بسم الله الرحمن الرحيم

Shendi University

Faculty of Post Graduate Studies and Scientific Research

Research about:

Assessment of Diabetic Patients Knowledge and Attitude Regarding Hypoglycemia in Elmek Nimer University Hospital, Diabetic Clinic 2016

A thesis submitted as partial fulfillment requirement of master degree in medical surgical nursing.

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بسم الله الرحمن الرحيم

الآيـة

قال تعالى:-

﴿ قَالَ رَبِّ اشْرَحْ لِي صَدْرِي * وَيَسِّرْ لِي أَمْرِي * وَاحْلُلْ عُقْدَةً مِّن لِّسَانِي * يَفْقَهُوا قَوْلِي ﴾

صدق الله العظيم

سورة طه – الآيات (25 – 28)

Dedication

I have dedicated this research to my dear parents

Who gave me all efforts and facilities to my study from childhood until adulthood.

Father and Mother

To my children you are treasures from god and I'm blessed

(my daughters)

Who are teaching me giving without take and patience without tedium.

My brothers and sisters

Also I would like to dedicate it to my remaining brothers and sisters for their continuous assistance and help.

To all my friends:

Those who precede me and no longer with me,

Those who precede me and are still among me,

My teachers

And to those who will follow me.

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Dr: Mohammed jaber eldar

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A special word of thanks:

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And finally I would like to extend our thanks to our families, friend's classmate.

مـلـخص الـبـحث

أجريت هذه الدراسة الوصفية بمستشفى الملك نمر الجامعي لتقييم معرفة وسلوك مرضى السكري تجاه هبوط السكر في الفترة من أغسطس– ديسمبر 2016م .

شملت هذه الدراسة 50 مريض، تم جمع البيانات عن طريق الاستبيان وتم تحليله بواسطة برنامج التحليل الإحصائي للحزم الإحصائية للعلوم الاجتماعية.

أوضحت الدراسة أن نصف مجتمع الدراسة (50%) كانت لديهم معرفه متدنية لوسط بتعريف هبوط السكر وأسبابه ومضاعفاته بينما (60%) كانت معرفتهم جيده بالأعراض بالرغم من ذلك نصفهم (50%) يعاني من نوبات هبوط السكر حول سلوكهم توصلت الدراسة أن اغلب المرضي لهم سلوك ايجابي بخصوص هبوط السكر.

توصلت الدراسة لعدة توصيات علي إدارة المستشفي أن تقوم بتدريب خاص للممرضين لتقديم تثقيف صحي للمرضي بمركز المتابعة وتثقيف المرضى بأن هبوط السكر من أكثر أسباب الوفيات والإمراضية وذلك باستخدام جميع وسائل الاتصال.

Abstract

Hypoglycemia is the most common endocrine emergency. It has a significant economic impact and impairs quality of life in diabetic's patients.

This study was descriptive cross sectional aim to assess diabetic patient knowledge and attitude regarding hypo glycaemia. In period extend ed from august to December 2016.

The target population involve fifty patient were selected randomly sampling, the Data was collected using questionnaire composed (20) questions and analysed by using Statistical Package for the Social Sciences (SPSS) version (22) statistical methods study result revealed that(50%) half of study group had poor knowledge about of hypoglycemia.(mean, causes) tow third(60 %)of them had good knowledge about symptom while half (50%) of them were sometimes have attack of hypoglycemia. that most majority (88%)of them had positive attitude about hypoglycemia.

The hospital should train specialized nurses to perform health education at center.

There is a need for health education as hypoglycemia causes severe morbidity and mortality and we suggest using different ways of communication.

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Introduction

Hypoglycemia (also called low blood glucose or insulin reaction) is occur when your blood glucose level dropped too low. this occur when your glucose level falls below 4mmol.although this can vary, some people may feel symptoms when their level is greater than 4mmol and sometimes it just depend on the of situation. While hypoglycemia can experienced by people taking certain tablets for their diabetes, it is more common in people who inject insulin. It is important to treat hypoglycemia immediately to prevent blood glucose from dropping lower [(1).]

Hypoglycemia can caused by one or number of event such as delaying or missing meal, unplanned physical activity, too much insulin diabetes tablets.. Symptoms of hypoglycemia vary from person to person, however feeling are shaking, sweating, lack of concentration, numbness around the lips and finger. If the patient feels these symptoms she or he must test his, her blood glucose, if time and circumstance permit. If unable to do so, treat as hypoglycemia treat lower dropping blood glucose level even if he or she feels finer [(1).]

