بسم الله الرحمن الرحيم

كلية نبتة
NAPATA COLLEGE

Faculty of Medicine

Community Medicine

Knowledge, Attitude and Practice of Paracetamol among Information Technology Students in NAPATA College 2021

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{قالوا سبحانك لا علم لنا إلا
ما علمتنا إنك أنت العليم الحكيم}

(سورة البقرة 32)

Dedication

We dedicate this work

To whom our love increase with every sunshine

Our respective parents for everything they gave & teach us what does life means (give without stop)

To whom help us with their time and efforts, our doctors, teachers & all stuff in Napata collage.

To our friends and family, they gave us a great support and encouragement we thank them all and wish them all the best.

Acknowledgement

First of all, we thank Allah (God)

We would like to send our great full thanks to the people who give us a lot of their time and effort.

Special thanks to our supervisor

Dr. olaa Adil

For the help, effort and kind guidance and Supervision.

Abstract

Introduction:

Paracetamol is a drug that relives pain. They are widely used and generally safe but some people consume excessive quantities that lead to side effects. While overdose of Paracetamol produce severe fatal liver damage

Objectives:

-To determine knowledge of Paracetamol toxicity among IT student in Napata collage at 2021.

-To identify attitude of Paracetamol toxicity among IT student in Napata collage at 2021.

-To assess Practice of Paracetamol toxicity among IT student in Napata collage at 2021.

Methods:

A descriptive cross sectional study was conducted among IT students in Napata collage-Khartoum at 2021. One hundred and seventy students were randomly selected and interviewed. A structured questionnaire to assess the Knowledge, attitude and practice of the students regarding paracetamol use was used.

Statistical analysis:

Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 23.

Results:

The total sample was 170 students; it was predominantly females (68% females and 32% males). The mean age was 21 years (SD±1.9). Only a quarter (11%) of the respondents had good total knowledge regarding. More than three quarters (79%) of the students agree that paracetamol overdose can cause death. Half (41%) of the students agree that taking multidrug containing paracetamol is not safe. Eighty one per cent of the students who took paracetamol, headache was the most common cause for using paracetamol (88%), and both the pharmacy and the supermarket

were the most common sources for paracetamol. Of all the students who took paracetamol in the last month 85% did that without prescription i.e. with self-prescription 25% of them did that to avoid time loss.

Conclusion:

Most of the students had poor knowledge about paracetamol. Most students have good general attitude but most of them had poor attitude regarding self-prescription. Headache was the most common cause of taking paracetamol and both the pharmacy and supermarket were the most common sources to obtain paracetamol.

Keywords:

Paracetamol, knowledge, attitude, practice, over the counter drugs (OTC), prescription, IT students, NAPATA College

الملخص

مقدمة:

الباراسيتامول دواء يخفف الألم. يستخدم على نطاق واسع وآمن بشكل عام ولكن بعض الناس يستهلكون كميات زائدة تؤدي إلى أعراض جانبية. أثناء تناول جرعة زائدة من الباراسيتامول تؤدي إلى تلف الكبد المميت

الأهداف:

لتحديد المعرفة من الباراسيتامول بين طالب تكنولوجيا المعلومات في كلية نبتة عام 2021

لتعرف الموقف من الباراسيتامول بين طالب تكنولوجيا المعلومات في كلية نبتة عام 2021

لتقييم السلوك من من الباراسيتامول بين طالب تكنولوجيا المعلومات في كلية نبتة عام 2021

المنهجية:

أجريت دراسة مقطعية وصفية بين طلاب تقنية المعلومات في كلية نبتة- الخرطوم في 2021. تم اختيار مائة وسبعين طالبًا بشكل عشوائي وإجراء مقابلات معهم. أاستبيان منظم لتقييم معرفة وموقف وممارسات الطلاب فيما يتعلق باستخدام الباراسيتامول.

التحليل الإحصائي:

تم تحليل البيانات باستخدام برنامج الحزمة الإحصائية للعلوم الاجتماعية (SPSS). الإصدار 23.

النتائج:

بلغت العينة الكلية 170 طالب وطالبة. كانت الغالبية العظمى من الإناث (٪68 إناث و 32٪ ذكور). كان متوسط العمر 21 سنة (SD ± 1.9). فقط ربع المستجوبين (٪11) لديهم حالة جيدة ومعرفة كاملة بخصوص البارسيتامول . يوافق أكثر من ثلاثة أرباع (٪79) الطلاب على ان استخدام الباراسيتامول يمكن أن تسبب جرعة زائدة والموت. يوافق نصف (٪41) الطلاب على أن تناول أدوية متعددة تحتوي على الباراسيتامول غير آمن. واحد وثمانون في المائة من الطلاب الذين تناولوا الباراسيتامول ، كان الصداع السبب الأكثر شيوعًا لاستخدام الباراسيتامول (٪88) ، وكلاهما من الصيدلية والسوبر ماركت المصادر الأكثر شيوعًا للباراسيتامول. من بين جميع

الطلاب الذين تناولوا الباراسيتامول في الشهر الماضي 85٪ فعلوا ذلك بدون وصفة طبية أي أن 25٪ منهم فعلوا ذلك تجنب ضياع الوقت.

الخلاصة:

كان لدى معظم الطلاب معرفة ضعيفة بالباراسيتامول. معظم الطلاب لديهم الموقف العام جيد ولكن معظمهم كان لديهم موقف ضعيف فيما يتعلق بالوصف الذاتي. كان الصداع السبب الأكثر شيوعًا لتناول الباراسيتامول وكان كل من الصيدلية والسوبر ماركت المصادر الشائعة للحصول على الباراسيتامول

Table Content

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List of Abbreviations:

No.	Abbreviation	The Meaning
1-	**ABCs**	airway, breathing, circulation
2-	**ALF**	acute liver failure
3-	**APAP**	N-acetyl-p-aminophenol
4-	**FBC**	Full Blood Count
5-	**INR**	International Normalized Rate
6-	**LFTs**	Liver Function Test
7-	**NAC**	N-acetylcysteine
8-	**IT**	Information tecnology
9-	**OTC**	over the counter
10-	**UK**	United Kingdom
11-	**US**	United State
12-	**WHO**	World Health Organization

Chapter One

1. Introduction

1.1 Background

Paracetamol is N-acetyl-p-aminophenol (APAP) was discovered in 1889 and considered as active metabolite of Phenacestine [1]. Paracetamol inhibits prostaglandin synthesis in the CNS. This explains why it'4s used as analgesic and antipyretic drug [2]. It's available as oral, injectable, and rectal formulation with different trade names like Tylenol or Panadol [1,2].

