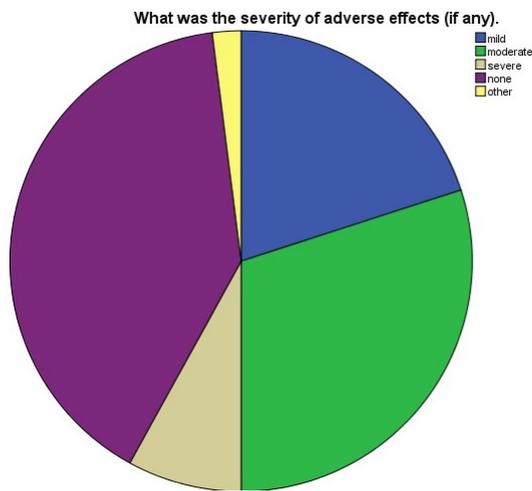


Figure 11

Did you ever take anti-anxiety medication, sedatives (sleep inducing) or anti-depressants without prescription?

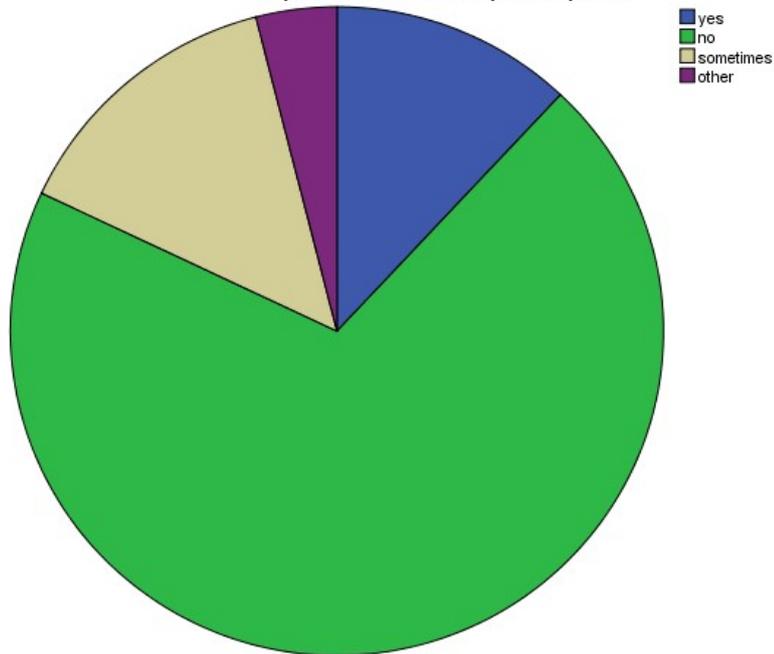


Figure 12

Have you ever felt a physical or psychological dependence (or addiction) with any of the medicines you use without prescription?

