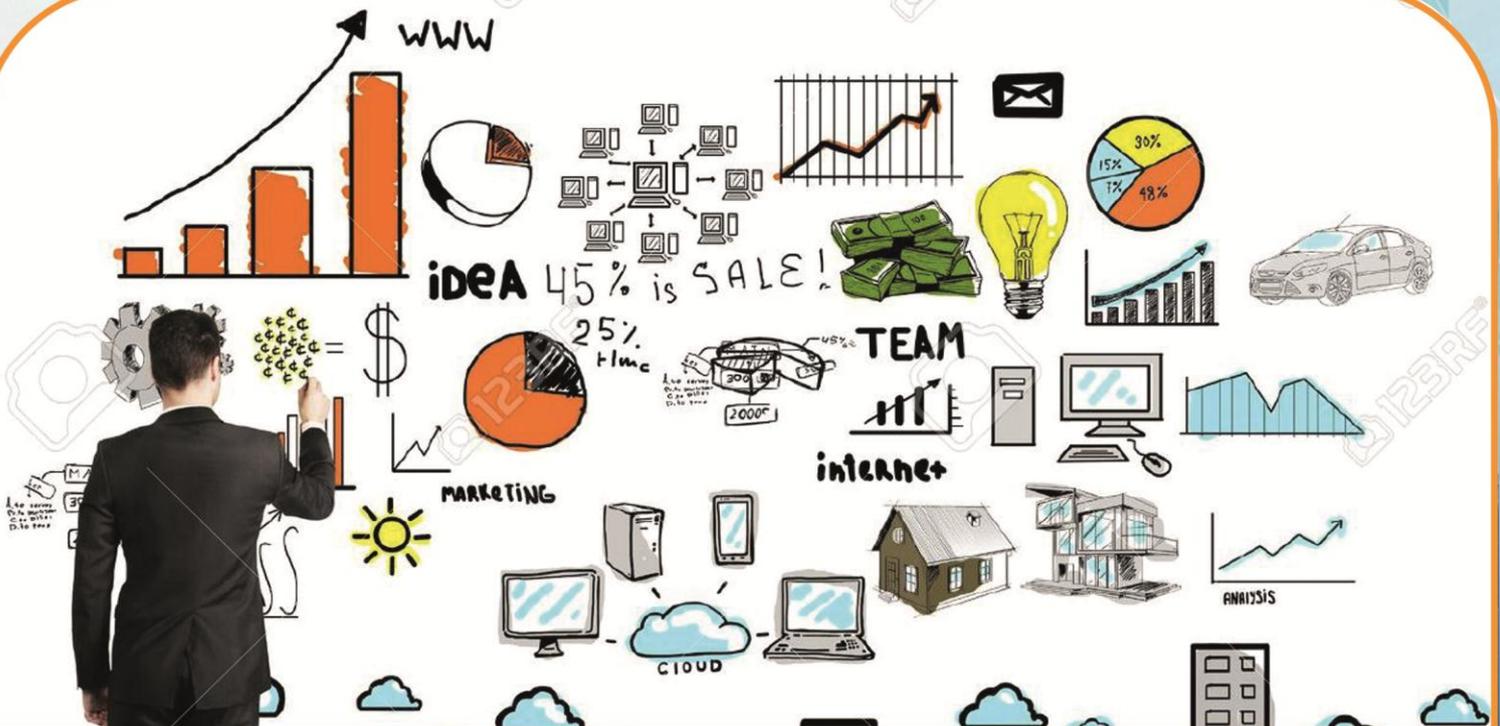




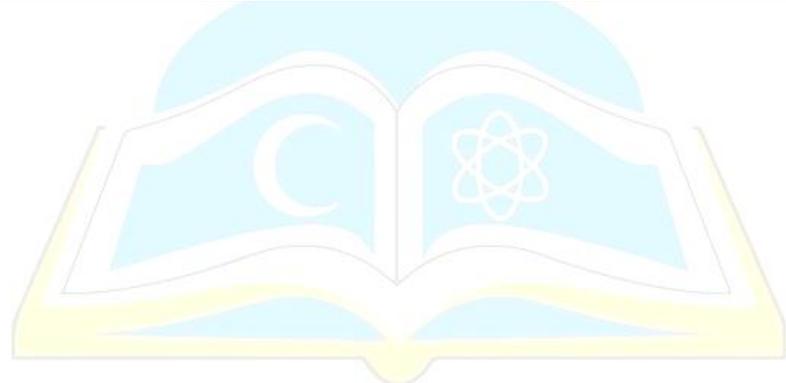
أبحاث التخرج Graduation Research



Title of Research	Diabetes Mellitus Among Children & Its Effect on Kidney Function in Sana'a City, Yemen.
Department	Medical Laboratories
Supervisor	Dr. Rashad Al-Namer
Abstract	
background	Diabetes mellitus is a group of metabolic diseases characterised by chronic hyperglycaemia resulting from defects in insulin secretion, insulin action or both.
Methodology	this study was a across-sectional study included children who casualties by diabetes Mellitus. A total of (51) samples from children have Diabetes Mellitus with (35) blood sample were collected from children between the period from March 2015 to July 2015 in Sana'a city. Two study has been done (for children who ages between one day up to eighteen years).
Objective	To study the effect of diabetes mellitus on kidney function among the children & to determinate the frequency of the disease between males and females.
Result	In the present study a total of (51) samples from children, who they have diabetes mellitus, shows the males was more casualty (51.92%) compare to females (48.8%), the most common cause for all ages of the disease was a genetic inherited factor, followed by the server fright. The most common level of children parents education, mothers who have primary school and fathers who have secondary school and college educational level. The treatments are used (Insulin, Tablets, Diet, Nothing) respectively, the percentage of children who exchange insulin to tablets or exchange tablets to Insulin were very few in the study. There was no any cause detected for the changes related to kidney function test, because the most of children didn't follow up the kidney function test or other test, and this was the reason to start a second study to evaluate the blood glucose level and kidney function test for (34) children who have diabetes mellitus. In most cases of the kidney function test, urea and creatinine levels were evaluated between the normal rang for all age groups of children except only one new born male who has a high level of urea and creatinine According to this study, the ratio of children who have complication in kidney was 1:34 from all cases.
Conclusion	Therefore, we open the way to the researchers in this issue to search and also help arise clinical treatment and effect on health policies for this group in Yemen.
Keywords	Diabetes Mellitus, Kidney function, creatinine level, urea level.

