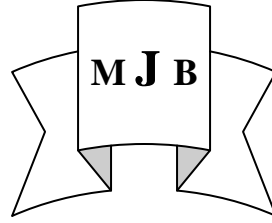


## Abuse of Sexual - Enhancement Drugs in Babylon

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### Abstract

**Background:** Drug abuse is defined as using of drugs for a non-therapeutic or non-medical effect. In Iraq drug abuse is wide range problem because almost any drug can be easily obtained from pharmacies and drug stores. Sexual-enhancement drugs are widely used without a prescription.

**The aim:** The study was conducted to verify the abuse of sexual - enhancement drugs by people attending private pharmacies to purchase these drugs in Babylon.

**Subjects and Method:** Three-hundred and forty males who use these drugs of different ages were collected randomly in Babylon . Questionnaire included the following questions ; age, whether the drug is prescribed by physician or not, the reason for use, causes of impotence, type of drug used, also the subjects were asked about the dose, frequency dose of these drugs and lastly whether they had suffered side effects from these drugs or not.

**Results:** The results showed that 67% of subjects using these drugs were between 25-50 years old. The study also revealed that 84% of those subjects use these drugs without prescription and the reason for use, in 58% of subjects, was to increase the efficiency during sexual intercourse and not due to impotence and the impotence in 58% of impotent patient is due to disease . Furthermore the results showed that the most drug type used is Sildenafil (55%) and most of them used the highest dose. The study also showed that 71% of subjects use these drugs twice weekly and 65% of those subjects had developed moderate side effects from the use of these drugs.

**Conclusion:** The results indicate that there is an abuse of sexual enhancement drugs and most of them are not used on the therapeutic or scientific bases.

### سوء استعمال الأدوية المحفزة للقدر الجنسية في بابل

#### الخلاصة

يمكن تعريف سوء استعمال الأدوية على انه استعمال الأدوية لغير الأغراض الطبية والعلاجية. في العراق يعتبر سوء استعمال الأدوية من المشاكل الواسعة الانتشار حيث يمكن الحصول على اغلب الأدوية بدون وصفة طبية من الصيدليات ومراكز الأدوية.

**الهدف:** الدراسة أجريت لغرض التحقق من وجود سوء استعمال بين مراجعي الصيدليات الأهلية الذين استعملوا هذه الأدوية في محافظة بابل.

**المواد والعمل:** ثلاث مئة وأربعون شخصا من الذكور من مختلف الأعمار تم اختيارهم عشوائيا من مستخدمي هذه الأدوية وكان الاستبيان يشمل الأسئلة التالية: العمر، هل هو موصوف من قبل الطبيب أو لا، سبب استعمال الدواء، أسباب الضعف الجنسي، نوع الدواء المستخدم، الجرعة الدوائية المستخدمة، عدد مرات استعمال الدواء في الأسبوع وأخيرا هل ظهرت أعراض جانبية للدواء أو لا.

**النتائج:** أظهرت النتائج أن 67% من مستخدمي هذه الأدوية كانت اعمارهم بين 25-50 سنة. كما واطهر البحث أن 84% من الأشخاص قد استخدموها بدون وصفة طبية. وقد أظهرت الدراسة أن 55% من الأشخاص قد استعملوا هذه الأدوية لزيادة القدرة الجنسية وليس نتيجة ضعف جنسي ناتج من حالة مرضية. كما وأظهرت الدراسة أن أكثر الأنواع المستخدمة كانت مادة السلدنافيل (الفياجرا)

والتي استخدمها ٥٥% منهم. وبينت الدراسة أيضا أن ٧١% من الأشخاص يستعملون هذه الأدوية بمعدل مرتان أسبوعيا، وكذلك فقد عانى ٦٥% من الأشخاص من أعراض جانبية متوسطة .  
**الاستنتاج:** النتائج تشير إلى أن هناك سوء استعمال في الأدوية المحفزة للقدرة الجنسية وان الكثير منها تستخدم بطرق غير علمية أو طبية في بابل.

## **Introduction**

**D**rug abuse has a huge range of definitions but it can be simply defined as using of drugs for a non-therapeutic or non-medical effect. All of the definitions imply a negative judgment of the drug use in question. An estimated 5.6% of the global population of different age or 300 million people abuse drugs annually [1].

Some of the drugs most often associated with this term include alcohol, amphetamines, barbiturates, benzodiazepines, cocaine, opium alkaloids and sexual enhancement drugs. Use of these drugs may lead to criminal penalty in addition to possible physical, social, and psychological harm [2].