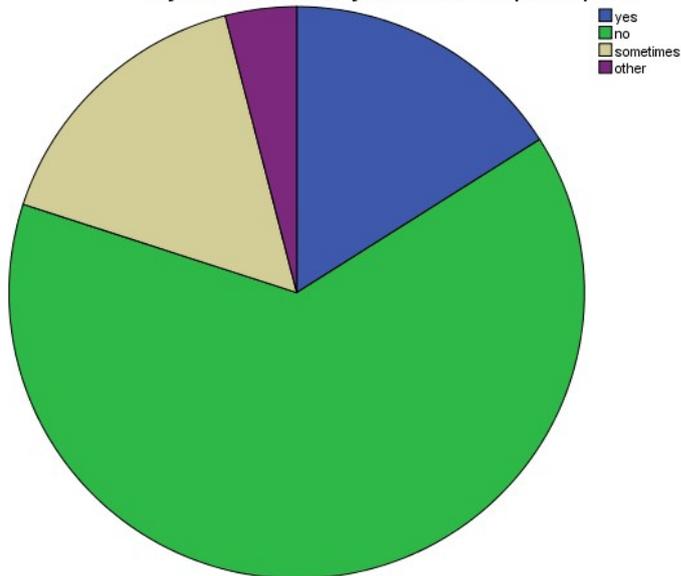


Figure 13

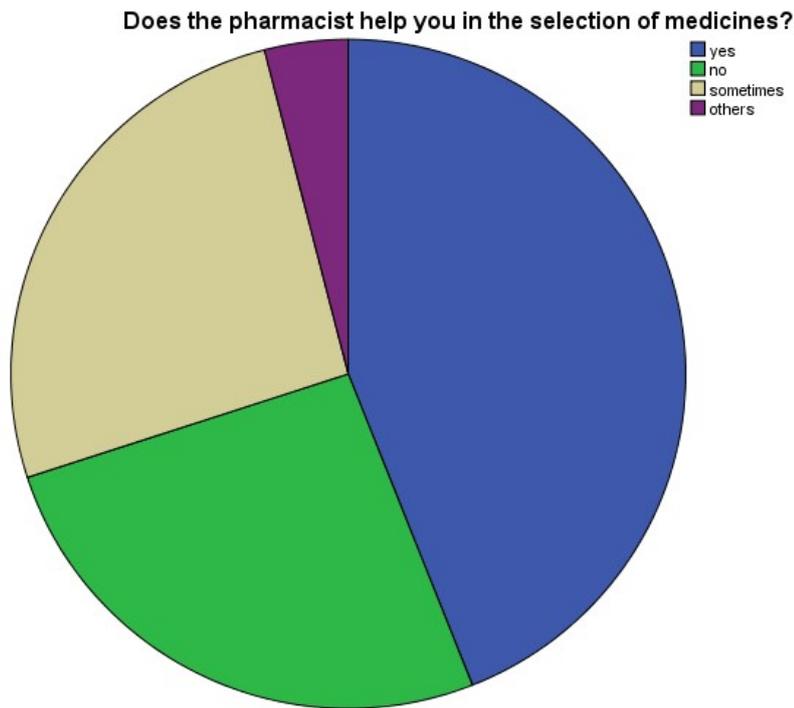


Figure 14

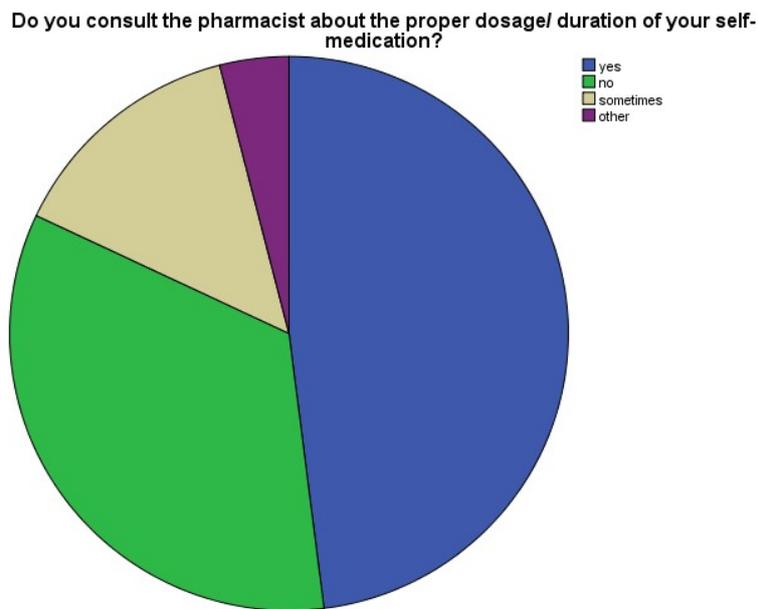


Figure 15

Do you think it is important for people to always have complete information about the medicine before taking it?

