

Detection of Hepatitis B and C to people indifferent area in Egypt with correlation to diabetes and hypertension

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Abstract:

The “silent epidemic” of viral hepatitis affects a large part of the world’s population without due attention from the health sector is increasingly recognized as a considerable public health problem. It is estimated that 240 million people are chronically infected with hepatitis B (HBV) and 170 million are chronically infected with hepatitis C (HCV). These numbers far exceed the number of people living with HIV, estimated at 34 million. People who inject drugs (PWID) are a key population affected by HBV and HCV. There are approximately 16 million people who inject drugs in 148 countries (Mathers BM et al 2008). In 2011 it was estimated that 1.2 million people who inject drugs are infected with HBV and 10 million people who inject drugs are infected with HCV (Nelson PK et al,2011). About 60 million people in the U.S.have hypertension , making it the most common heart disease risk factor. Nearly one in three adults has systolic blood pressure (the upper number) over 140, and /or diastolic blood pressure (the lower number) over 90mmHg.Diabetes can contribute to significant heart damage, including heart attacks and death (David,j.2005).

Objectives: This study assessed seroprevalence rates of HIV, hepatitis virus (HBV), and hepatitis C virus(HCV) among individuals).

To raise awareness on how to prevent hypertension ,tachycardia and hyperglycemia among individuals.

Methods: participants (n=670)were from hospital worker, students in secondary school and resident public in Giza .

Results :the prevalence of HCV in this sample were higher (11.34%) than those who were infected with HBV(3.73%) ,also founded (26.8%)were suffering from hyperglycemia, (9%) of the participants had tachycardia, while (20.8%)of the participants had hypertension.

Conclusion: Elevated rates of HCV,HBV, Hypertension, hyperglycemia and tachycardia were found. which are frequently undetected individuals problem, so fail to receive appropriate treatment to limit organs damage , unknowingly lead to complications and may be a source of infection to others.

Date of Submission: 06-10-2021

Date of Acceptance: 21-10-2021

I. Introduction:

Over the past decade it has been obvious that the prevalence of type 2 diabetes is increasing rapidly. Unless appropriate action is taken, it is predicted that there will be at least 350 million people in the world with type 2 diabetes by the year 2030(de Marco R,1999). In the same time hypertension is one of the most crucial health problems and the most common chronic disease in developed and developing countries. It is called the silent killer which is usually diagnosed incidentally. According to a report from the World Health Organization (WHO 2010),there was an estimated 972 million people with hypertension in the year 2000. This number predicted to grow to 1.5 billion by 2025. Although hypertension is a preventable and treatable condition but without treatment it leads to serious and life threatening complications such as heart, kidney and brain disorders which in most cases result in patient's disability, this is especially in developing countries with high illiteracy rates (Maher et al.,2010). The most important barrier in diagnosis and control of this condition is the lack of knowledge and awareness about various aspects of hypertension, in addition, there are several reasons for uncontrolled hypertension including undiagnosed hypertension, inappropriate or insufficient medication, and wrong combination of drugs (Viera et al., 2008).

Hepatitis B (HBV) and C (HCV) are disease-causing viruses that attack the liver.

The viruses can cause lifelong infection, cirrhosis (scarring) of the liver, liver cancer, liver failure, and death (CDC, 2002). However, most who are infected have no symptoms and are unaware that they carry the virus and can pass it on to others. Modes of transmission are via direct contact with the blood or body fluids of an infected person. Evidence indicates that HBV can be completely cleared from the body, that is, a person can be “cured” of HBV, in upwards of 90% of all cases (American Liver Foundation, 2000). Fortunately, there is a vaccine available for HBV, though unfortunately, this is not the case for HCV. Serologic markers are used to detect acute and chronic HBV and HCV (Patlack, 2003).

This study was conducted to evaluate the relationship between lifestyles, awareness, individual behaviors , health & illness. This can only be achieved based on the knowledge derived from the public. It was also conducted to improve health services, spread of viruses HBV and HCV between hospital workers and to the surrounding community and get feedback to the health care institute to conduct more control for infection spread.