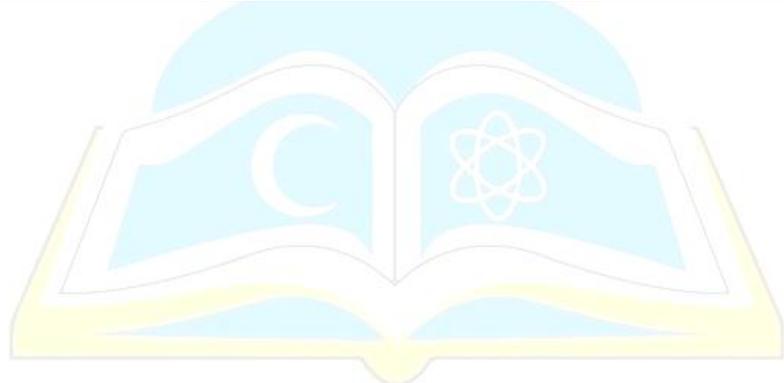
Title of Research	Assess Knowledge Regarding Standard Precautions For Infection Control Among Nurses in Governmental And Private Hospitals in Sana'a City
Department	Medical Community Health
Supervisor	Dr. Gawad Al-Wabr
Abstract	
background	The acquired infections in health facilities are the main reasons that lead to illness or death in both developed and developing countries, so acquired infections in health care facilities are a significant burden on both individuals and countries. The application of infection control is the most important ways to ensure the quality of health services, good practices and prevent acquired infections on health care facilities.
Objectives	This study aimed to assess the level of knowledge among nurses in government and private hospitals in Sana'a city with respect to standard preventive measures for infection control, as well as to identify the relationship between the level of knowledge among nurses and other variable factors.
Methodology	Three government hospitals was selected (Republican Hospital, Military Hospital, and Public Hospital) and as well as three private hospitals (Al-Istishari hospital, Mutawakil Hospital, and Azal Hospital) where these hospitals are large government and private hospitals in capital Sana'a an containing most of the medical departments, where a sample of 196 nurses were selected from sections (emergency, internal Medicine, and Surgery) of those hospitals.
Result	The results showed that the highest percentage of members of the study sample (33.2%) level of knowledge is below the average, followed by 30.6% rate their level of knowledge is weak and proportion of 22.4% in the level of under average, while 12.2% of them in the level of knowledge is good and only 1.5% of the study sample level is very good.
Conclusion	There was no statistically significant relationship between the different variables and the level of knowledge of the members of the study sample, in terms of age variables, experience and qualification didn't affect the level of knowledge among nurses in these hospitals prof of the lack of adoption of these hospitals and training programs sufficient for control of infection hospitals. Also didn't affect hospitals type or sections of nurses working on the cognitive level they have.
Keywords	Standard precautions, infection, Government nurses.

Title of research	Quality Assessment of Some Brands of Paracetamol Tables in Yemeni Market
Department	Pharmacy
Supervisor	Dr. Abdulmajed Al-Saifi
Abstract	
background	Paracetamol is one of the most popular over the counter analgesic and antipyretic drugs quality of the drug according to the modern definition requires that the product contain the quantity of each active ingredient claimed on its label.
Purpose	The present study was conducted to assess the quality of 500gm paracetamol tablets marketed in Yemen.
Methodology	The assessments involved the evaluation of uniformity of weight, diameter, friability, hardness, disintegration and dissolution tests as well as chemical content determination.
Result	All brands of Paracetamol tablets passed on the British Pharmacopoeia 2005 standards for identification, uniformity, of weight, assay of content of active ingredient, water content, hardness friability, disintegration, and dissolution tests.
Conclusion	All brands of Paracetamol tables, only one for four brands meet quality specifications in Pharmacopoeia.
Keywords	Paracetamol Quality, Analgesics, Antipyretic, Paracetamol properties.



جامعة الرازي
ÄL- RAZI UNIVERSITY

Title of research	Quality Assessment of Some Brands of Aspirin Coated Tables in Yemeni Market
Department	Pharmacy
Supervisor	Dr. Abdulmajed Al-Saifi
Abstract	
background	Aspirin is one of the most commonly used drugs in the world. It's (NSAID) used for treating fever, pain and inflammation in the body every country has legislation on pharmaceutical preparations
Purpose	The present study was conducted to assess the quality of 100gm and 75gm coated Aspirin tablets marketed in Yemen.
Methodology	The assessments involved the evaluation of uniformity of weight, diameter, friability, hardness, disintegration and dissolution tests as well as chemical content determination. The results and findings of the present study will be interpreted and discussed.
Result	All brands of coated Aspirin tablets passed the British Pharmacopoeia 2005 standards for identification, uniformity of weight, assay of content of active ingredient, water content, hardness friability, disintegration, and dissolution tests.
Conclusion	All brands of coated Aspirin tables, only one for four brands meet quality specifications in Pharmacopoeia.
Keywords	Aspirin, Friability, Hardness, Dissolution test, British pharmacopoeia.