World Health Organization (WHO) classify Paracetamol as essential medicine and to be included in essential drug list [3].

Paracetamol is not Nonsteroidal anti-inflammatory drug (NSAID) but it is use as a suitable substitute for the analgesic and antipyretic effects of NSAIDs for those patients cannot use it. Paracetamol is conjugated in the liver to form inactive glucuronidated or sulfated metabolites. It has a well-established safety profile when used appropriately (maximum recommended dose of Paracetamol is 3 grams in 24 hours [4]), but in acute overdose paracetamol can lead to severe and sometimes fatal hepatotoxicity. a highly reactive metabolite that can react with sulfhydryl groups and cause liver damage so, Paracetamol should be avoided in patients with severe hepatic impairment [2]. The antidote to Paracetamol overdose is N-acetylcysteine (NAC), is most effective when given within eight hours of ingesting Paracetamol. For this reason, it is absolutely necessary that Paracetamol poisoning be recognized, diagnosed, and treated as early as possible [4] .

Uses of Paracetamol

What is it prescribed for?

- Fever
- Headache
- Muscle Pain
- Menstrual Cramps
- Joint pain or discomfort
- Toothache

Side effects

Major & minor side effects for Paracetamol

- Nausea and Vomiting
- Skin rash
- Dark or clay coloured stools
- Tiredness
- Loose stools
- Bloody and cloudy urine
- Stomach discomfort

1.2 Problem Statement:

In many countries, paracetamol is available without prescription. It associated with episodes of poisoning that constitute 3.3% of injuries in United State (US) regional poisons center [5]. 10 % of injuries to the United Kingdom (UK) National Poisons Information Service, and up to 43% of all admissions to hospital with self-poisoning in the UK [6]. In the US paracetamol alone accounted for 4.1% of deaths from poisoning reported to American poisons center in 1997. Most deaths are associated with deliberate self-poisoning, but therapeutic misadventures do occur rarely, in both adults and children [7].

1.3 Justification:

The irrational use of medicines is a challenge in both developed and developing country. Paracetamol overdose cause serious and severe side effects i.e. liver damage. In US, there are growing concerns about the use of OTC and non-OTC medicines by the students [8]. Similarly, among the developing country like Saudi Arabia, the misuse of a variety of Analgesics, vitamins and sedatives has been reported among high school and university students with low knowledge, attitude and practice towered this medications [9]. To the limit of our knowledge there are on similar study conducted to showed that knowledge, attitude and practice of Paracetamol among college student in Sudan, so this research aim to obtain more knowledge in this area.

1.4 Objectives:

1.4.1 General Objective:

To assess knowledge, attitude and practice of Paracetamol among IT student in Napata collage at 2021

1.4.2 Specific Objective:

-To determine knowledge of Paracetamol among IT student in Napata collage at 2021.

-To identify attitude of Paracetamol among IT student in Napata collage at 2021.

-To assess Practice of Paracetamol among IT student in Napata collage at 2021.

Chapter Two

2. Literature review

2. literature review

2.1 Paracetamol Background

Paracetamol is a pain killing (analgesic) medicine available over-the counter without a prescription.

Paracetamol can be used to:

- ease mild to moderate pain - for example, headaches, sprains, or toothache
- Control a fever (high temperature, also known as pyrexia) - for example, when someone has the flu (influenza).

2.2 Types of Paracetamol:

Paracetamol is widely available as tablets and capsules.

For people who find it difficult to swallow tablets or capsules, paracetamol is also available as a syrup or as soluble tablets that dissolve in water to make a drink.

How it works:

Paracetamol works as a painkiller by affecting chemicals in the body called prostaglandins. Prostaglandins are substances released in response to illness or injury. Paracetamol blocks the production of prostaglandins, making the body less aware of the pain or injury.

Paracetamol reduces temperature by acting on the area of the brain responsible for controlling temperature.

2.3 Paracetamol side effects:

- Low fever with nausea, stomach pain, and loss of appetite.
- Dark urine, clay-colored stools.
- jaundice (yellowing of the skin or eyes).

This is not a complete list of Paracetamol side effects and others may occur.

2.4 Acetaminophen Toxicity

Acetaminophen toxicity is a common cause of acute liver failure in children and adolescents. Acetaminophen, also known as paracetamol and N-acetyl-p-aminophenol (APAP), is primary used for the treatment of pain and/or fever Acetaminophen is an effective pain-relieving and fever reducing agent when taken in the recommended daily dose.

Acetaminophen toxicity or overdose can occur purposefully (when a person knowingly takes more than the recommended maximum daily dose) or accidentally (when a person is unaware they are taking multiple products containing acetaminophen and exceeds the recommended maximum daily dose).

The maximum recommended acetaminophen dosage is 4 grams/day in an adult and 90 mg/kg/day in children. People with underlying liver disease or those with chronic alcohol consumption are at an increased risk of developing hepatotoxicity (liver damage from chemicals) with use of acetaminophen.