II. Materials and Methods:

Clinical specimens:

A total of 670 blood samples were taken male(430) and female(240) from them(170) hospital workers ,(123)from secondary school in Giza and (377) public resident in Giza all of them accepted to participate. Determination of Hepatitis B and C , the level of Fasting blood sugar , measure blood pressure and heart rate. The study was conducted within 15 days, from 5 April to 20 April 2020.

Detection of Hepatitis B and C

Blood samples were stand at room temperature for 30 min then centrifuged at 1500 rpm for 3 min. Hepatitis B and C were detected using Rapid test device serum kit (REF IHC 302 Abon Biopharma (Hangzhou) Co.,Ltd)

Physical Measurements

Blood pressure measurement:

- Blood pressure (BP-mmHg) was measured by trained and certified personnel. BP was measured only once using a mercury column sphygmomanometer and standard protocol .The first and the fifth korotkoff sounds were taken as indicative of systolic and diastolic B.p. At each examination, participants were asked if they used antihypertensive medications for the specific purpose of lowering elevated blood pressure. Select the size of the cuff based upon the size of the patient. (the cuff size have a bladder width of at least 40% of limb circumference and length at least 80% of limb circumference) . the average adult cuff is 12 to 14cm wide and 30 cm long. Calibrate the sphygmomanometer, wrap the cuff firmly around the arm. Center the cuff bladder directly over the brachial artery. Position the patient's arm at the level of the heart. Palpate the systolic pressure before auscultation. This technique helps to detect the presence of an auscultatory gap more readily. Measurements were taken after the person had been seated in a chair, remaining still for at least 5 minutes with their feet on the ground, the site where the B.P was measured and the position of the patient was record.

Heart rate measurement :

- Heart rate was checked for each participant either palpating radial pulse or auscultation apical pulse by stethoscope within full minute according to the participant condition.

Blood sugar measurement:

- Blood sugar was measurement by one drop of blood was taken on a test strip .Then will put the test strip into meter that shows blood sugar level less than 15 seconds.

III. Results:

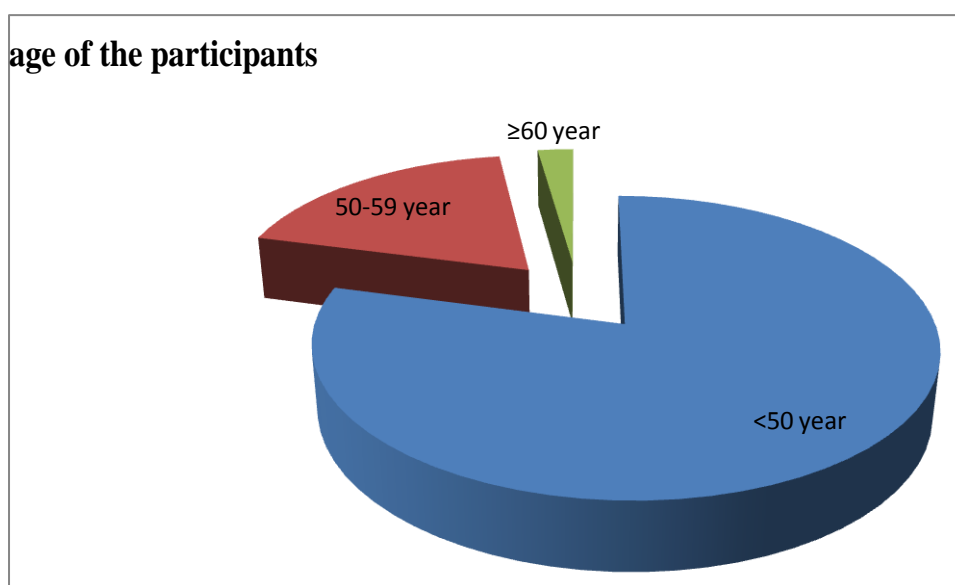


Figure (1): Distribution of the participants in the survey according to their age

The figure showed that the prevalence of participant's age below 50 were 79% while the age of participants above 50 were 21% during the survey.