Some people have no symptom they loss conscious without even knowing their blood glucose level were dropping. This is called hypoglycemia un awareness and tends to happen to people who have diabetes for many years. If patients have hypoglycemia without symptoms or symptoms change, you may need to check your blood glucose more often and alert their families and friends to watch for change and dropping of sugar level. if hypoglycemia is not treated quickly the blood glucose level can continue to drop, which may progress to loss of coordination, slurred speech, confusion, loss of conscious and loss of fitting.[(1)]

In people with diabetes, hypoglycemia “low blood sugar” develops when there is not enough sugar “glucose” in your body to be used as fuel for cell. A number of different factors can cause hypoglycemia, including certain medication, diet and certain medical condition can also make hypoglycemia [(2)].

Most people feel symptom of hypoglycemia when their blood glucose is 70mg/dl or lower. Each person of diabetes may have different symptoms of hypoglycemia. Early symptom of hypoglycemia includes confusion, dizziness, feeling of shaky, hunger and sweating. Without treatment, more sever hypoglycemia symptoms may develop. although hypoglycemia can occur in someone with diabetes following meal that contain a lot of simple sugar, this condition called reactive hypoglycemia .it may also if person miss meal, does not eat all meal, eats later than usual dose not eat when ill. [2]

Justification

This research will explore thinking of patients about hypoglycemia and dangerous symptom that cause permanent long term sequel and is potentially life threatening, spot education about it to safe their life by avoiding the complication.

Hypoglycemia is the most common endocrine emergency. It has a significant economic impact and impairs quality of life in patients with diabetes11.

Hypoglycemia has greater chance of progressing to serious important if not treated.. [8]

Also it's an interesting topic to know more about it.

Objectives

General objective:

To study the diabetic patients knowledge and attitude about hypoglycemia.

Specific objectives:

- To assess diabetic patient knowledge about hypoglycemia.
- To identify life style measures of diabetic patient to prevent hypoglycemia.
- To determine Attitude of diabetic patient regarding hypoglycemia.

Literature review

2-1 Definitions of diabetes mellitus:

Is the most common endocrine disorder characterized by inappropriate hyperglycemia caused by relative or absolute deficiency of insulin or by cellular resistance to the action of insulin? [3]

Diabetes mellitus (DM) is a common, chronic, metabolic syndrome characterized by hyperglycemia as cardinal biochemical feature. [4]

2-2 Pathophysiology:

Insulin is secreted by beta cells, which are ones of four type cells in the islets of lengerhans in the pancreas. Insulin is an anabolic, or storage, hoemones. When a person eats meal, insulin secretion increases and moves glucose from the blood into muscle, liver, and fats cell in those cell.

Insulin:

- Transport and metabolizes glucose for energy.
- Stimulate storage of glucose in the liver and muscle (in the form of glycogen).
- Enhance storage of dietary fat in dispose tissue.
- Signals the liver to stop the release of glucose.

-accelerates transport of amino acids (derived from dietary protein).

Insulin also inhibits the breakdown of stored glucose, protein and fat. during fasting period(between meals and overnight)the pancreas continuously release a small amount of insulin (basal insulin), another pancreatic hormones called glucagon(secreted by alpha cells) is released when blood glucose levels decrease and stimulates the liver to release stored glucose. Insulin and glucagon together maintain constant level of blood glucose in the blood. Initially the liver produces glucose through the breakdown of glycogen (glycogenolysis).after 8-12 hour without food, the liver forms glucose from the breakdown of non carbohydrate substance, including amino acids(glucogenesis). [5]

Classification:

The major form of diabetes are divided into these caused by deficiency of insulin secretion due to pancreatic B cell damage (type 1 DM) and those that are consequence of insulin resistance occurring at the level of skeletal muscle, liver, and dispose tissue with various degree of B cell important (type 2 DM).

Type 1 DM is the most common endocrine metabolic disorder of child hood and adolescent with important consequence for physical and emotional development.

Individuals with type 1 DM confront serious life style alteration that include an absolute daily requirement for exogenous insulin, the need to monitor their own glucose control, and need to pay attention to dietary intake morbidity and mortality storm from acute metabolic derangement and from long term complication in adult hood that affect large and small vessels resulting in retinopathy, ischemic heart disease and arterial obstruction with gangrene of the extremities. The acute clinical manifestations are due to hypoinsulinemic hyperglycemic keto acidosis. Acetoimmune mechanism are factor in the genesis of type 1DM, the long term complication are related to metabolic disturbances (hyperglycemia) . [(4)]

2-3 Types:

Type 1:

Formerly called juvenile diabetes mellitus insulin – dependent DM or IDDM is caused by destruction of the beta cell in the islets' of lengerhans of the pancreas. When beta cells are destroyed they are unable to produce insulin, insulin must be injected for the body for energy.