2.5 Acetaminophen Toxicity Symptoms:

Initial symptoms of acetaminophen toxicity can take up to 12 hours to appear. Symptoms and side effects include:

- Abdominal pain
- Irritability
- Generalized weakness
- Loss of appetite
- Jaundice (yellow appearance of skin and eyes)
- Diarrhea. Vomiting, Nausea
- Convulsions
- Coma

- **Onset of action**

Paracetamol provides fast and effective relief from pain and fever. Oral forms (tablet, capsule): the onset of action is seen in 30–60 minutes after taking it. Injectable forms (injection, infusion): The effects can be seen in 15–30 minutes. Rectal form (suppository): onset of action is unknown.

- **Duration of effect**

Paracetamol effects may last for the duration of 4–6 hours.

- **Safe with alcohol?**

Interaction with alcohol is unknown. It is advisable to consult your doctor before consumption.

- **Is it habit forming?**

No habit forming tendency has been reported for Paracetamol.

- **Usage in pregnancy?**

Paracetamol is the safest first-line treatment in pregnant women to reduce pain or fever. It is not known to cause any harm to the foetus. However, consult your doctor before using this medicine.

- **Usage while breast-feeding?**

Paracetamol is the best choice of painkillers during breastfeeding. It appears in breast milk in very small amounts which are not known to harm your baby. However, consult your doctor before taking this medicine

When not use it :

Allergy

Avoid using Paracetamol if you are allergic to it. Inform your doctor if there is a history of paracetamol allergy. Contact your doctor and seek medical attention immediately if you notice any symptoms such as skin rash, itching/swelling anywhere in the body, dizziness, breathing difficulty, etc.

Kidney damage

Long term use of some painkillers may harm your kidney. Paracetamol is not recommended for use if you have any kidney problem associated with the excessive use of painkillers.

Severe liver disease

Paracetamol gets broken down and absorbed in the liver. Higher doses of this medicine may cause liver damage. Therefore, Paracetamol is generally not recommended if you have severe liver problems because it can further increase the risk of liver damage

Missed Dose

Oral and rectal forms: Paracetamol is normally taken on a needed basis. If you miss a scheduled dose take it as soon as possible but do not double the dose to make up for the missed one. Parenteral forms: It is always important to take your paracetamol injection at the scheduled time. If you missed taking the dose, inform your doctor, and get an appointment for further instructions.

Overdose

Oral/rectal forms: Never take more than the prescribed dose. Seek emergency medical treatment or contact your doctor in case you suspect an overdose of paracetamol

All drugs interact differently for person to person. You should check all the possible interactions with your doctor before starting any medicine.

Interaction

with Alcohol

Description

Interaction with alcohol is unknown. It is advisable to consult your doctor before consumption.

Instructions

Interaction with alcohol is unknown. It is advisable to consult your doctor before consumption.

Interaction with Medicine

Carbamazepine

Phenytoin

Sodium Nitrite

Leflunomide

Prilocaine

Disease interactions

Alcoholism

Consumption of alcohol during treatment with Paracetamol may cause liver damage. Hence, avoid consuming alcohol while taking Paracetamol due to the risk of liver damage.

Liver disease

Paracetamol may increase liver enzyme levels. Hence, maintain caution while taking paracetamol as it can increase the risk of liver damage.

Kidney disease

Paracetamol is filtered by the kidney and excreted through urine. Hence, maintain caution while taking paracetamol as it can increase the risk of kidney damage.

Lab interactions

5-HIAA Urine Test

Paracetamol can interfere with urine tests and may give a false-positive result. It is advised to inform your doctor and the lab technician about all your current medicines before undergoing any lab test.

This is not an exhaustive list of possible drug interactions. You should consult your doctor about all the possible interactions of the drugs you're taking

2.6 previous studies

Paracetamol is widely available and has been around since the 1889. It is widely prescribed and cheap to buy OTC, making it a common drug taken in overdose. It is a very useful analgesic (alone or in combination) and also is an antipyretic. It is normally found as a 500 mg tablet but it is often combined with other active ingredients in various preparations [10]

In the UK it is the most common agent of intentional self-harm. Between 2000- 2008 there were 90-155 deaths from paracetamol poisoning every year. In addition, there are deaths resulting from paracetamol compounds. Also it considered most common cause of acute liver failure (ALF). [10]

Clinical features of (ALF) Commonly , patients are asymptomatic for the first 24 hours or have nonspecific abdominal symptoms (such as nausea and vomiting), Hepatic necrosis begins to develop after 24 hours (elevated transaminases, right upper quadrant pain and jaundice) and can progress to acute liver failure. Patients may also develops: Encephalopathy, Oliguria, Hypoglycemia, Renal failure and lactic acidosis usually occurs around day [10] .

Investigations of Paracetamol level: take paracetamol level four hours' post-ingestion, or as soon as the patient arrives if: Time of overdose is greater than four hours, Staggered overdose (in staggered overdoses, the level is not interpretable except to confirm ingestion), U&E, creatinine - to look for renal failure and have a baseline. Liver Function Test (LFTs): may be normal if the patient presents early but may rise to Alanine Aminotransferase (ALT) >1000 IU/L. This is the enzyme level taken to indicate hepatotoxicity, Glucose: hypoglycemia is common in hepatic necrosis and capillary blood glucose should be checked hourly, clotting screen: prothrombin time is the best indicator of severity of liver failure and the International Normalized Rate (INR) should be checked 12-hourly, Arterial blood gas; acidosis can occur at a very early stage, even when the patient is asymptomatic. It is seen in up to 10% of patients with (ALF), Full Blood Count (FBC) and salicylate levels are not routinely required . A resarch conducted in Northwest Ethiopia in 2017 on 276 health science students the results showed that 64.6% of the students had good level of knowledge on self-medication which include Paracetamol because the participants were aware that medication administration requires basic knowledge about drug action [16]. In same with reaserch conducted in Malaysia in 2014, on 100 Nigerian postgraduate-students results showed that the good knowledge on medication use and safety because 90.6% said over-the counterd possess adverse effects and study population 72.9% strongly agreed that pharmacist is a reliable source of drug information [17]. A research conducted in Saudi Arabian Taif University in 2017 enrolled on 281 students showed that statistically significant between male's gender and high levels of knowledge about paracetamol use. Level of knowledge increased with the student's academic level and a significant association was observed between knowledge and age [18]. This finding match with a research conducted in Aston university in America in 2011 on 50 students results showed that increasing level of knowledgment with the increasing in the academic studying year.(First year students averaged 3.00 (42.9%), second year averaged 3.40 (48.6%), third year averaged 3.33 (47.6%) and fourth year averaged 3.71(53.0%) [19]. This studies contrast with research conducted in Gazan in Saudi Arabia in October 2016_ March 2017 on 440 female

students showed that the awareness level was generally poor, awareness about toxic dose & adverse effect of paracetamol was low(12.3% participant were knowledgeable and 87.7%were unknowledgeable about paracetamol adverse effect .