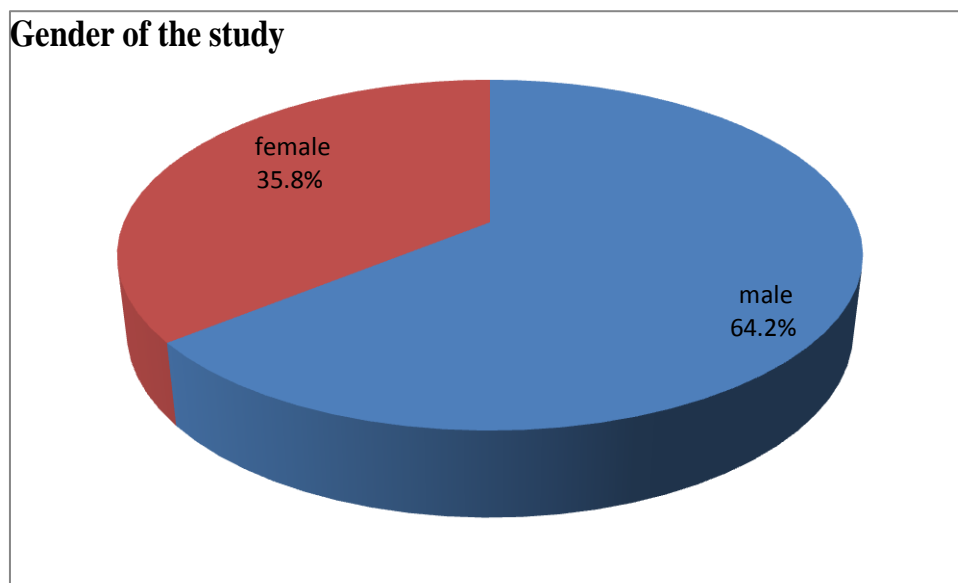


Figure (2): Distribution of the participants in the survey according to their gender

This figure illustrated the percentage of male that participated in the survey was higher(64.2%) than that of females(35.8%).

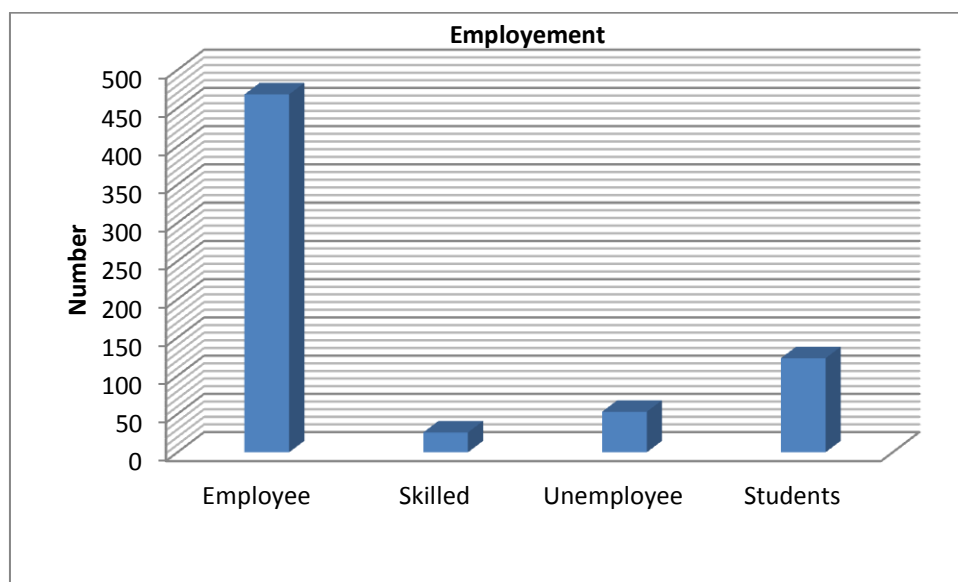


Figure (3): Distribution of the participants in the survey according to their employment

This figure revealed that the prevalence of employees was (69.86%),skilled (3.88%),unemployed(7.91%) and students in the study were (18.35%).