جامعة الرازي
ÄL- RAZI UNIVERSITY

Title of research	Assessment the quality of national Atrova 10MG tablet versus international with counterfeiting drugs
Department	Pharmacy
Supervisor	DR.NABIL ALRABAEI
Abstract	
background	<p>Smuggling drugs is considered an international issue that threatens the health and economic state in most of the world countries ,especially the pour countries like Yemen. Some of patients may attend to use these medicines because of mistrust in the local product although these products equal to the products of the original and the international companies in quality and in low price.</p> <p>The final solution for this issue we tried to shed the light on some facts for this phenomenon and to prove local products quality comparing of the original as (reference) and smuggling product.</p>
Methodology	<p>This search included a survey conducted in four head governorates such as Sana`a, Aden, AL Hudaidah and Dhamar.</p> <p>These studies proved that smuggling drugs were widely spreading in the costal governorates in which the cast lines are available especially AL Hudaidah and Aden .</p> <p>Questioners also included the drugs groups mostly counterfeited and the results were as follow.</p>
Result	<p>The most widely counterfeited drugs group is the over the counter drugs (O.T.C) such as Aspirin ,Mefenamic acid and Ibuprofenetc.</p> <p>The group is followed by the Antibiotic group especially the Amoxicillin.</p> <p>The third group was the specialized drugs like the hypertension , hypoglycemic, hypocholesterolemic, and Contraceptive which are the main in this search because of its healthy , economic effects on the patient.</p> <p>The Hormones places the final group.</p> <p>With refer to the given results from this survey , we chose a drug ATORVA® 10MG(Atovastatin) Which is product by the Modern medical Company as local manufacture to prove its quality against the original (LIPTOR®) 10MG from the same sort and which is also smuggling . This product is considered the most widely used to hypoclostrolemic treatment which were shown in the survey as the most counterfeited drugs in our country and highly pricing comparing of the local drugs.</p>
Conclusion	The results of these analysis proved the risks associated with counterfeited drugs. And also proved that the ATORVA ®,the local product was better than the counterfeited and same how equal to LIPTOR as a reference sort for this analysis.
Keywords	Atrova, Liputor, Amoxicillin, Mefenamic Acid.

Title of research	Knowledge & Practices Regarding Needle Stick Injuries Among Nurses in Governmental Hospital of Sana'a
Department	Nursing
Supervisor	Dr. Rashad Al-Namer
Abstract	
Introduction	Nursing staff for an important group for occupational exposure to needle stick injuries as they are directly involved in the patient care activities, an estimated 74% of all health care worker needle stick injuries affect nurses, and almost 90% of all the needle stick injuries occurred in nurses of third world countries where there is lack of an assessment of knowledge and practices of nursing staff towards needle stick injury.
Methods	This study design was a cross-sectional , conducted from Aug-September 2015. Self-administrated questionnaire was completed by 190 of nurses in selected hospital. Data was analysis by SPSS version 19 and level of significant was at $p < 0.05$.
Results	Our result showed that (42.6%) of participants had good knowledge regarding NSI, (30%) had fair knowledge and (27.4%) of them had poor knowledge However , our finding showed that (50.6%) of participants wear had poor practice regarding NSI, the level of the knowledge with level of the practice was positive statistically significant correlation between $R = 0.650$ & p value < 0.0001 the knowledge and practice on NSI was significantly associated with educational level and attending to ($p = 0.05$).
Conclusion	We conclude that the practices and knowledge NSI were low and its emphasized the needs for intensive enlightenment programs to educate nurses on needle stick injuries prevention and various infection control program and policies .
Keywords	knowledge , practice , Nurses , Needle STICK Injuries.