A research conducted in Ethiopia at 2017 attitude self-medicine is 49% of students had favorable attitude among health, science students in Debre Markos University, Northwest Ethiopia[2]. This finding is match with another research conducted in Malaysia in 2014 showed that attitude is 60% among Nigerian Postgraduate-Students in University Sultan Zain

Alabidin (UniSZA) [16]. The study was reverse to research conducted in Saudi Arabia at 2017 on 200 students showed that attitude regarding of paracetamol is negativity 40.9% [1]. It is also reverse with research conducted in India at 2012 showed that attitude wise 60(76.92%) of first year and 53(67.08%) of second year students in Pramukh Swami Medical College[21]. A research conducted in Saudi Arabia at 2017 founded Practices regarding Paracetamol use is (73.3%) of the study respondents had fair practices, 0.7% was observing good while 26% had poor practices regarding the use of Panadol [18]. This research was same with research in Ethiopia at 2017showed that practice of paracetamol is 146 (58.4%) took self-medication [16]. In addition, same with research in India at 2012 showed that 91% students practiced self-medication [21]. In contrast to research was conducted in Malaysia at 2014 founded that poor-practice among population of Nigerian post graduate students [17]. To our knowledge there is on data from Sudan

Chapter Three

Material and Methods

3. Study Material and Methods

3.1 Study Design:

A descriptive cross sectional facility base study have been conducted to assess knowledge, attitude and practice of Paracetamol toxicity among information technology student in Napata collage at 2021.

3.2 Study Area:

The study have been conducted in the faculty of IT, at alriad, Khartoum State, Sudan.

3.3 Study duration:

The study has been conducted from April to December.

3.4 Study Population:

The study have been conducted among information technology student in Napata collage

3.5 Inclusion criteria:

Males and females in IT students who registered in, Napata collage.

3.6 Exclusion criteria:

Students who not fulfill the inclusion criteria.

3.7 Sampling Technique:

IT students are stratified according to their classes (4 Classes) and then IT student are selected randomly from each strata (class).

3.8 Sample Size:

It was calculated by using this equation:

$$n = \frac{N}{1 + N(d)^2}$$

Where:

- n = Sample Size
- N = Total Population
- d = Degree of Accuracy (0.05)

n = 170

3.9 Variable:

Comparisons of knowledge, Attitude and Practices with the variables group compare scores of knowledge, attitude and practices with various demographic factors (age, gender) and estimate the degree of relationship between three categories of knowledge, attitude and practices

3.10 Data Collection Method and Tools:

Data were collected from respondents using A self-administered questionnaire was developed through literature search. The questionnaire was taken from previous literature and modified to fit the objectives of the study. It consisted of three sections: the first section included demographic data about the participants (gender and age,). The second section included assessment of knowledge about paracetamol (knowing the drug, cause for use, maximum allowed dose and minimum fatal dose). The third section included three questions for assessment of attitude regarding effects of overdose, self-prescription of paracetamol and taking multiple drugs containing paracetamol. The fourth section included 9 questions to assess the practice of the students including (dose, frequency, most common cause of use, most common source, ways of getting paracetamol, cause of getting paracetamol with prescription, cause of self-prescription and criteria of self-prescription). Total score was 9, those scoring 5 points or more were considered to have good knowledge, anyone scoring less than 5 was considered to have poor knowledge

3.11Data analysis:

Data were analyzed using the statistical package for the social sciences version 23 (SPSS Inc., Chicago, IL) statistical software. The analyses included descriptive statistics and chi-square test.

3.12 Ethical Consideration:

Objectives and goals were explained at the beginning of the questionnaire to all participating students, and their enrolment was after they consent to participate in the study. Research ethics includes the approval sheet, anonymity, confidentiality, and ethical eligibility. Ethical feasibility in this study comes from the Ethics Committee of the Faculty of Medicine, NAPATA College

Chapter Four

Results

4. Results

4.1 Age and Gender of respondents

The total sample was 170. The mean age was 21 years (SD±1.89), age range between 17 and 28 years old and mode of age were 21 Table 4.1 and figure 4.2 . Female students were 68% and males were 32% figure 4.1 majority of students in 3rd year followed by 2end year followed by 1st year and at the last final year.