There is new type called LADA has resent ally identified, some patients who are initially diagnosed with type 2 diabetes were later found to have islet called insulin and antibodies their blood glucose were not controlled with oral medication and beta cell destruction tended to occur more slowly than type 1

this is possible because of difference in antibodies or individuals response to the antibodies.

Type 2:

95% of people with diabetes have type 2 DM formerly called adult onset diabetes mellitus, non insulin dependent DM, insulin is still made by pancreas is normal or even high. Heredity s responsible for up to 90% of causes of type 2 DM.

Obesity also is major contributing factor. Type 2 diabetes in youth, more are more in children and adolescent are developing type 2 diabetes, which in the obesity and decreasing activity kevel in children today. [4]

2-5 Complication of diabetes:

The person of diabetes, regardless of type, is an increased risk for complication involving many different body system alteration in blood glucose level, alteration in cardio vascular system, neuropathies, an increased susceptibility to infection and periodontal disease are common.

Acute complication:

1-Hyperglycemia:

The condition occurs in people with type 1,2 diabetes. The cause is unknown but is believed to be related to nocturnal increase in growth in growth hormones, which decrease peripheral uptake of glucose.

2-DKA"diabetic keto acidosis":

As the path physiology of untreated type 1 diabetes continues, the insulin deficit causes the fats stores to breakdown. Resulting in continued hyperglycemia and mobilization of fatty acids with subsequent ketosis. Diabetes keto acidosis (DKA) also may occur in person with diagnosed diabetes when energy requirement increase during physical or emotional stress.

3- Hypoglycemica:

Is common in people with type 1 diabetes and occasionally occur in people with type 2 who are treated with oral hypoglycemic agents. This

condition is often called insulin shock “insulin reduction” in client with type 1 hypoglycemia result primarily from mismatch between insulin intake (error in insulin dose), physical activity and omitting meal. The manifestation of hypoglycemia results from a compensatory autonomic nervous system, response from impaired cerebral function due to decrease in glucose available for use by the brain. The manifestation is vary particularly in older adults. The onset is sudden, and blood glucose is usually less than 45-60 mg/dl .sever hypoglycemia can cause death.

Chronic complication:

It is generally occur10-15 years after the onset of diabetes mellitus. It includes the following:

- Macro vascular (large vessel) disease.
- Micro vascular (small vessel).
- Neuropathic disease. [6]

2-6 Treatment of diabetes mellitus:

Treatment elements*:*

Education:

Is essential that people with diabetes understand their condition and learn to handle all aspect of their management as comprehensively and quickly as possible.

Insulin therapy oral ant diabetic agent:

Patients who requiring insulin needs daily advice at first and, if not practicable, admission to hospital may be necessary .they need to how measure their dose of insulin accurately with a syringe. There are sensible precautions for diabetic patients who are take insulin or oral anti diabetic drug to carry card stating their name and address, the fact that they have diabetes, the nature and dose of any insulin or other drugs they may be taking,.

Diet and meal planning:

Goals are to maintain blood glucose level in the normal range, lipid and lipoprotein profile that reduce risk for vascular disease. Meal plan should consider the patient's food preference, lifestyle, usual eating time and ethic and culture.

Monitoring:

Regular blood glucose monitoring should be performed by all people treated with insulin to adjust the insulin dose and detect hypoglycemia. It is optional in many patients with type 2 diabetes. Blood glucose is usually measured before break fast.

Although three method of treatment available for diabetic patient: diet, lifestyle advice, oral anti diabetic drug and insulin. Approximately 50%of new cases of diabetes mellitus can be controlled adequately by diet alone; 20-30% will require insulin. Regardless of etiology the type of treatment is determined by adequacy of residual B-cell function, this cannot be determined easily by measurement of circulating plasma insulin. The important of lifestyle changes such as taking regular exercise, observing healthy diet and reducing alcohol consumption and improve glycemic control., to remain not only symptom free but in good health, achieve normal metabolic state and to escape the long term of complication. Dietary measures are required in the treatment of all the people with diabetes. People with diabetes should have access to dietitian at diagnosis. Nutritional advice should be tailored to individual and take account of their age and lifestyle. oral ant diabetic drug are effective reducing hypoglycemia in patient with type 2 diabetes .although their mechanism of action are different, most deepened upon a supply of endogenous insulin and they therefore have no hypoglycemia effect in patient with type 1 diabetes. Insulin was discover in 1921 and is formed the management of type 1 diabetes until then fetal disorder. Insulin is injected subcutaneous into the anterior abdominal wall, upper arm, outer thigh and buttocks. The rate of the absorption is influenced by factor, other the insulin formulation include insulin site, depth and volume of injection. The choices of regimen depend on the desired degree of glycemic control. The

patient lifestyle and ability to adjust the insulin dose. Most people require 2 or more injection of insulin daily. [7]

2-7 Hypoglycemias:

Hypoglycemia is usually defined as blood glucose level below 50mg\dl, although patient may feel symptom at higher or lower level .Occasionally symptom occur as result of rapid drop in the blood glucose .even though the actual glucose level is normal or high.[4]

The level of blood glucose low enough to define hypoglycemia may be different for different people, in different circumstances, and for different purposes and occasionally has been a matter of controversy. Most health adults maintain justifies glucose level above 4.0mmol\l. 72mg\dl. And develop symptoms of hypoglycemia when the glucose falls below 4mmol\ [8].