Public health practitioners have attempted to look at drug abuse from a broader perspective than the individual, emphasizing the role of society, culture and availability. In Iraq drug abuse is wide range problem because almost any drug can be obtained easily from pharmacies and drug stores. Sexual enhancement drugs are widely used without a prescription.

### **Substance abuse:**

Is the overindulgence in and dependence of a drug or other chemical leading to effects that are detrimental to

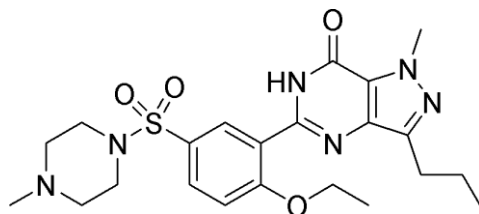
the individual's physical and mental health, or the welfare of others. The disorder is characterized by a pattern of continued pathological use of a medication, non medically indicated drug or toxin, that results in repeated adverse social consequences related to drug use. Substance abuse is sometimes used as a synonym for drug abuse, drug addiction, and chemical dependency, but actually refers to the use of substances in a manner outside socio cultural conventions. All use of controlled drugs and all use of other drugs in a manner not dictated by convention (e.g. according to physician's orders or societal norms) is abuse according to this definition. [3]

### **Sexual enhancement drugs:**

Are group of drugs and chemical substances that come in different pharmaceutical forms used to improve sexual ability in certain patients specially those suffering from impotence, decreased libido and erectile dysfunction.

### **Sildenafil:**

Sildenafil citrate is designated chemically as 1-[[3-(6,7-dihydro-1-methyl -7- oxo -3- propyl-1H-pyrazolo[4,3-d] pyrimidin -5-yl) -4-ethoxyphenyl] sulfonyl] - 4 - methylpiperazine citrate (Figure 1) [4].



**Figure 1** Sildenafil structure

It is indicated for the treatment of erectile dysfunction(ED). The physiologic mechanism of erection of the penis involves release of Nitric oxide (NO) in the corpus cavernosum (CC) during sexual stimulation. Nitric oxide then activates the enzyme guanylate cyclase, which results in increased levels of cyclic guanosine mono phosphate (cGMP), producing smooth muscle relaxation in the CC and allowing inflow of blood. Sildenafil has no direct relaxant effect on isolated human CC, but enhances the effect of NO by inhibiting PDE5, which is responsible for degradation of cGMP in the corpus [5].

In Iraq sildenafil is available in different concentrations (25,50 and 100 milligrams) and many pharmaceutical forms (like oral tablets ,chewable

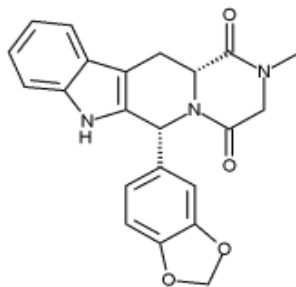
tablets, oral gel and local gel) which is available under many trade names (like *Viagra*<sup>®</sup>, *Novagra*<sup>®</sup>, *Kamagra*<sup>®</sup>, and *Livagra*<sup>®</sup>).

#### **Tadalafil:**

Is designated chemically as (6R-trans)-6-(1,3-benzodioxol-5-yl)- 2, 3, 6, 7, 12,12a-hexahydro-2-methyl-pyrazino [1', 2':1,6] pyrido[3,4-b]indole-1,4-dione (Figure 2).

Tadalafil act by inhibiting PDE5, pharmacologic distinction is its longer half-life (17.50 hours) compared to sildenafil (4–5 hours)[6].

In Iraq Tadalafil is available in two concentrations (10 and 20 milligrams) under the trade name "*Apcalis*<sup>®</sup>".



**Figure 2** Tadalafil structure

#### **Chinese herbs**

There are many (more than 30 type) preparations in Iraq which claimed to contain extracts of Chinese

herbs that enhance sexual function but almost all of these preparations lack scientific drug leaflet written in English. These preparations do not mention the

scientific name of the active materials or the concentration or the dose of the drug therefore it is difficult to know there exact mechanism of action. These drugs come in different forms like capsules, tablets, local spray, local gel and chewable gum. It comes under different trade names like *Vigrex*<sup>®</sup>, *Maxman*<sup>®</sup> and a drug called locally as "deer blood".