ÄL- RAZI UNIVERSITY

Title of research	Perception of Anaesthesiologists Toward Patient Anxiety Under Regional Anaesthesia
Department	Anaesthesia
Supervisor	د/ وائل العزاوي ود/ عبد الحميد الذيفاني
Abstract	
background	Anxiety is an emotional state characterized by apprehension and fear resulting from anticipation of a threatening event .common causes of patients' anxiety are fear of surgery anaesthesia and previous unpleasant experience of anaesthetics or surgery.
Objective	The aim of this study was to assess anaesthesiologists perception of patients anxiety under regional anaesthesia , Sana'a city Hospitals collect necessary data after obtaining verbal consents .
Methodology	A cross-sectional descriptive design was utilized in the current study. Study populations composed 73 anaesthesiologists working at Sana'a city Hospitals Yemen A self-administered questionnaire adopted from JIaIa et al 2010 was used to collect necessary data after obtaining verbal contents.
Results	The participants comprised 73 anaesthesiologists, more than the half worked full time duty ,worked for ≤ 5 years and their age between 31-40 years 30.1% had Arabic Board , Different advice from surgeon and anaesthesiologist increases patient anxiety the common causes of patient anxiety were fear of anaesthesia and misinformation from lay people family , friends . Moreover ,communication was the main strategy used by anaesthesiologists to control patient anxiety.
Conclusion	Fear of anaesthesia misinformation and fear of surgery were the most common causes of patients anxiety communication ,use of relaxation techniques and sedation were the most common techniques used to manage patients anxiety regional anaesthesia provide good analgesia and promote patients satisfaction.
Keywords	Patient Anxiety, Regional, Anaesthesia, Anaesthesiologists.

جامعة الرازي
ÄL- RAZI UNIVERSITY

Title of research	Potential In Vitro Anticandidal Activity of Topical Hydrophilic Preparations of Yemeni Alum
Department	Pharmacy
Supervisor	Dr. Abdulmajed Al-Saifi
Abstract	
background	Potassium alum is a natural material that have been and still used for different purposes in Yemen and numerous countries in the world.
Purpose	This study were formulate and evaluate aqueous solution, glycerites & cream hydrophilic preparations of Yemeni alum appropriate for anticandidal topical applications. The identification and assay of alum, as raw material, were in compliance with British pharmacopeia specifications of substance.
Methodology	Alum was then formulated as five non-pH adjusted aqueous solutions, eight pH- adjusted aqueous solutions, eight glycerite formulation and three oil/water cream formulation.
Result	The alum content in non-pH adjusted solutions ranged from 1-30% while the pH-adjusted formulation (each contained 5% of alum) had different pH values ranging from 3.5 to 7. The glycerite formulations included 4 water-free and 4 water-containing formulations and each different alum concentrations ranging from 5-30% the oil/water cream formulations contained alum in the range of 5-15% evaluation of formulations included testing of the alum content % formulation pH. Furthermore the anticandidal activity of alum in those results, three formulations against candida albicans was tested. Based on evaluation results, three formulations including one non-pH adjusted aqueous solution, one water-free glycerite and oil/water cream, with alum concentration of 5%, 10% and 10% respectively, showed remarkable anticandidal activity when compared to brands of clotrimazole
Conclusion	Therefore these formulations of Yemeni alum are promising for large scale production. Yet, a stability and sensitivity testing on lab, animals remain to be established.
Keywords	Potassium alum, aqueous, solution, British pharmacopeia, candida albicans, anti-candidal, activity.

