ABSTRACT
Misuse of antibiotics leads to antibiotic resistant. It is continuous challenge for the medical professionals. In developing countries the antibiotics are sold as over the counter drugs is one of the important reasons for the antibiotic resistance and misuse of it. A Descriptive study was conducted for six months period in Thamar province. Misuse of antibiotics was assessed by a questionnaire for the healthcare professionals and the patients. Responded questionnaire from 200 patients selected randomly from the Al-Wahdah Hospital area, and 220 prescriptions from various doctors with multiple specialties from the same province were collected. Among the 200 participants, 82% reported antibiotic use without medical prescription, and the remaining 18% took the antibiotics with medical prescription. About 68.18% of all medical prescriptions in this study were without diagnosis, only 48.10% of doctors dependent on laboratory investigations, and all of the doctors’ prescriptions (100%) in this study they prescribed antibiotics without culture sensitivity test. Most of the public did not have knowledge about the grave hazards of misuse of antibiotics, about 64% of them they did not have any awareness about the misuse of antibiotics and 36% of them known about it. The highest percentage for taking the antibiotics without medical prescription were in sore throat about 54.9% followed by abdominal pain 10.4% and Urinary tract infections 8.5%. Prescriptions without diagnosis were 68.18%, about 12.27% include drug-drug interactions, 11.36% with dose errors. The most common antibiotics with medical prescription are third generation cephalosporin about 32.73%. The antibiotics that are dispensed without prescription are penicillins 26.92%. Most of the antibiotics with medical prescription were in sore throat about 54.9% followed by Urinary tract infections by antibiotics 8.5%. Prescriptions without diagnosis were 68.18%, about 12.27% include drug-drug interactions, 11.36% with dose errors. The most common antibiotics with medical prescription are third generation cephalosporin about 32.73%. The antibiotics that are dispensed without prescription are penicillins 26.92%. A higher percentage (65.0%) of antibiotic use was recorded in Ghana and between 30.0% and 60.0% of the patients in the primary health care centers received antibiotics in the developed and the developing countries. Similarly, a study which was carried out in Cambodia showed that the percentage of antibiotics which was used ranged from 10.0% to 66.0%.

Keywords: Antibiotic Misuse; Antibiotic hazards; Antibiotics awareness; Over the counter antibiotics; Yemen.

INTRODUCTION
In Yemen, as in the other developing countries, the quality of the health services is far from satisfactory. The inappropriate, ineffective and the inefficient use of drugs commonly occur at different health facilities. Irrational prescribing is a habit which may lead to ineffective treatment, health risks, patient non-compliance, drug wastage, wasting of resources and needless expenditure. Several factors affect irrational prescribing such as patients, prescribers, the workplace environment, the supply system (including industry influences), weak governmental regulations, the lack of drug information and the problem of misinformation.

Despite the effectiveness of antibiotics in the treatment of numerous bacterial infections, it is often used inappropriately. This misuse of antibiotics is currently one of the major public health issues worldwide. Although antibiotics are targeted to kill or inhibit the growth of bacteria and have no effect on viral agents it is often inappropriately used to treat viral infections, such as most of Upper Respiratory Tract Infections (URTIs). Problems associated with the overuse of antibiotics include development of antibacterial resistance, raising costs of health services, and the development of side effects (e.g. adverse gastrointestinal effects). Worldwide, antibiotics are the most commonly prescribed drugs for children, especially for acute respiratory illnesses and diarrhea. Increasing antibiotic resistance is usually attributed to overuse and misuse of antibiotics, it has been estimated that use is unnecessary in 20%-50% of the courses unfortunately; misuse of antibiotics is causing the emergence of resistant pathogens early in life, especially in the developing world where antibiotics are available without prescriptions.

It is well documented that the indiscriminate use of antibiotics has led to hospital, waterborne and food-borne infections by antibiotic-resistant bacteria, enteropathy (irritable bowel syndrome, antibiotic-associated diarrhea

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etc.), drug hypersensitivity, and the consequences are severe; infections caused by resistant microbes fail to respond to treatment, resulting in prolonged illness and a greater risk of death. Self-medication can be 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. It is worth knowing whether the health facilities adhere to the WHO standards of the prescribing practices and to investigate the differences in the prescribing practices between the studied health facilities.

Antibiotic misuse was found to be significantly frequent in children, especially when presenting with viral upper respiratory tract infections. Several contributing factors are evidently associated with the overuse of antibiotics both at the patient’s (or parents of children) level and doctor’s level, namely: cultural factors, behavioral characteristics, socio-economic status, and level of education. Furthermore, doctors usually relate their pattern of over prescribing to patients’/parents’ pressure. In addition, lack of health education is one of the major contributing factors in the overuse of antibiotics. It is estimated that 20-50% of all antibiotics use is inappropriate, resulting in an increased risk of side effects, higher costs and higher rates of antimicrobial resistance in community pathogens. The objective of the study is to estimate the prevalence of misuse of antibiotics, and analyzing the awareness of antibiotic hazard among the public and medical professionals in Thamar province, Republic of Yemen.