#### **Others (Vitamin E, Ginseng, Yohimbine and Xylocaine):**

The first three drugs (Vitamin E, Ginseng and Yohimbine ) are usually combined with each other in tablets or capsules (like *Superfive*<sup>®</sup> and *Sexovan*<sup>®</sup>), they act as antioxidants and their role in improving sexual efficiency is not well understood, while xylocaine (local anesthetic) is used as local gel or spray to delay ejaculation by decreasing the nerve sensation.

#### **Aim of study**

The study was conducted to verify the abuse of sexual - enhancement drugs by people attending private pharmacies to purchase these drugs in Babylon.

#### **Subjects and Method**

The descriptive study was conducted between April 2009 and November 2010 on sample of 340 men aged 15 to 70 years old, in Babylon. The subjects were selected from men who attended three private pharmacies to buy different types of sexual-enhancement drugs.

A questionnaire was made included the following questions : age, whether the drug is prescribed or used without prescription, the reason for using the drug, cause of impotence, which type of drug used (the drugs was

divided into 4 main types), the dose used, the frequent usage per weak and extent of side effects in the subjects of study.

### **Results and Discussion**

#### **Variation of age:**

The results showed that 34 subjects using these drugs were under 25 years old, 228 subjects were between 25 and 50 years and 78 subjects were more than 50 years old (Figure 3). These numbers indicates that sexual enhancement drugs are used mostly by males with age ranging between 25 and 50 years old.

#### **Drug prescription:**

The results showed that only 54 subjects used prescribed sexual enhancement drugs under physician supervision while 286 subjects used these drugs without prescription (Figure 4), these results shows that there is a great abuse of such drugs and most of these drugs were used without prescription or supervision by medical experts.

#### **The reason for using sexual enhancement drugs:**

When the subjects of study were asked about the cause for using sexual enhancement drugs, 133 of them attributed the cause to impotence and decreased libido, while 197 subjects used these drugs to increase sexual efficiency during sexual intercourse and 10 subjects said that they used it just for fun (Figure 5). These results indicated that more than 60% of the subjects using these drugs were not actually needed for such treatments.

#### **Causes of impotence:**

The 133 patients who suffered from impotence were asked about the cause of this condition, in 52 subjects

was due to normal physiology of advancing age, in 76 subjects was due to disease conditions (like diabetes mellitus) and the impotence in the last 5 subjects was due to psychological causes (Figure 6). These results indicate that the percentage of impotence caused by disease (57%) was higher than that caused by advanced age (39%).

#### **Type of sexual enhancement drugs used:**

One hundred eighty seven of the subjects used sildenafil, 20 subjects used tadalafil , 119 used Chinese herbs, and only 14 subjects used the other sexual enhancement drugs (Figure 7).

These results revealed that sildenafil and Chinese herbs are the most type used because sildenafil or (Viagra®) is widely used in Iraq because most subjects are familiar with this drug from different type of media (satellite and TV) and also it is cheap (about 250 dinars for each pill), available in all pharmacies, and very easy to use (1 pill 30 minutes prior to sexual intercourse).

#### **The dose of sildenafil and tadalafil used:**

The 187 subjects who used sildenafil , 15 of them used 25 mg tablet, while 34 used 50 mg tablet and 138 used the 100 mg tablet (Figure 8). For the 20 subjects who used tadalafil, 4 of them used 10 mg tablet and 16 used the 20 mg form (Figure 9). These data indicates that high doses were more preferred than low doses and this is due to personal experience of each subject

to these drugs, since it is not prescribed by physician thus, each subject had tried most doses strength, and found that larger doses will give better results.

#### **Frequency of usage of sexual enhancement drugs per week:**

Sixty eight subjects used these drugs once a week, 241 subjects used it twice a week, 27 subjects used it three times per week while only 4 subjects claimed to use it every day (Figure 10).

These results indicated that most of subjects prefer to use the drugs every 3-4 days. Unfortunately, in this study the subjects was not asked about their marital state, or the duration of using these drugs (months, years) and if there is effect on the fertility of subjects and this can be done in future studies.

#### **Side effects:**

Eighty-five subjects of the study had suffered from severe side effects (S/E), while 221 subjects had suffered from moderate S/E and only 34 subjects had not suffered from any S/E (Figure 11).

These results indicated that most subjects had suffered from moderate S/E. The most common side effects of sildenafil and tadalafil use included headache, flushing, dyspepsia and nasal congestion. Severe side effects may include urinary tract infections, abnormal visions and skin rash. The side effects associated with the usage of Chinese herbs include headache, flushing, nausea and vomiting [7].