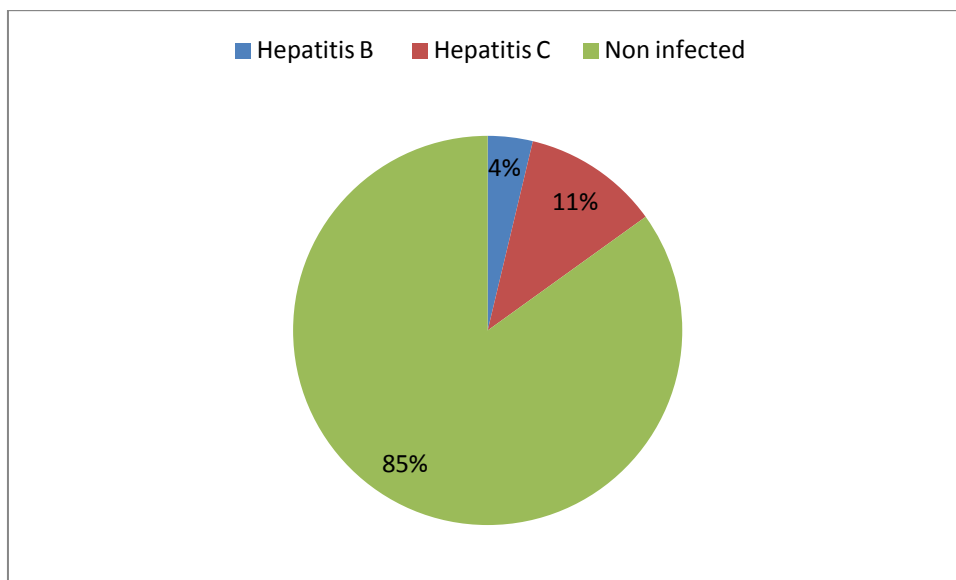


Figure (4) :Prevalence of hepatitis B and C among the participants

This figure illustrated that the percentage of the participants who were infected with Hepatitis C were higher (11%) than those who were infected with Hepatitis B(4%) .

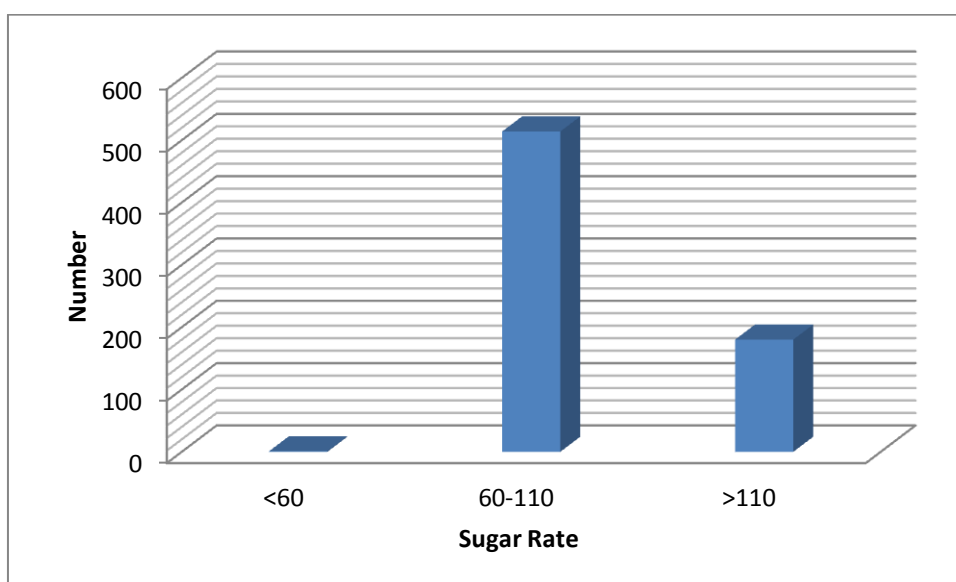


Figure5: Prevalence of hyperglycemia among the participants

This figure indicated that (72.9%)of the participants had normal blood sugar level,while (0.14%)of the participants were below the normal range,on the other hand (26.8%) were suffering from hyperglycemia .