جامعة الرازي
ÄL- RAZI UNIVERSITY

Title of research	Knowledge of intensive care nurses on evidence based guidelines for prevention of ventilator associated pneumonia
Department	Nursing program
Supervisor	Dr.Saleh Al-Ddin Ali Al-Maswari
Abstract	
background	<p>Ventilator associated pneumonia (VAP) is problem in intensive care unit which of increasing from the rate (morbidity, Mortality) and this problem worldwide and dramatically, infection because absent infection control system.</p> <p>The knowledge of evidence based guidelines on the prevention of (VAP)will be reduce the risk of (VAP) and decrease morbidity and mortality of mechanically ventilated patients in ICU.</p>
Purpose	To determine the knowledge of nurses working in ICU with respect to evidence based guidelines for prevention of ventilator associated pneumonia.
Methodology	<p>Non experimental descriptive cross-sectional study was used, the first phase of the study consisted in validating the data collection instrument for applicability in Yemen.</p> <p>The second phase of the study used the instrument validated in phase one to test the knowledge of nurses working in ICU.</p> <p>Data analysis was done by means of descriptive and inferential statistics using frequency distributions, cross-table, means and standard deviations.</p>
Result	<p>The knowledge 353 nurses working in ICU of the public and private hospitals. Most nurses have an experience of 1 to 5 years in ICU nursing, working in the public hospitals, have a nursing degree after the secondary school.</p> <p>Nurses working in the ICU knew only half of the VAP prevention measures recommended by the guidelines, the average total scores of the total participating nurses is 50.9%.</p> <p>No substantial differences were found between the knowledge score of males and females or Yemeni and non-Yemeni.</p> <p>Similarly there were no substantial differences between the knowledge score of nurses holding a special degree in ICU nursing and those not holding it or between nurses working in the teaching hospitals and those working in the non-teaching hospital.</p> <p>Nurses working in the public and police hospitals had better scores than those working in the private and military hospitals. Nurses holding a bachelor degree or higher in nursing had better scores than those holding a nursing degree after secondary or preparatory school.</p>
Conclusion	The finding of the study demonstrate that ICU nurses' awareness about VAP prevention guidelines is low and stress the need for education based on current evidence.
Keywords	Staff nurse, knowledge nurse, ICU nurse, ventilator associated pneumonia (VAP), Risk of VAP, Mechanical ventilated patients.

Title of Research	Comparative Study Of Different Glimepiride Tablets Marketing In Yemen.
Department	Pharmacy
Supervisor	Dr.Alaa Abdul Kareem Al-Maktari.
Abstract	
background	In poor countries such as Yemen, the cost of drugs is a factor affecting the patient's decision. Generic medicines are introduced as cheaper alternatives to the high cost brands. However, it has been believed that generic medicine are inferior in quality compared to the branded medicines.
Methodology	This study is to perform a comparative evaluation of the physicochemical properties and drugs content of three commercially available brands of Glimepiride tablets marketed in Yemen. And through the evaluation of active content (drug content), dissolution release profile as well as the dissolution similarity factor (f_2), and also disintegration, hardness, thickness, weigh variation and friability we evaluated according to USP pharmacopoeia.
Result	The results of the three products, active content, disintegration time, friability, weigh variation and thickness are acceptable within limits. But the release rates were well above 80% except the Glemax tablets (68%) and the result of similarity factor in dissolution profile between Amaryl, Glemax are similar (>50) but there is a dissimilarity in profile between Amaryl, Glemax and we noted in the hardness test of that Glemax the only one outside the limit (NMT80N). This may be due to higher amount of binder used in formulation and this result ensure the effect of binder on drug release from Glemax.
Conclusion	We recommend using local products (Glimaryl) as an alternative to the original products because local products have the same international standards for the constitutions of medicine and less cost.
Keywords	Glimepiride, Brands Drugs, Dissolution Release.