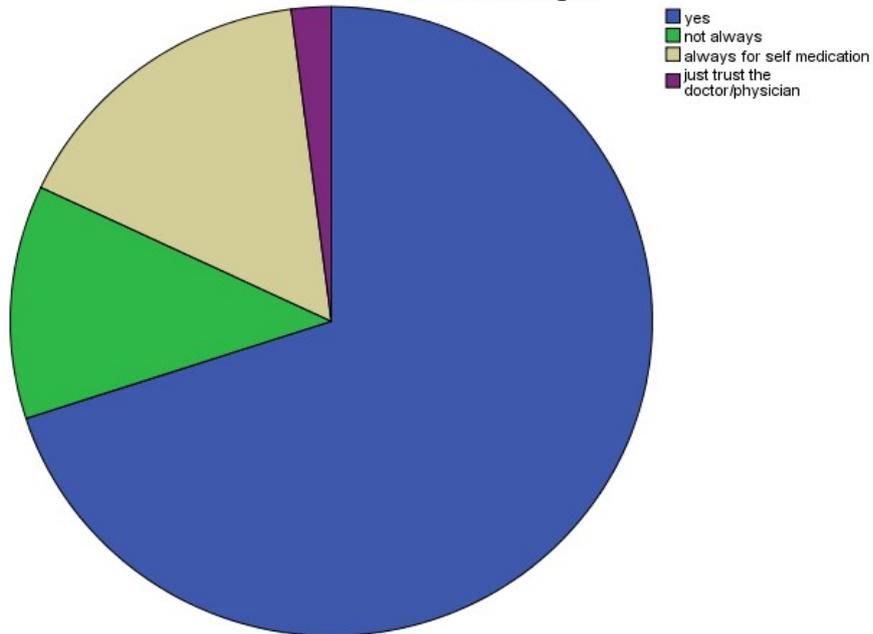


Figure 16

Do you think medicines should be available without prescription?