Table 4.1: age of the IT students

Age (years)	Mean	20.3
	Maximum	28
	Minimum	17
	Mod	21

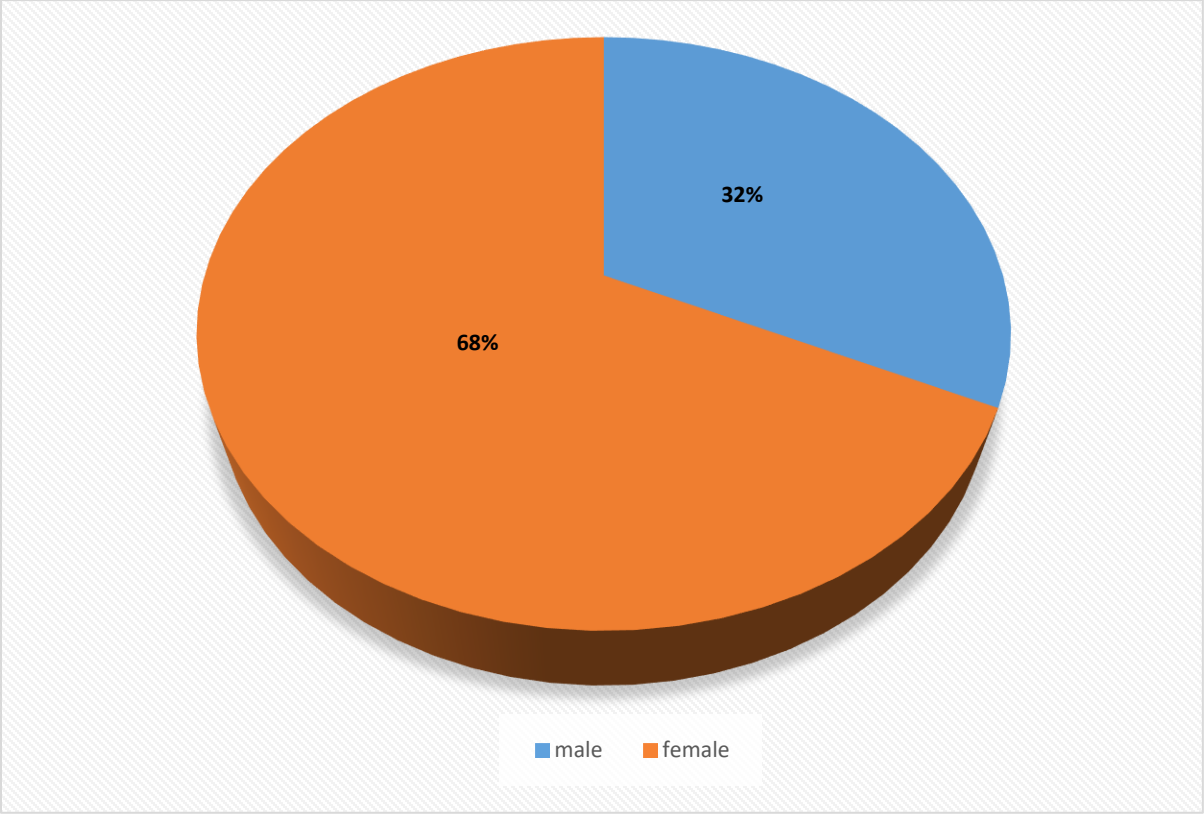

Figure 4.1 gender among IT students

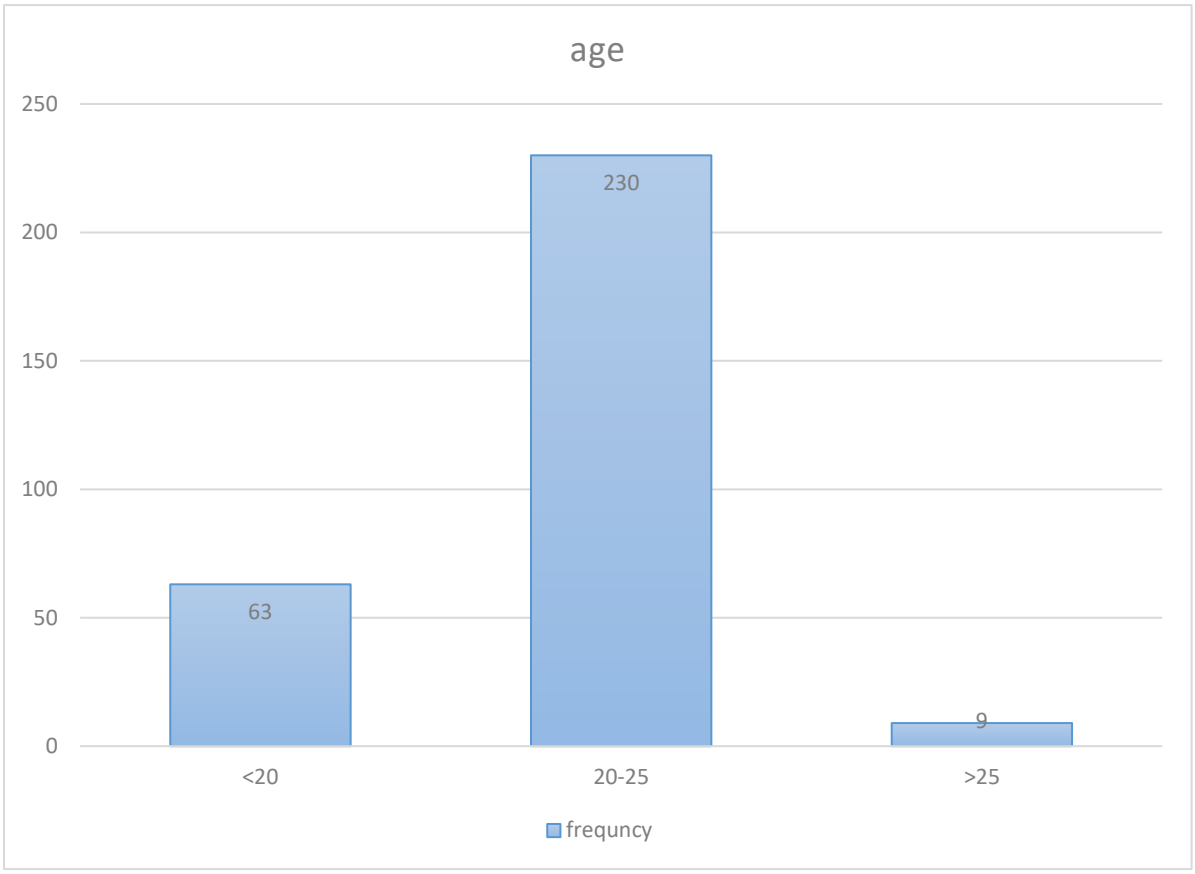

Figure 4.2 Distribution of study participants according to age

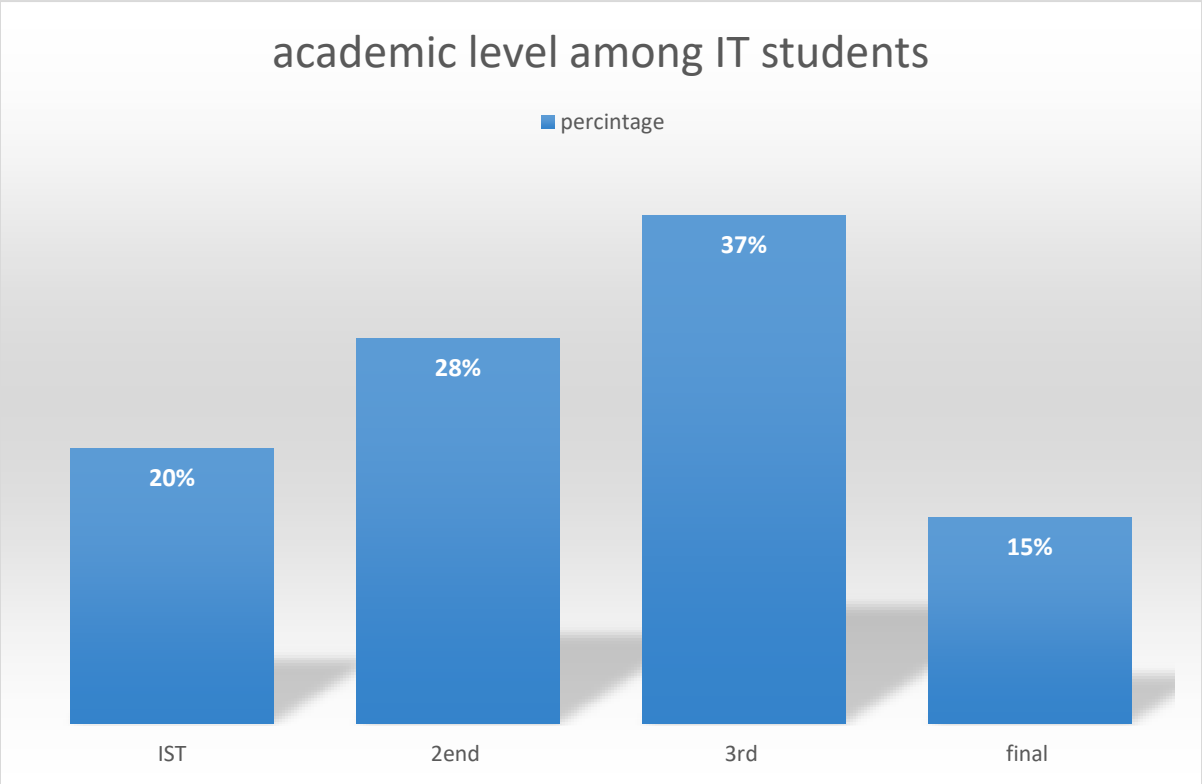

Figure 4.3 Distribution of study participants according to study of year

4.2 Students' Knowledge of Paracetamol toxicity

The mean knowledge score was 3.9 with 0 and 7, only 11.7% had good knowledge and 88.3% had poor knowledge figure 4.4. The mean score of knowledge about indications of Paracetamol for the total sample was 2.9, regarding knowledge about side effects the mean score was 3.1 for IT students. In all students only 6% know the maximum allowed dose per day and 94% don't know it. About a quarter (7%) of the students know the minimum fatal dose of Paracetamol and 33% admitted that they don't know. About 43% of the students under estimated the minimum dose Table 4.2.

Table 4.2: Students' Knowledge of Paracetamol toxicity

		Frequency
Knowledge of Paracetamol use	Good knowledge	20 (11.7%)
	Poor knowledge	150 (88.3%)
Knowledge score	Mean	3.9
	Minimum	0.0
	Maximum	6.0
Mean Knowledge about indications		2.9
Mean Knowledge of side effects		3.1
Knowledge of maximum allowed dose/day	Know the max allowed dose	10 (5.8%)
	Do not know the max allowed dose	160 (94.2%)
Knowledge of the minimum fatal dose	Know the minimum fatal dose	12 (7%)
	Underestimate the min fatal dose	72 (43%)
	Overestimate the min fatal dose	26 (17%)
	Don't know the min fatal dose	60 (33%)