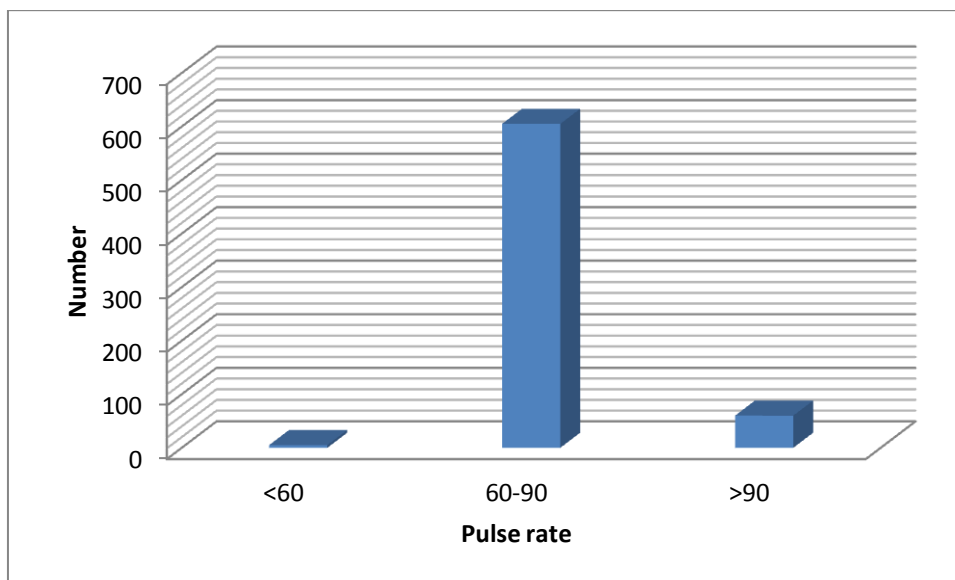


Figure 6:Prevalence of tachycardia among the participants

This figure indicated that(90.2%)of the participants had heart rate within normal,(0.74%) had bradycardia ,while (9%) of them had tachycardia.

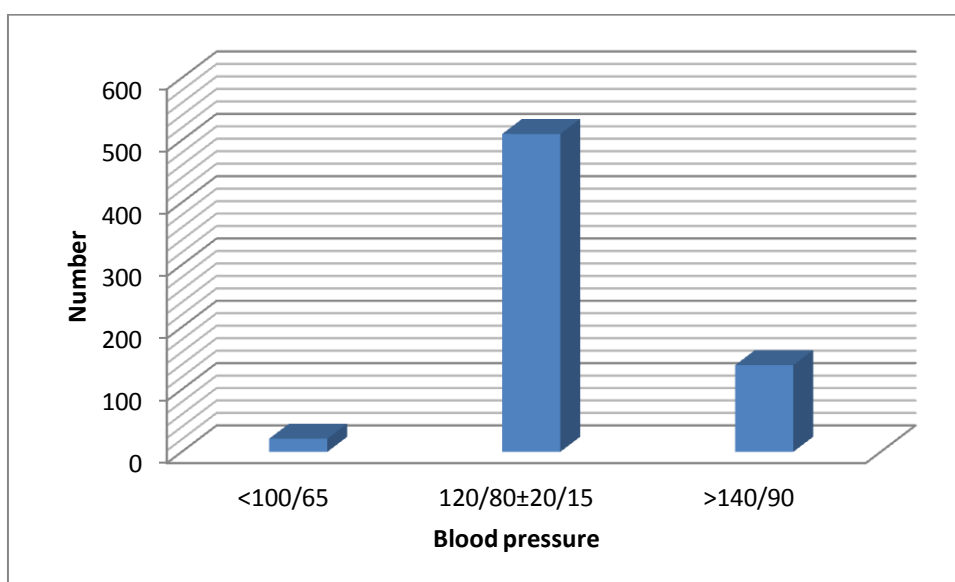


Figure (7): Prevalence of hypertension among the participants

This figure indicated that (76.1%) of the participants had blood pressure within normal, (3.13%) had hypotension, while (20.8%) of them had hypertension.