جامعة الرازي
ÄL- RAZI UNIVERSITY

Title of research	Knowledge, Attitudes And Practices Regarding Hepatitis B & C Viral Infection Among Barbers In Sana'a City
Department	Community Health
Supervisor	Dr. Abdulwaheab Al-Kuhlani
Abstract	
background	Globally over 2 billion people have been infected with hepatitis B virus and an estimated 170 million people are chronically infected with hepatitis C virus. The knowledge, attitude and practices of HBV and HCV have been investigated in many groups but there is no available data and published studies among barbers in Yemen.
Objective	The objective of the study was to investigate the knowledge, attitudes and practices regarding hepatitis B and C amongst barbers in Sana'a city.
Methodology	The study was conducted among barbers' in 10 districts in Sana'a city, Yemen. Within each districts were sampled using a random sampling methodology designed to represent barbers from the districts. Two staged random sampling technique was used to select 234 barbers from 10 districts. The first stage sampling farm consisted of all districts in Sana'a city. Barbers shop were selected with a probability proportional to the district's enrolment size. 12 barber shop were selected from each district to achieve the target sample size. The second sampling stages consisted of systematic equal probability sampling (with a random start) of barbers from each selected barbers shops in districts. The sample size was calculated using Epi Calc. Considered the following; 95% (1.96) confidence level proportion (p)=86% (based on previous study) and precision (q)=4.5% of prevalence were taken for calculation.
Result	The age mean age was 29.2+- 7.4 year and 92.1% was married. The majority of barbers 43% completed secondary school and the mean duration of employed as a barber was 8.8+-5.9 year. Overall, 25.2% had poor knowledge 50.4% had moderated knowledge and 24.4% had good knowledge. The findings regarding attitudes showed that, only 7.7% of barbers reported that they had been vaccinated against HBV. 41.3% had not received any information from media. 54.9% of barbers didn't agree that is was essential to have periodic screening tests for HBV and HCV in population; however 67.5% would themselves like to be tested for these infections 34.7% reported a history of blood transfusion and 8.8% had surgical operation. Barbers practices showed that 32% washed their hands before attending each client, 59% cleansed instruments with disinfectants between clients, 88.7% washed their instruments after shaving the clients, 96.1% washed razors with tap water only, 92.6% also washed razors with an antiseptic solution after every use, 87% used a new blade on new clients and 55% used disinfectants for skin cuts. 73.8% used same blade for armpit shaving. 75.9% of barbers cut clients with razor. Most 97.8% of barbers disposed of used blades in the regular garbage system and 87% changed disinfectant frequently.
Conclusion	Increase awareness, general reduction of these exposures and assuring sterile practices and safety precautions are logical goals for intervention it is essential and urgent to promote awareness of these risks among everyone, especially barbers, and client who frequent barber shops.
Keywords	Hepatitis B Virus, Hepatitis C Virus, Infected Barbers.

Title of research	Phytochemical Study And In And Vitro Evaluation Of Antibacterial Antifungal Of Dragons Blood Plant
Department	Pharmacy
Supervisor	Dr. Rashad Al- Namer
Abstract	
background	dracaena cinnabaribalf is species plant in agavaceae family. It is tree endemic to the island Socotra (Yemen). the resin of this tree, dragon's blood is known in Arabia as ((dammala chawin)) or cinnabar. It has been used in traditional medicine for the treatment of gastric sores diarrhea , dysentery ,as haemostatic, anti-ulcer remedy , anti-spasmodic, analgesic and anti-inflammatory.
Objective	To evaluate the antifungal ,antibacterial activities and identification of chemical constituent of Dracaena Agavaceae Dracaena cinnabariresine collected from Socotra Island (YEMEN).
Methodology	the resine of Dracaena cinnabari was extracted by ethanol solvent usingsoxhlet apparatus and evaluated for antibacterial activity against Gram positive bacteria as staphylococcus aureus and B-hemolytic streptococcus and gram negative bacteria as Escherichia coli and Salmonella typhimurium and antifungal activity against Candida Albicana .
Result	the result show to possess strong sensitivity response to ethanolic extract of Dracaena cinnabari comparing with three broad spectrum antibiotic (Erythromycin ,Gentamycin ,Chloramphenicol). Phytochemical analysis demonstrated the presence of Terpenoids ,Tannins, Alkaloids, Flavonoids ,glycosides ,phenols, steroids and other organic compounds which could be reason for antimicrobial activity of Dracaena cinnabari .
Conclusion	the result show to possess strong sensitivity response to ethanolic extract of Dracaena cinnabari comparing with three broad spectrum antibiotic (Erythromycin ,Gentamycin ,Chloramphenicol). Phytochemical analysis demonstrated the presence of Terpenoids, Tannins, Alkaloids, Flavonoids ,glycosides ,phenols, steroids and other organic compounds which could be reason for antimicrobial activity of Dracaena cinnabari .
Keywords	Dracena Cinnabari; Antibacterial Activity; Antifungal Activity; Phytochemical Analysis.