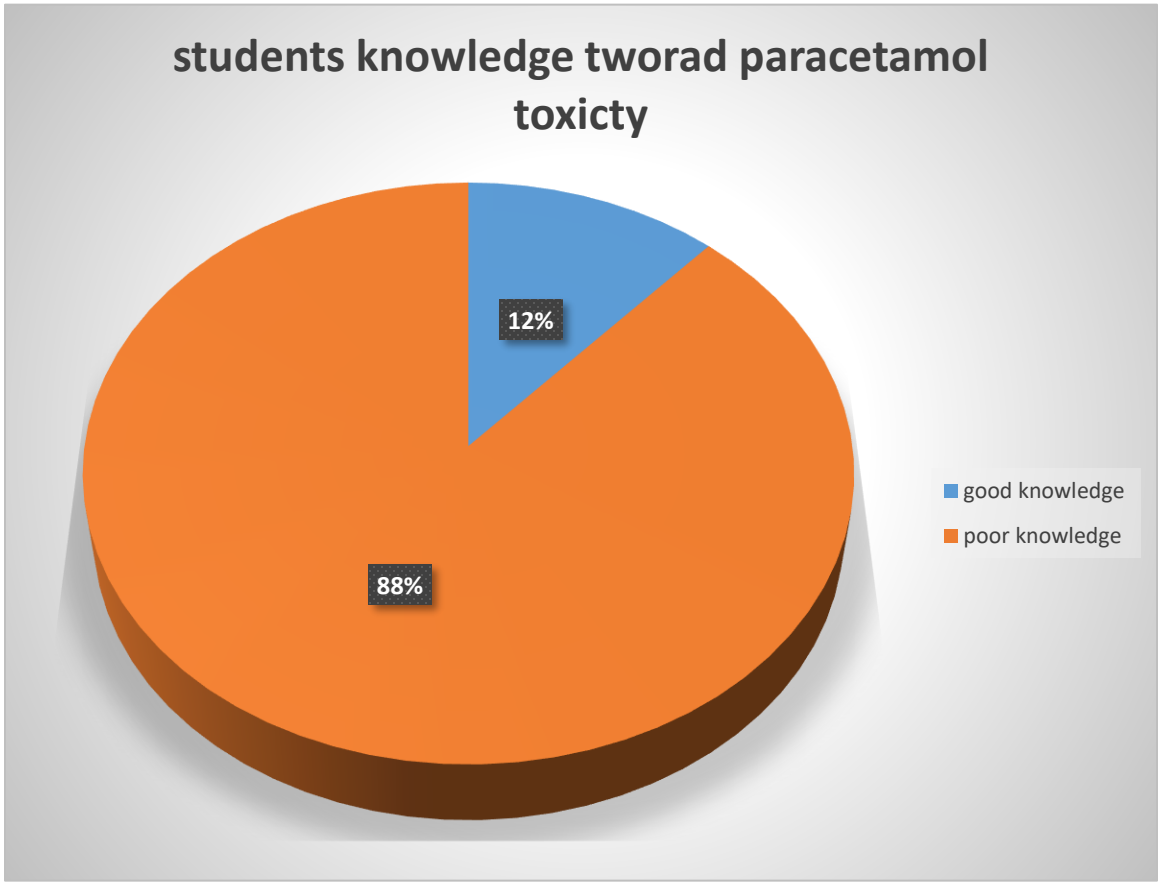

Figure 4.4: Students' Knowledge of Paracetamol toxicity

4.3 Students‟ attitude towards paracetamol toxicity

Of all the students more than three quarters 71% think that overdose can cause death and 29% think that it will not). Nearly half 52% of students agree that it is harmful and 48% agree that it is not harmful). Of all the students more than half 60% of students think it is safe and 40% think it is not safe) table 4.3.

Table 4.3: Students' attitude towards Paracetamol toxicity.

		Frequency
Attitude in use of Paracetamol in overdose & death	Paracetamol in overdose can cause deathParacetamol	120 (71%)
	in overdose does not cause death	50 (29%)
Students‟ attitude towards self-prescription:	Self- prescription is harmful	88 (52%)
	Self-prescription is not harmful	82 (48%)
Students‟ attitude towards use of multiple drugs Containing paracetamol	Use of multiple drugs containing paracetamol is safe	100 (60%)
	Use of multiple drugs containing paracetamol is not safe	70 (40%)

4.4 Students‟ practice towards paracetamol toxicity

Among all the students 81% took paracetamol in the last month. Most of the students (94%) used to take paracetamol as one tab (500mg) or two tabs (1000mg) per dose and in more than half (59%) of them the frequency of taking paracetamol varies between daily to monthly and more.

Headache was the most common cause (91%) for taking paracetamol among the students, Followed by flue/influenza and fever). Regarding the source of acquiring paracetamol among students who took it, 36% used to get paracetamol from a pharmacy, 52% from a supermarket and 10% from family members. While three quarters (75%) of students took paracetamol without prescription, a quarter (25%) of them did that with prescription. Only (25%) of the students took paracetamol with prescription. (47%) of them did that because of their fear of side effects, (16%) to avoid drug dependence and (37%) did that to avoid taking wrong doses

Of all the students who took paracetamol without prescription (75% as mentioned above), 15% of them said they have enough knowledge to take paracetamol, 35% said that they don't care. More than quarter (35%) did that to avoid time loss and only 15% of them did that to avoid cost. Of all the students who took paracetamol without prescription (self-prescribing), (75%) of them reported doing that based on their previous experiences, (23%) of them based on family advice and only (2%) based on advice from friends table 4.4

Table 4.4: Students' practice towards paracetamol toxicity.

		Frequency
Students‟ use of Paracetamol in last month	Used Paracetamol	139 (81%)
	Did not use Paracetamol	31 (19%)
Dose of paracetamol used	1 tab (500mg)	79 (57%
	2 tabs (1000mg)	53 (38%)
	3 and more tabs	75(5%)
Frequency of paracetamol intake:	Daily	11 (8%)
	Weekly	30 (23%)

	Monthl	45 (32%)
	More than monthly	51 (37%)
Reasons of taking paracetamol:	Headache	120 (91%)
	Flu and influenza	6 (4%)
	Toothache	2 (1%)
	Fever	3 (3%)
	Backache & muscle pain	2 (1%)
Sources of obtaining paracetamol:	Pharmacy	48 (36%)
	Supermarket	72 (52%)
	Friend	3 (2%)
	Family	14 (10%)
Students ways of obtaining Paracetamol:	Used to obtain paracetamol with prescription	35 (25%)
	Used to obtain paracetamol without prescription	135 (75%)
Reasons for taking paracetamol with prescription:	Fear of side effects	9 (47%)
	Avoid wrong doses	7 (37%)
	A void dependence	3 (16%)
Reasons for taking paracetamol without Prescription:	Don’t care	36 (35%)
	Avoid time loss	36 (35%)
	Avoid cost	16 (15%)
	Have enough knowledge	16 (15%)
Factors affecting paracetamol self-prescription:	Previous experience	78 (75%)

	Family advice	24 (23%)
	Friends advice	2 (2%)

Chapter Five

Discussion and limitation

5. 1 Discussion

Paracetamol is an over the counter(OTC) drug which is recommended for indications such as mild to moderate pain and pyrexia according to the British National Formulary [22]. The use of self-medication is highly prevalent in the community [23]. In this descriptive study knowledge, attitude and practice of IT students regarding paracetamol use. The total number of the respondents was 170 students. According to the outcomes of many researches, Paracetamol and non-steroidal ant-inflammatory agents (NSAIDs) were the most frequently consumed medicines [24, 25, 26, 27].