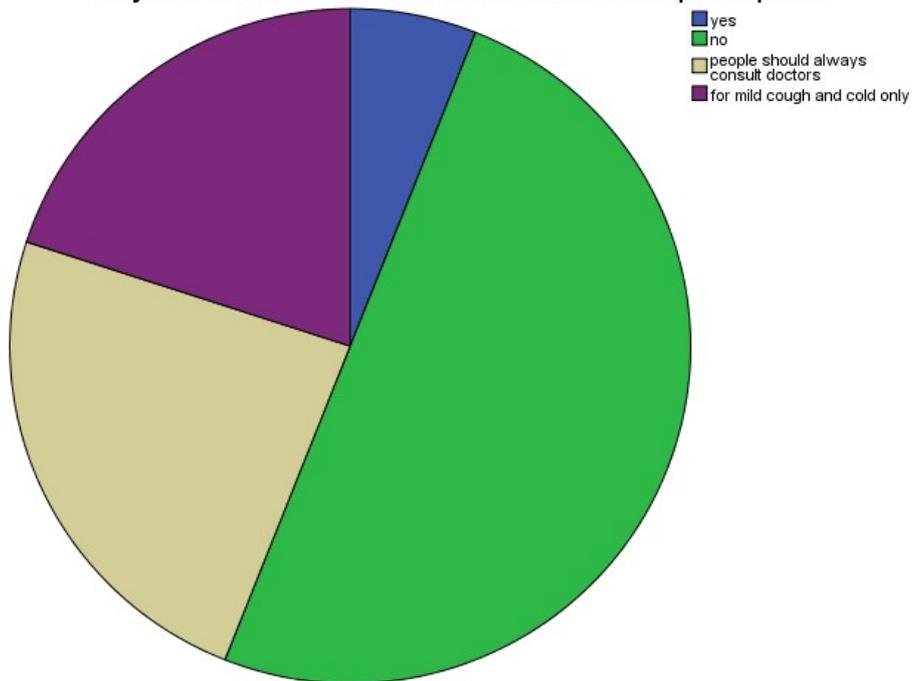


Figure 17

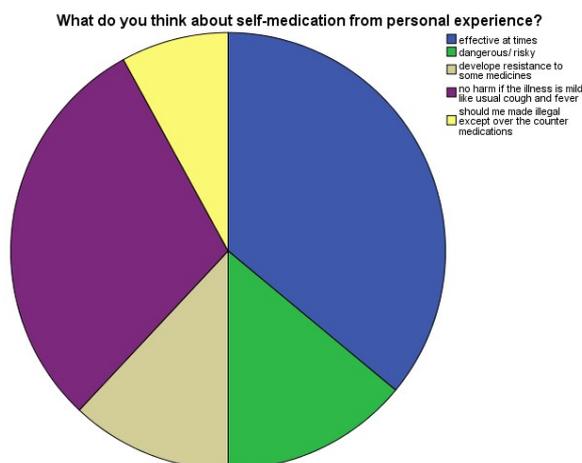


Figure 18

## CONCLUSION

Nowadays, our society is facing many health hazards. As a result, many of the people tend to use medicines and drugs without consulting a physician or doctor. Self-medication has become a common practice and might be a potential cause of drug misuse, over-use and under-use.

A survey was conducted at the “UNIVERSITY OF CENTRAL PUNJAB, LAHORE” to assess the practice of self-medication, its effectiveness and harmful effects experienced by students. If the risks and harmful effects out-weigh the benefits and effectiveness, action can be taken to promote awareness and correct use of medicines.

In this survey we learnt that 48% of the students do not practice self-medication whereas 28% do every month. 58% of the students who practice self-medication use

OTC drugs like pain killers and 36% use both anti-biotics and pain killers. Of these 82% have a clinic nearby which shows that unavailability of a health center nearby does not contribute to self-medication. 38% of the people tend to use these medicines for less than 3 days i.e. they minimize the duration of treatment. 60% of the people use medicines from previous experience of same illness while 32% are suggested these medicines by family member. Previous experience of the same illness is the major cause of self-medication as they tend to use previous prescriptions or relay on their memory, while the next major reason is mild-illness. The sample population contains 40% of students who do not always complete their antibiotic course which leads to drug misuse. 72% do not have antibiotic resistance despite the frequent non-completion of course. 62% of the sample population use natural remedies

and herbs from which 42% believe them as being effective. 72% believe self-medication as being effective in general and 40% did not experience any adverse effects, while those who had moderate adverse effects were 30% and mild adverse effects were 20%. 58% did not experience any effects which led to discontinuation of the medicine. A majority did not use anti-depressants and anti-anxiety drugs without prescription, neither did they experience any dependence or addiction. 44% are helped by the pharmacist in selection of drugs while 48% confirm the dosage/duration of their treatment by the help of a pharmacist, which apparently reduces the risk of misuse. 70% of the population believes that complete information about the medicine is necessary for the patient before taking it and only 2% completely trust the doctor. Despite the fact that majority (72% as mentioned above) believes that self-medication is effective, 50% say that medicines should not be available without prescription. A concluding view about self-medication from this survey shows that majority of the student population of UCP believe it as often effective, while most say there is no harm if the illness is mild, and very few i.e. only 8% are of the view as to legalize self-medication.

A comparative study of this research with that of other cities of Pakistan has also been done. A comparative study with self-medication amongst university students of Karachi shows that 76% practice self-medication where as in our research only a small number of students practice self-medication while 48% do not. The results pertaining to the most commonly used drugs were similar as well as the indications. The most commonly used medicines were analgesics and anti-pyretics used for mild problems like headaches, fever etc. Another study on over-the-counter availability of antimicrobial agents, self-medication and patterns of resistance in Karachi, Pakistan showed that 91.4% of antibiotic treatments are arranged by the physician and only 6.3% were used as self-medication, whereas in our study 36% use both analgesic and antibiotic as self-medication and 2% take only antibiotics as self-medication. However, our research shows that majority did not experience any resistance to antibiotics whereas in Karachi high resistance was associated with ampicillin, co-trimoxazole, chloramphenicol and erythromycin.