Hypoglycemia is also a term in popular culture and alternate medicine for common, often self diagnosis. The condition characterize by shakiness, altered mood and thinking, but without measured low glucose or risk of severe harm. It is treated by changing eating pattern, eating regular balanced meals with reasonable portions and avoiding excessive sugar.

In those treated for diabetes a diagnosis of hypoglycemia can be made based on the presence of low blood sugar alone, otherwise Whipple's triad is required which include symptoms consist with hypoglycemia, a low blood sugar and resolution of these symptom once the blood sugar improves.

Throughout 24 hour period blood plasma glucose level are generally maintained between 4-8m mol\l (72-144mg\dl).

Although 3.3 or 3.9mmol\l (60-70mg\dl) is commonly cited as the lower limit of normal glucose symptom of hypoglycemia usually do not occur until 2.8-3mmol\l (50-54gm\dl). [8]

2-8 Risk factor of hypoglycemia:

It is commonly believed that hypoglycemia is the outcome of side effect of *certain diabetes medication.*

Other common causes of hypoglycemia:

-skipping meal or eating smaller meal.

-increase or change in dose that patient take.

-Increased physical activity.

- Age.

- Longer duration of diabetes mellitus.

-Obesity. [9]

2-9 Method of measurement:

Blood glucose levels discussed in this article is venous plasma or serum. Levels measured by standard, automated glucose oxidize methods used in medical laboratories. Arterial plasma or serum levels are slightly higher than venous level, and capillary levels are typically in between this difference between arterial and venous level is small in the fasting state but is amplified and can be greater than 10% in the post prandial state.

Investigation of hypoglycemia is with miss leading low numbers. In other words, meter glucose reading at 39mg\dl could be properly obtained from person whose laboratory serum glucose was 53mg\dl even wider variation can occur with (real world) home use. Two other factor significantly affect glucose measurement hematocrit and delay after blood drawing. [8]

Real hypoglycemia is much higher in person who takes insulin than is someone who does not, second because injected insulin is cannot be (turned off). Hypoglycemia has greater chance of progressing to serious important if not treated, compared to most other forms of hypoglycemia. Third, because glucose level are often above normal for long period of time. [8]

2-10 Sign and symptom:

Hypoglycemia symptom and manifestation can be divided into those produced by counter regulatory hormones (epinephrine, adrenaline and glucagon) triggered by the falling glucose, and the Neuro glycopenia effects produced by the reduce brain sugar.

Adrenergic manifestation:

- Shakiness, anxiety, nervousness
- palpitations, tachycardia
- Sweating, feeling of warmth although sweat glands have mascarinic receptors, thus adrenergic manifestation is not entirely accurate.
- Pallor, coldness, clamminess.
- dilated pupils (mydriasis)

Glucagon manifestation:

- Hunger
- Nausea, vomiting, abdominal discomfort.
- Headache.

Neuroglycopenia manifestation:

- Abnormal mentation, impaired judgment.
- Non specific dysphoria, moodiness, depression, crying, exaggerated concern.
- Feeling of numbness (pain and needles) (patethesia)
- Negativism, irritability, belligerence, combativereness, rage.
- Personality change, emotional liability.
- Fatigue, weakness, apathy, lethargy, day dreaming, sleep.
- Confusion, amnesia, light headiness or dizziness, delirium.
- Blurred vision, double vision, flashes of light.
- Automatic behavior also lenownas automatism.
- Difficulty speaking, slurred speech.
- Coma, abnormal breathing.
- Memory loss.

Not all of the above manifestation occurs in every case of hypoglycemia. These are no consistent order to the appearance of the symptom, if symptom even occurs. Specific manifestation may also vary by age, by severity of the hypoglycemia and the speed of the decline. In young children vomiting can

sometimes accompany morning hypoglycemia with ketosis. In older children and adult, moderately severe hypoglycemia can resemble mania, mental illness, intoxication. In the elderly hypoglycemia can produce focal stroke. Like effects or hard to define malaise.

Long term:

Hypoglycemic symptom can also occur when one is sleeping; examples of symptom during sleep can include damp bed sheets or clothes from perspiration having night mares.

Hypoglycemia that is severe enough to cause seizure or unconsciousness can be reversed without obvious harm to the brain.