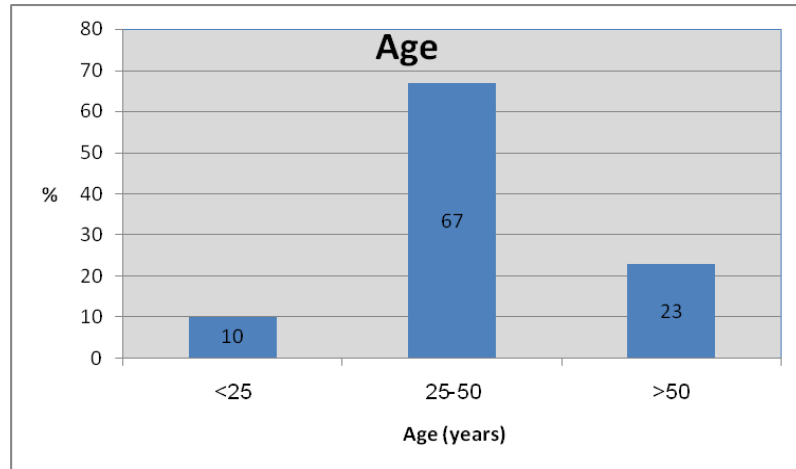


Figure 3 Variation of age

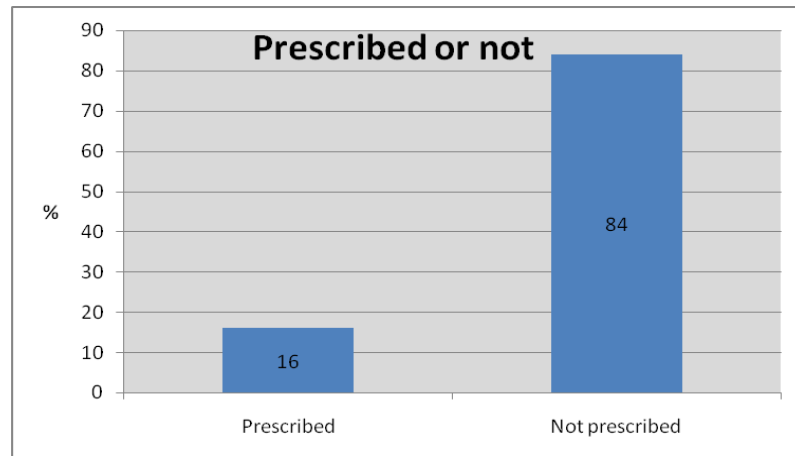


Figure 4 Drug prescription

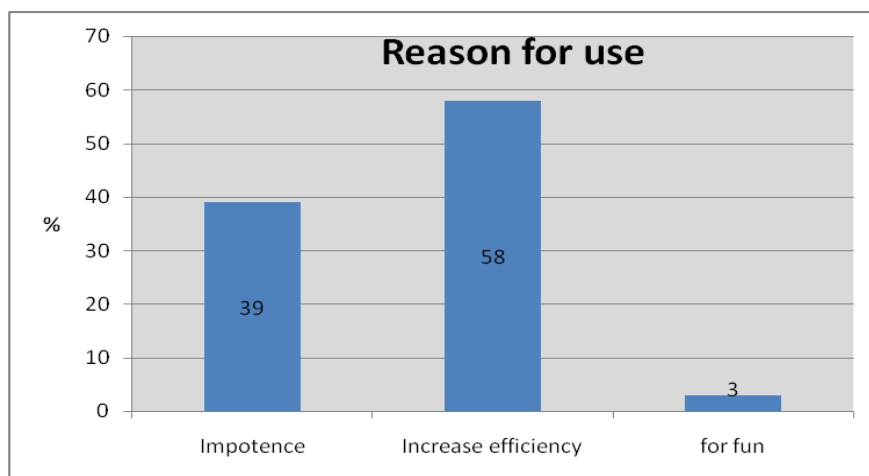