IV. Discussion:

Nursing care is sensitive to the individual’s need of care under all circumstances. Preventive approach is seen as part of nursing practice. This is due to the fact that delivery of care is across a lifespan and activities reduce the burden of mortality from diseases. Nursing health promotion activities involves individuals, families, groups and the society as a whole. However, the individual is seen as a whole or holistic person. This means that the relationship of the individual to the external environment is vital in nursing. (Kozier & Erb 2008.)

The treatment of hypertension in developing countries is unaffordable for the average worker. This is due to the fact that, the lowest treatment pharmacologically is recorded to be 7.5-12% of the monthly income of the average worker in Ghana (ProCor 2009). In effect, it is impossible for a better treatment pharmacologically. Thus, the need for understanding the disease and controlling it with preventive measures is the key to the reduction of high prevalence in developing country.

Our study supported by Minocha et al (2001), stated preliminary findings suggest that health promotion consisting of health education ,improves health behavior and increases health knowledge .Also Hampton (1996),emphasizing that the patient educational plan is a integral part of the total treatment plan .So the patient who has not been provided with adequate educational care can no longer be considered adequately treated ,also the lack of information increases patient's anxiety and frustration because he / she did not know what has happened to his /her body .therefore the patient should be taught because they need guidance so that hopefully , the patients will remain free of complications or re-hospitalization.

The nurse may help the person set realistic goals and allow the person to chose which risk factors to change first .Some persons are reluctant to change until they begin to manifest overt symptoms .The nurse must be able to identify such attitudes & respect them as human rights Timby& Smith(2003).

During the physical examination , the nurse must also pay specific attention to the rate , rhythm, and character of the apical & peripheral pulses to detect effects of hypertension on the heart and blood vessels . Although assessment can yield valuable information about the extent to which the hypertension has affected the body and about any other personal , social , or financial resources to buy the medication(Hajjar,I.,&Kotchen,T.,A., 2003).

Continued education and encouragement are usually needed to enable patients to formulate an acceptable plan that helps them live with their hypertension and adhere to the treatment plan. All body systems must be assessed to detect any evidence of vascular damage .an eye, heart, nervous system& kidney examination. Regular follow up & the nurse teach patient to change positions slowly when moving from lying or sitting position to a standing position , to prevent dizziness or lightheadness (Kaplan ,N.,2003).

The nurse can help the patient achieve blood pressure control through education about high blood pressure and how to manage it through medication, lifestyle changes of diet, control hyperglycemia, weight control & exercise. Also providing written information about the expected effects and side effect of the medication, when side effects occur and whom they should be reported.. The nurse can encourage and teach patients to measure their blood pressure, blood sugar and heart rate at home (Chobanian,A.,V.,2003).

The AIDS Institute encourages the Florida Department of Health, Hepatitis and Liver Failure Prevention and Control Program to:

1. Increase funding and attention paid to testing for HBV and HCV, with additional emphasis on HBV vaccination. Hepatitis, which has the ability to slowly degrade the liver without producing obvious symptoms, can be prevented with a vaccination for hepatitis B and treated early in the case of hepatitis C. The former is dependent on prevention awareness, while the latter is dependent on early detection. The cost differentials for hepatitis B vaccination versus chronic treatment (and associated personal and societal costs) make for a strong argument for wide-spread vaccination programs.

Increase knowledge and awareness for our public officials concerning the impact of this disease, monetarily as well as socially. Educate and encourage our elected officials to provide for the prevention, care, and treatment of the at-risk and those mono- and co-infected with hepatitis.

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Zeinab A. Ahmed. "Detection of Hepatitis B and C to people indifferent area in Egypt with correlation to diabetes and hypertension." *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 10(05), 2021, pp. 51-57.