Long term effects:

Significant hypoglycemia appears to increase the risk of cardiovascular disease. [8]

2-11 Relation between hypoglycemia and exercise:

One of the most common causes of lowering blood glucose is too much physical activity. In fact moderate to intense exercise may cause your blood glucose to drop for the next 24 hour following exercise .Basically when you exercise, the body use 2 sources of fuel, sugar and free fatty acids to generate energy .the sugar comes from the blood, the liver and muscle in form of glycogen. During the first 15 minute of exercise, most of the sugar comes from the blood stream or the muscle, glycogen which is converted back to sugar. After 15 minute of exercise however fuel start to come from the glycogen stored in the liver .after 30 minute of exercise the body begins to get more of it is energy from fatty acids .As result exercise can deplete sugar level and glycogen stores.

Guide lines for preventing exercise related hypoglycemia:

-check your blood glucose before exercising makes sure your blood glucose is sufficient and or consume an appropriate snack.

-avoid exercise at the peak of your dose action.

-avoid late evening exercise; exercise should be completed 2 hour before bedtime.

- check your exercise session 1-2 per day, because additional sessions increase likelihood of hypoglycemia.

- check your blood glucose level immediately after exercise to prevent low blood glucose from occurring hour after exercise. it may also be necessary to check your blood glucose more than 2-4 hour after exercise. Moderate intensity exercise may cause blood glucose to drop for the next 24 hour following exercise. [10]

2-12 Prevention of hypoglycemia:

The most effective means of preventing, further episodes of hypoglycemia depend on the causes. The risk of farther episodes of diabetic hypoglycemia can often be reduced by lowering the dose of insulin or other medication or by more meticulous attention to blood sugar during unusual hours, higher level of exercise, or decreasing alcohol intake.

For most severe disorder, such as type 1 glycogen storage disease this may be supplied in the form of cornstarch every few hours or by continuous gastric infusion.

Several treatments are used for hyperinsulinic hypoglycemia. Depend on the exact from and severity. Some forms of congenital hyperinsulinic are respond to diazoxide or octreotide surgical removal of the over active part of the pancreas is curative with minimal risk. Pancreatectomy may be the treatment of last resort, but in this condition is less consistency effective and fraught with more complication. Hypoglycemia due to hormone deficiencies such as hypopopitultrism or adrenal insufficiency usually ceases when the appropriate hormones are replaced. Hypoglycemia due to dumping syndrome and other post surgical condition is best dealt by altering diet, which including fat and protein with carbohydrate may slow digestion and reduce early insulin secretion.

Idiopathic post surgical syndrome without demonstrably low glucose levels at the time of symptoms can be more of management challenge.

Many people find improvement by changing eating patterns (smaller meals, avoiding excessive sugar, mixed meals rather than carbohydrate by themselves) reducing intake of stimulants such as caffeine or by making life style changes to reduce stress. [8]

2-13Treatment:

Treatment of some forms of hypoglycemia, such as in diabetes, involves immediately raising the blood sugar to normal through the ingestion of carbohydrate, determining the cause, and taking measure to hopefully prevent future episodes. However, this treatment is not optimal in other forms such as reactive hypoglycemia where rapid carbohydrate ingestion may lead to further hypoglycemic episodes.

Blood glucose can be raised to normal within minutes by taking 10-20 gm\dl of carbohydrate. It can be taken as food or drink if the person is conscious and able to swallow. This amount of carbohydrate is contained in about 3-4 ounces (100-200ml) of orange, apple, grape juice, which contain higher proportion of fructose, which more slowly metabolized than pure dextrose.

If person is suffering such as severe effects of hypoglycemia that they cannot due to combativeness or should not due to seizure or unconsciousness be given any thing by mouth, I.V access can be establish and give I.V dextrose, concentration varying depending on age care must be taken in giving these solution because can cause skin necrosis, if I.V is infiltrated, or other fluid and electrolyte disturbance if administered incorrectly, if I.V cannot be establish the patient can given 1-2mg of glucagon in an I.M injection. [8]

Methodology

Study design:

This was descriptive cross-sectional hospital based study was done in period extended from August to December 2016 to assess of diabetic patient knowledge and attitude about hypoglycemia.

Study area:

This study was conducted in Al-MAK Nimer university hospital, which located at River Nile state in Shendi town; the hospital was established in 2002 and contains the following departments: medicine, surgery, pediatric, Gynecology and obstetrics unit, ophthalmic, derma, ENT, renal, oncology and diabetic section. There are many consultants 6in medicine, 3in surgery,2 consultant for ENT, one consultant for renal, derma, oncology, and 5 consultant pediatric.