MATERIALS AND METHODS
A Descriptive study was conducted for six months period in Thamar province located 100 km away from the capital Sana’a. Questionnaire was developed to get data from patients and pharmacists. Prescriptions were used to analyze the data from physician’s part. The questionnaire of patients included socio-demographic variables as Age, Gender, level of education and economical status, residence area. Misuse of antibiotics was assessed by the following questions: have you used antibiotic without physician prescription? What was the reason for refraining from visiting doctor? Have you completes the course of antibiotic medication? And further more questions. The questionnaire for pharmacies included different questions on the sales of antibiotics, selection of antibiotics and the important questions to analyze the misuse of antibiotics is that the antibiotics given to customers without a doctor’s prescription.

Sample Size
Responde questionnaire from 200 patients selected randomly from the Al-Wahdah Hospital, and the Thamar general Hospital in Thamar province, 100 responded questionnaires from pharmacists, and 220 prescriptions from various doctors with multiple specialties from the same province were collected.

RESULTS AND DISCUSSION
About 200 patients selected randomly from Al-Wahdah Hospital, and General Thamar Hospital, 220 medical prescriptions, and 100 pharmacies from area mentioned above, during the six month period.

Demographic data
About 200 persons agreed to participate in this study. Males represented 65% of the participants, while females represented 35%, the highest level of education for participants were 55% secondary school, while 16% University & Postgraduates, and illiterates 29%, 48% of the participants were from urban population and 52% of the participants were from the rural population.

Public awareness
Among the 200 participants, 82% reported antibiotic use without medical prescription (figure 1), and the remaining 18% took the antibiotics with medical prescription, and the figure 2 shows the details of the awareness about misuse of antibiotics. We also found that the public did not have knowledge about the grave hazards of misuse of antibiotics, about 64% of them they did not have any awareness about the misuse of antibiotics and 36% of them known about it.

Reason for taking /misuse of antibiotics
The highest percentage for taking the antibiotics without medical prescription were in sore throat about 54.9% followed by abdominal pain 10.4%, Urinary tract infections 8.5% and others 26.2% like superficial wounds, etc. The reason for taking antibiotic without a medical prescription (figure 3) was 33.5% due to economic circumstances, 34.8% was due to high confidence on pharmacist, 27.4% was due to repeat the previously prescribed drugs, and 4.3% of was due to no or less benefit from previous treatment.

Medical prescription analysis
Table 1 reveals the data on medical prescription analysis, about 68.18% of all medical prescriptions in this study was without diagnosis, only 48.18% of doctors dependent on laboratory investigations, and all of the doctors prescriptions (100%) in this study the prescription of antibiotics without culture sensitivity test.
From 220 medical prescriptions, about 12.27% include drug-drug interactions, 11.36% with dose errors, and 3.18% with contraindicated antibiotics. The most common antibiotics with medical prescription (Table 2) are third generation cephalosporin about 41.36%, followed by penicillin 31.36%, quinolone 16.8%, and macrolide 10%, while antibiotics that are dispensed without medical prescription (Table 3) were Penicillins 73.18% followed by Quinolones 41.36%, Tetracyclines 36.18%, Sulphonamides 30%, third generation Cephalosporins 24.54% and Macrolodes 22.27%.

In the new era of medicines most of the developing countries are facing the problems of antibiotics resistance. In the new era of medicines most of the developing countries are facing the problems of antibiotics resistance. Worldwide the misuses of antibiotics are growing due to less awareness. A higher percentage 65.00% of antibiotic use was recorded in Ghana and between 30.00% and 60.00% of the patients in the primary health care centers received antibiotics in the developed and the developing countries. Similarly, a study which was carried out in Cambodia showed that the percentage of antibiotics which was used ranged from 10.00% to 66.00%. However, the average percentage of the antibiotics which was used in Malaysia was lower 23.2% and even lower percentages of antibiotic use were reported in Mongolia 20.60%. Antibiotic use in Yemen is high and the statistics of the Ministry of Public Health and Population showed that the antibiotics group was the third group which was imported through the years 2002 and 2003 with percentages of 13.7% and 13.0% respectively from the total number of imported drugs. Also a study which was performed in different general public health facilities in Yemen showed that the percentage of prescriptions which contained antibiotics was 61.00%. The emergence of bacterial strains resistant to antimicrobial agents presents a growing concern worldwide. The relationship between antibiotic use and resistance development is strong and supported by several studies.

**REFERENCES**