The students‟ knowledge results above show that most of the students have poor knowledge about paracetamol (including knowledge about side effects, indications and maximum dose allowed per day and minimal fatal dose), and that only a small percentage was found to have good knowledge about paracetamol, and these results were similar to other studies in Jordon and UK [28, 29]. The majority of students weren‟t aware of the maximum daily dose and this result was also reported in UK [30]. Regarding minimum fatal dose, about one fifth (17%) of the students were found to be overestimating it compared to higher percentages, sixty two and seventy five percent of the US and UK students respectively [30] [29]. this may be due to variability in knowledge, though poor, about paracetamol among the students in different countries.

Regarding attitude, the majority of the students agree that paracetamol overdose can cause death and these results were similar to other studies conducted among UK and US students [29]. Half of the students thought that taking multi drugs containing paracetamol is not safe and the other half thought it is safe.

With regard to the practice of the students towards paracetamol, the majority of them reported using paracetamol, this may be due to its availability and its effectiveness which was reported by many previous studies [24, 25, 26, 27]. It is found that Headache is the most common cause for using paracetamol among the students who took it which can be explained that the students were under stress most of the time. Of the students who use paracetamol, the majority reported using it without prescription (self-prescribing); this was also reported in previous studies conducted in Sudan, Sri Lanka, Kuwait India and Palestine [31, 32, 33, 34, 35]. However the majority of the students practice self-medication, either because they don‟t care or to avoid time loss. These results were similar to findings in previous studies done in Sri Lanka and Saudi Arabia [32, 30]. Most students took paracetamol without prescription on their previous experiences as reported by

another previous study [32]. Although half of the students thought that self-prescription is harmful, they took paracetamol without prescription, this may be because self-prescription is a traditionally accepted practice. Self-medication might be used as away to cope with the obstacles to medical care [32]. Furthermore a small percentage of students reported using paracetamol with prescription for fear of side effects, to avoid dependence (mainly medical students), and to avoid taking wrong doses Similar picture was also reported by another study done in India [34]. The most common source of paracetamol in students is found to be a supermarket and pharmacy However it is a major issue that most of the pharmacies do not offer any counseling on the proper use of paracetamol, they supply OTC drugs including paracetamol without prescription and only consider profit maximization. It is a big responsibility of pharmacists to reduce the self-medication practice with paracetamol. It is the pharmacists‟ and drug regulatory authority‟s duty to enforce the regulations towards the importance of doctors‟ prescription of drug usage including paracetamol, to reduce misuses and toxicity [32].

5.2 Limitation

The Faculties selected to represent the target population were supposed to be selected randomly from the total number of students in Napata College, unfortunately most of them were closed because of student‟ strike during October/November and only few of them were available to conduct the study.

CHAPTER SIX

CONCLUSION &RECOMMENDATIONS

6.1 CONCLUSION

Our results conclude:

- In conclusion students have poor knowledge about paracetamol indications and doses. With respect to their attitude most of the students had good attitude towards both use of multi-drugs containing paracetamol and paracetamol overdosing, but most of them have poor attitude regarding self-prescription.
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6.2 Recommendations

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1- Raising the issue of awareness and further improve the attitude of students about paracetamol in order to build up new generations combating unregulated paracetamol is very important (. work shop)

2- Pharmacists should advise people when buying medication to read the instruction paper and explain the harm caused by the use of medication without a prescription and the side effects of the drug.

3- Ministry of Health in sudan should take actions in order to make consumer aware about the health hazards of high consumption of analgesics.

4- To share the results of this research with the faculties the data was collected from and to others.

5- To provide a healthy education offensive for rising awareness about paracetamol overdose.

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Questionnaire on Knowledge, Attitude and

Practice of Paracetamol among

Information technology in Napata college At 2020

Please fill in the questions that follow. We thank you for your co-operation.

(Note: some Questions have probably hold multiple answers)

أ – الجنس : ذكر ( ) انثى ( )

ب – العمر : 18 _ 20 21 _ 25 اعلى من 25

ج – المستوى الدراسي : السنة الاولى ( ) السنة الثانية ( ) السنة الثالثة ( ) السنة الرابعة ( )

1- هل تستخدم البندول ؟

1- نعم ☐

2- لا ☐

2. كم حبة من البندول تستخدم في اليوم ؟

1 - 1 _ 4 ☐

2 – 4 _ 7 ☐

3. كم عدد المرات التي تستخدم فيها البندول ؟

1 - مرة في اليوم ☐

2- مرة في الشهر ☐

3 - مرة في الاسبوع ☐

4 - متى ما اقتضت الحاجة ☐

4 . لاي غرض تستخدم البندول ؟

1- للصداع ☐

2 - للبقاء مستيقظ للامتحان ☐

3 - لا لام العضلات ☐

4 - لنزلات البرد ☐

5- هل تظن ان قراءة التعليمات قبل استخدام البندول مفيد ؟

1 -نعم ☐

2 - لا ☐

6 – كم عدد اقراص البندول التي من الممكن ان تسبب التسمم ؟

1- 3 _ 7 ☐

2 - 7 _ 12 ☐

3 - 12 _ 15 ☐

7_ ما هي عواقب استخدام البندول بجرعة زائدة ؟

1- تسمم في الكلى ☐

2 - تسمم في الكبد ☐

3- قرحة في المعدة ☐

4 - نزيف في المخ ☐

8_ استخدم البندول لانه ؟

1- رخيص ☐

2- آمن ☐

3 - فعال ☐

4- يستخدم بواسطة الاهل والاصدقاء ☐

5 - معلن عنه بشكل جيد ☐

9 _هل سبق واقترحت البندول على هؤلاء

1 - الاطفال ☐

2 - الاقارب ☐

3 - الاصدقاء ☐