Setting:

Diabetic clinic is located in clinic refer center which is at the east side of Almak Nimer hospital, there are tow consultant each for medicine and surgery, There is one dietitian. There tow nurses who deliver services, and one lab worker. Clinic receive patients comes from health center in Shendi, rural area west, east south and north of Shendi.

Study population:

The study includes the diabetic patient who come to diabetic clinic during period of study.

Sampling:

1-sampletechnique:

Simple random sampling

2-Sample size:

The sample size is 50 patients.

Data collection tool:

The data was collected by questionnaire designed by researcher based on reviewing of literature, it composed from (20) question develop to assess the diabetic patient. Knowledge and attitude regarding hypoglycemia.

Scoring system:

Scoring system was establish by researcher the data was distributed in three categories to measure the level of patient knowledge about hypoglycemia if the patient respond to (4-3 choice it consider good knowledge),(2-1choices consider fair knowledge, (1-0 chooses consider poor knowledge).

Data collection technique:

The data was collected within two week using questionnaire by within 10– 15 minute for every patient.

Data analysis:

The data were entered in the Statistical Package for the Social Sciences (SPSS) (version 21) for analysis.

The collected, analyzed data, organized, categorized, tabulated in tables and, figure.

Ethical consideration:

The study was approved by ethical committee of research in the faculty of nursing science. Before conducting the study, permission was taken from clinic center for diabetic patients. The purpose of study was explained to each one of patient and am assured them that the data collected from them will remain confidential and it’s not allowed for any person to identify it.

Results

Table (1): Distribution of study group according to their democratic data (age, gender, resident, and marital status):

Age	Frequency	Percent
20 – 30 years	3	6%
30 – 40 years	5	10%
40 –50years	12	24%
More than 50 years	30	60%
Gender	**Frequency**	**Percent**
Male	21	42%
Female	29	58%
Residence	**Frequency**	**Percent**
Rural	24	48%
Urban	26	52%
Marital status	**Frequency**	**Percent**
Married	33	66%
Separated	13	26%
Single	4	8%
Divorced	0	0
Total	50	100%

The above table showed that (6%) of study group their age from (20-30) years, (10%) of them age between (30-40) years, (24%)of them age between (40-50) years and (60%) them age more than 50year. While (42%) of them were male (58%) of them were female also (48%) of them were rural, (52%) of them were urban and (66%) were married (26%) were separated and (8%) were single.

Table (2): Distribution of study group according to their education level and occupation:

Education level	Frequency	Percent
Illiterate	16	32%
Kallwa	14	28%
Primary	8	16%
Secondary	4	8%
University	8	16%
Occupation	**Frequency**	**Percent**
Employee	10	20%
Un Employee	40	80%
Total	50	100%

The above table showed that (32%) of study group were illiterate, (28%) were kallwa, and (16%) were primary, (8%) were secondary, and (16%) were university while (20%) were employee and (80%) were un employee.

Table (3): Distribution of study group according to their type of diabetes:

Type	Frequency	Percent
Insulin dependent	35	75%
Non insulin dependent	15	25%
Total	50	100%

The above table illustrated that (25%) of study group were non insulin dependent, and (.75%) were taking insulin.

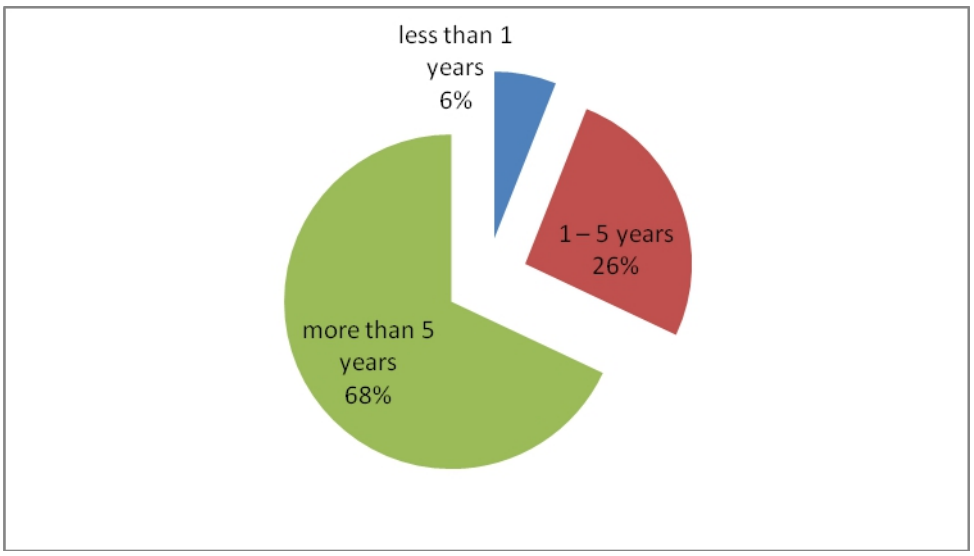

Figure (1): Distribution of study group according to their duration of illness.