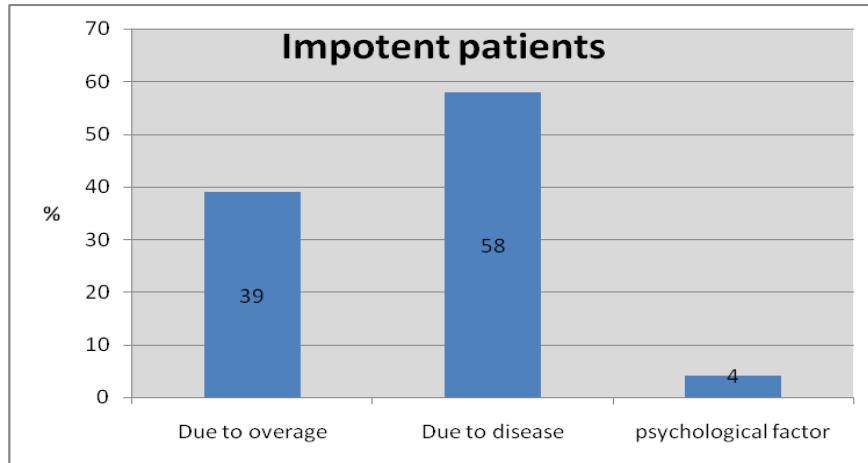
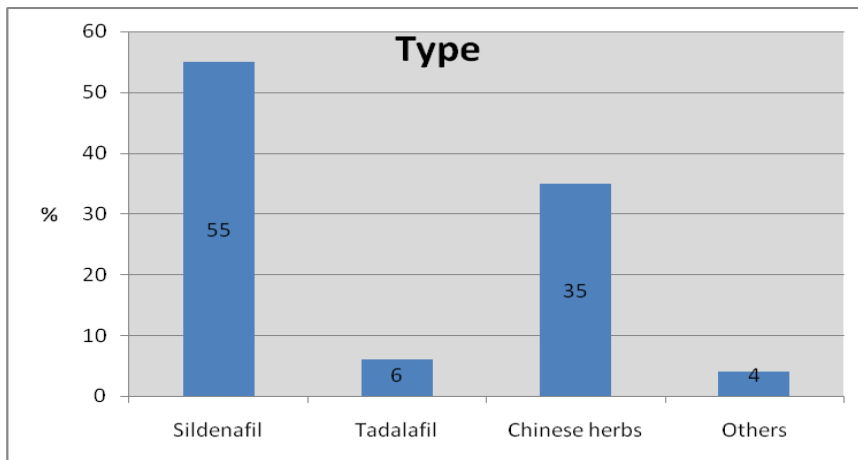


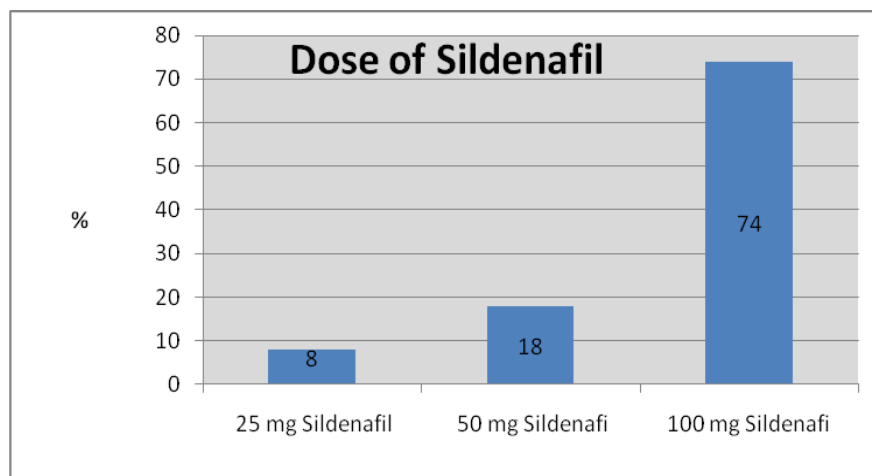
Figure 5 The reason for using sexual enhancement drugs