Title of research	Hepatitis B Virus & The Extent of The Medical Students Awareness of Its Infection
Department	
Supervisor	Associate Professor Dr. Rashad Al-Namer
Abstract	
background	Hepatitis B is the most common serious liver infection in the world. It is caused by hepatitis B virus that attacks liver cells and can lead to liver failure, cirrhosis of cancer of the liver.
Purpose	This study aimed to test researchers hypothesis that is there inadequate knowledge and awareness of hepatitis B infection among the general population in Medicine college. The researchers used the descriptive analytical approach to achieve the aims of the study.
Methodology	The tool of the study is structured questionnaire consisting of 18 multiple-choice questions was designed to assess respondents understanding and perception a out HBV infection. The questionnaire was developed in English by a panel of herpetologists. The original version were used and tested and modified accordingly. Content validity was established and so the test-retest reliability was assessed b delivering the questionnaire to 20 subjects twice at an interval of 14 days.
Result	<p>Approximately half of respondents (55%) were aware that hepatitis B virus is the most common cause of chronic viral hepatitis in Yemen.</p> <p>Regarding knowledge about the mode of transmission, mother-to-infant transmission and blood contact were recognized as risk factors by 67% and 65% of respondents, respectively.</p> <p>Transmission by sexual contact, sharing a razor or toothbrush and tattooing or body piercing were appreciated by 44%, 41% and 37% of respondents, respectively.</p> <p>A majority (73%) had the mistaken belief that the virus is transmitted by eating contaminated seafood.</p> <p>Over half of respondents (53%) Knew nothing about the clinical presentation of acute hepatitis B.</p> <p>Only 35% of respondents realised that periodic abdominal ultrasonography examinations are indicated for asymptomatic hepatitis B carriers. While 51% of respondents reported being tested for hepatitis B virus infection, only 36% acknowledged being vaccinated against the infection. Education level, occupation and marital status were factors associated with both hepatitis B virus screening and vaccination.</p>
Conclusion	This finding corroborated previous over case studies, which showed that Yemeni students had a general a awareness of HBV transmission through sexual contact or tooth brushes.
Keywords	Hepatitis B; herpetologists, questionnaire, Risk factors.

Title of research	Anaesthesiologists' knowledge about anaesthesia machines checkout
Department	
Supervisor	د/ وائل العزاوي ود/ عبد الحميد الذيفاني
Abstract	
background	Background: The anaesthetist has a primary responsibility to understand the function of the aesthetic equipment and to check it before use.
Purpose	The aim of this study was to assess the anaesthesiologists' knowledge about anaesthesia machines checkout in Sana'a city, Yemen.
Methodology	A cross-sectional descriptive design was utilized in the current study. Study populations composed 57 anaesthesiologists working at Sana'a city Hospitals, Yemen. A self-administered questionnaire adopted from FDA 1993, was used to collect necessary data, after obtaining verbal consents.
Result	Regarding emergency ventilation equipment checkout, 93% of the anaesthesiologists verify the equipment for availability, and 84.2% checked them for functioning, and 73.7% checked oxygen cylinder supply. About three quarters (75.4%) of them adjusted the flow of all gases through their full range, and more than two thirds (68.4%) ensured proper connections between the scavenging system and both APL (pop-off) valve and ventilator relief valve. In final status check of machine, 56.1%, of the participants recognized APL valve open, and two thirds of them incorrectly reported setting vaporizers off.
Conclusion	The anaesthesiologists indicated generally inadequate checkout of the anaesthesia machines, scavenging system, and machine master switch and flow control valves, which indicates possibility of leak. Lack of complete checkout may put the patient at risk for intra-operative malfunctions as well increase operating room pollution and exposure operating room personnel to aesthetic gases.
Keywords	Anaesthesiologists, Anaesthesia, Machines, Control Values.