A comparative study with evaluation of self-medication amongst university students in Abbottabad, Pakistan showed that 95.5% students practiced self-medication whereas in

our study only a small number practiced self-medication. Here, the common factor explained was low ruthlessness of the disease, while this was the second most chosen factor in our study (previous exposure to similar disease being the first one). 22.7% of defendants got addicted as a result of self-medication whereas our study shows that only 16% experienced such a dependence while 64% experienced none. Most of the students believe in allopathic medicine system while in our survey a majority relies on herbal and natural remedies as first line of therapy.

Another comparative study with the self-medication practice among first year medical students in University College of Medicine and Dentistry, University of Lahore showed that 72% of students practice self-medication. In our survey mostly did not but the differentiating factor here is that the students of medical are more well aware of the medicines and their effects as compared to students chosen in our study who did not belong to medical or related fields. 42% used antibiotics as self-medication while our study shows that mostly use analgesics and pain-killers. A majority believed saving time as a leading factor in self-medication while our population believed previous experience of treating a similar disease as a major reason.

A similarity here is that 65% students believed self-medication was helpful and caused them to recover which correlated to our results showing that majority approve of self-medication's effectiveness. Only 4% developed complications.

A cross sectional study on self-medication with analgesics among pharmacy students of Lahore, Pakistan showed that 78% of students practiced self-medication in contrast to our study. Again, the differentiating factor is that the population we chose for the study did not have sufficient knowledge about medicines unlike in this study where the population chosen is that of pharmacy students. A major similarity with our results is that the reason for the self-medication with analgesics was the previous experience of the students to elevate pain and previous recommendation by physician. The most common drug used was paracetamol corresponding to our study results showing analgesics as the most commonly used drug. The students believed that it was necessary to consult a doctor only before taking a new medication.

## **DISCUSSION**

This study on self-medication and its different factors was conducted on a selected target population of 'University of Central Punjab'. The students of the university were

randomly requested to fill the questionnaire. They belonged to different fields but none of them had medical knowledge or information about drugs.

Limitations of this study include the small number of survey forms filled. 50 questionnaires were filled for data processing. This small number might not help portray the general views of the whole University which has a huge population. A larger number of questionnaires filled would have improved the study. Another limitation is that the student population was generalized, that is, they belonged to different fields and had varying knowledge about medicines. Hence, the uniformity in data may have been compromised. The questionnaire contained 20 general questions. An increase in the number of question may have affected compliance of the students but would have made the study of self-medication deeper.

The study was limited to only one University which restricts the data collected whereas if the study was conducted from different Universities and colleges and then compared, the results could have been improved with respect to a larger target population. Student population chosen from a particular field, for example medical or dentistry or business may have brought more uniformity in the

quality of data as all the students would have more or less the same amount of knowledge regarding medicines and the data would have been more homogeneous. Furthermore, a combined study of the same college in different cities of Pakistan would have widened the scope of this research to a national level but due to lack of communication and transport for us this was not possible.

The study would have been more effective and accurate if the data from different pharmacies would have been collected on the percentage of people coming without prescription and taking medicines with or without the help of the pharmacist. Gender distribution was also lacking from this study and would have been improved and made specific if the distribution of self-medication practices amongst male and female students was analyzed.

As this study was done in just one University setup, it cannot be generalized or applied to other populations belonging to different socio-economic or cultural setups. More studies amongst various populations are needed to provide a better picture regarding the benefits and risks of self-medication.

Drug-information centers should be operational in various community setups in the city. People should be made more aware

of the potential risks of self-medication. This awareness may be increased with the help of television advertisements, articles and pamphlets sponsored by different industries and pharmacies. A pharmacist should counsel the patient with or without the prescription and sufficient guidance should be provided regarding different brands and generics of drugs, dosage forms, routes, duration of treatment. The patient should also be guided to consult the physician when the illness pattern is different from before or if the illness prevails longer than usual. The patient should be guided to take medication after proper diagnosis. Strict regulations should be enforced as to the drugs which should be allowed as non-prescription drugs. Drugs which have a low safety profile, narrow therapeutic index, or potential to addiction should be separated and should not be allowed without prescription.

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