The above figure illustrated that (6%) of study group had less than 1 year) while (26%) had the disease(1-5year) and (68%) more than 5 year.

Table (4) Distribution of study group according to their type of ant diabetic:

type	Frequency	Percent
Insulin	22	48%
Oral hypoglycemic agent	24	44%
Not in regiment treatment	4	8%
Total	50	100%

The above table showed that (44%) of study group were used insulin (48%) were used oral hypoglycemic agent and (8%) were not in regiment treatment.

Table (5): Distribution of study group according to their pattern of meal/ day:

Meal	Frequency	Percent
Three meals	17	34%
Two meals	10	20%
Three meals with snack	19	38%
Four meals	3	6%
Five meals	1	2%
Total	50	100%

The above table illustrated that (34%) of study group were talked 3 meal, (20%) were talked 2meal, (38%) were take 3 meal with snack while (6%) were 4meal, and (2%) were 5mea of meal per day.

Table (6): Distribution of study group according to their knowledge about time of dose in relation to meal:

time	Frequency	Percent
Before meal 15 – 30 minute	40	80%
After meal	5	10%
While meal	5	10%
Total	50	100%

The above table showed that (80%) of study group were tacked dose before meal (15-30m) while (10%) were tacked it after meal and (10%) while meal..

Table (7): Distribution of study group according to their action they done when missed dose:

Action	Frequency	Percent
Take immediately	27	54%
Stopped meal	3	6%
Tack et after meal	20	40%
Total	50	100%

The above table showed that (54%) of study group were tacked immediately, (6%) were stopped meal while (40%) were take it after meal.

Table (8): Distribution of study group according to their knowledge regarding meaning of hypoglycemia:

Level of knowledge	Frequency	Percent
Good	4	8%
Fair	21	42%
Poor	25	50%
Total	50	100%

Above table illustrated that (8%) of study group had good knowledge (42%) of them had fair knowledge and (50%) had poor knowledge about hypoglycemia.

Table (9): Distribution of study group according to their frequency of hypoglycemic attack since diagnosis:

Frequency of attack	Frequency	Percent
Sometime	25	50%
Always	8	16%
Rarely	10	20%
Never	7	14%
Total	50	100%

Above table illustrated that (50%) of study group were sometimes 16%) were always(20%) were rarely and(14%) were never attack of hypoglycemia.

Table (10) Distribution of study group according to their knowledge about trigger factors of hypoglycemia:

Level of knowledge	Frequency	Percent
Good	8	16%
Fair	16	32%
poor	26	52%
Total	50	100%

Above table illustrated that (16%) of study group had good knowledge, (32%) of them had fair knowledge and (52%) of them had poor knowledge about trigger factors of hypoglycemia.

Table (11) Distribution of study group according to knowledge about symptoms of hypoglycemia:

Level of knowledge	Frequency	Percent
Good	30	60%
Fair	11	22%
Poor	9	18%
Total	50	100%

Above table illustrated that (60%) of study group had good knowledge and (22%) of them had fair knowledge and (18%) of them had poor knowledge about symptoms of hypoglycemia.

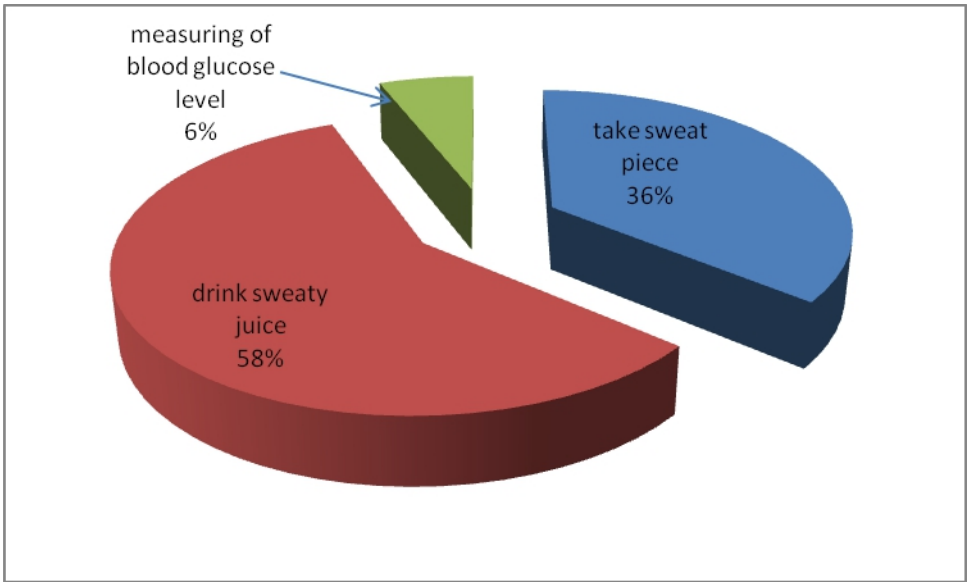

Figure (2) Distribution of study group according to their action taken during hypoglycemia attack:

Above figure illustrated that (36%) of study group were taken sweat piece, (58%) were drank sweaty juice, and (6%) were measured of blood glucose level during hypoglycemia attack.