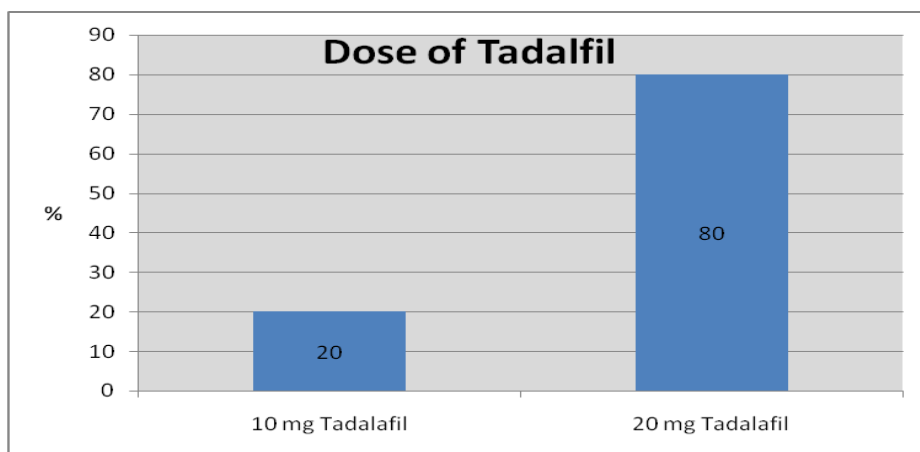
**Figure 6** Causes of impotence



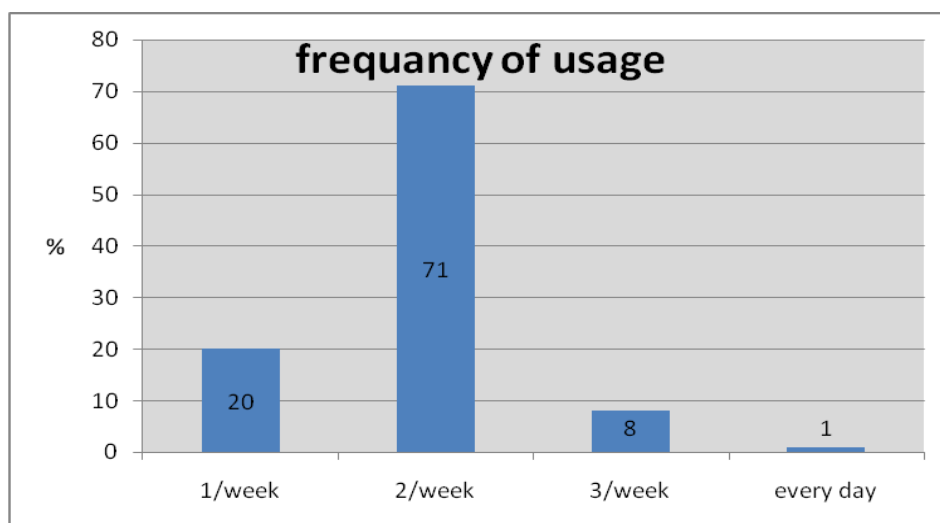
**Figure 7** Type of sexual enhancement drugs used



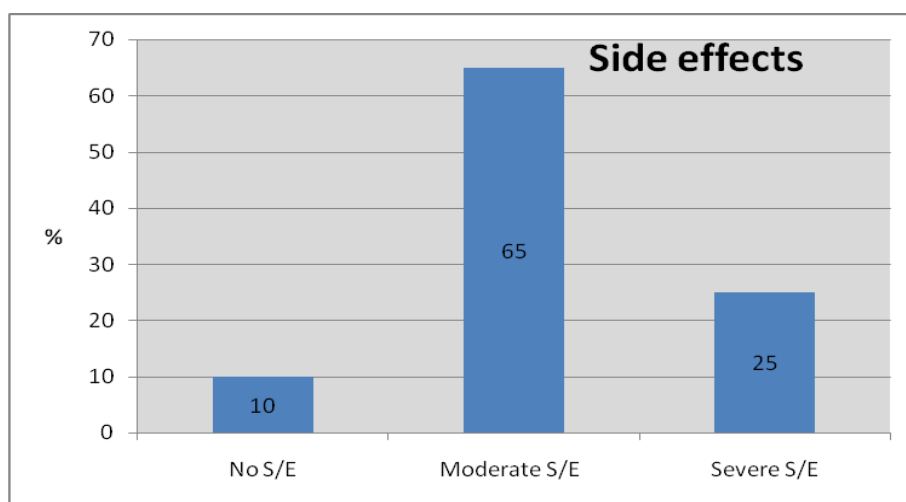
**Figure 8** The dose of sildenafil



**Figure 9** The dose of tadalafil



**Figure 10** Frequency of usage of sexual enhancement drugs per week



**Figure 11** Side effects



### **Conclusions**

- Sexual enhancement drugs are used mostly by 25-50 years old males.
- There is great abuse of sexual enhancement drugs, and most of it were used without prescription.
- Most of subjects used these drugs to increase sexual efficiency and not due diseases.
- The impotence caused by some disease conditions was higher than that caused by advancing age.
- Sildenafil were the most type of sexual enhancement drugs used.
- High doses of the drugs were more preferred than low doses.
- Most of subjects prefer to use the drugs every 3-4 days.
- Most subjects had suffered side effects to these drugs especially headache and flushing.

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