Table (12): Distribution of study group according to their knowledge about Complication of hypoglycemia:

Level of knowledge	Frequency	Percent
Good	10	20%
Fair	19	42%
Poor	21	32%
Total	50	100%

Above table illustrated that (20%) of study group had good knowledge (38%) of them had fair knowledge and (42%) of them had poor knowledge about complication.

Table (13) Distribution of study group according to type of exercise performed by patients:

Type of exercise	Frequency	Percent
Walking.	6	12%
Swimming.	7	14%
Foot ball.	37	74%
Total	50	100%

Above table explained that (12%) of study group their exercise were walked, (14%) were swimming and (74%) were performed football.

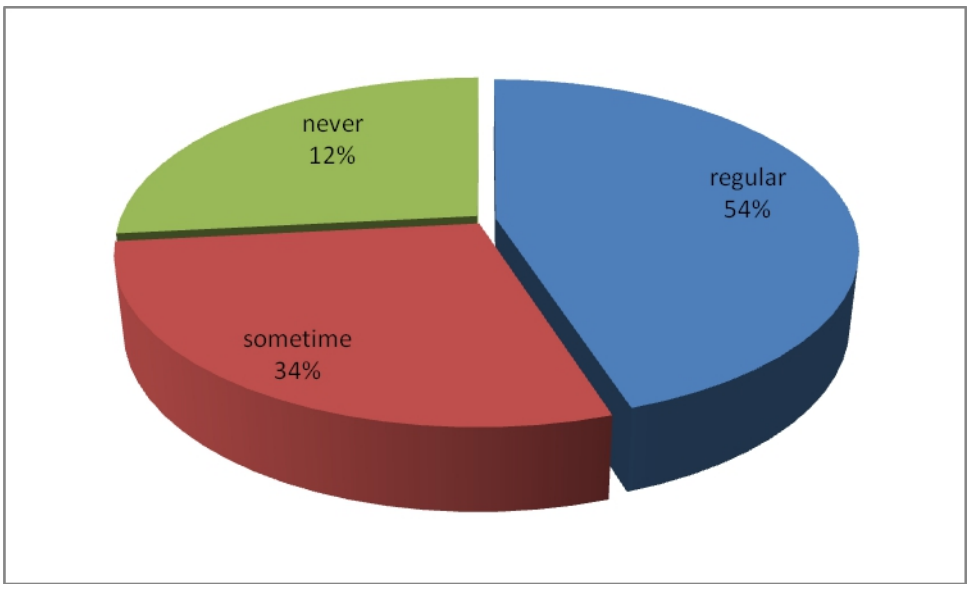

Figure (3): Distribution of study group according to their frequency of exercise performed by patients.

The above figure illustrated that (54%) of study group were regular follow up, (34%) were sometime and (12%) were not on follow up.

Table (14) Distribution of study group according to their attitude regarding hypoglycemia:

Items	Strongly agree		Agree		Neither		Disagree		Strong Disagree	
	F	P	F	P	F	P	F	P	F	P
Self blood glucose monitoring at home regularly before breakfast	8	16%	9	18%	6	12%	5	10%	22	44%
Taking medication at the right time (20 – 30 minutes) before meal	40	80%	4	8%	0	0	4	8%	2	4%
Taking snake between meals	11	22%	18	36%	8	16%	4	8%	9	18%
Carry diabetic identification card always	13	26%	14	28%	10	20%	0	0	13	26%
When missed dose: take immediately.	26	52%	7	14%	11	22%	1	2%	5	10%

f*= frequency- p= percentage.

The above table showed that (54%) of study group had negative attitude about self blood monitoring also (88%) of them had positive attitude about (taking medication-) while (58%) had positive attitude about (taking snake, (54%) had positive attitude about (carry diabetic identification card always and (66%) had positive attitude about tacking dose when missed.

Table (15) Distribution of study group according to their attitude regarding exercise:

About exercise	Strongly agree		Agree		Neither		Disagree		Strong Disagree	
	F	P	F	P	F	P	F	P	F	P
a. check your blood glucose before exercising	12	24%	3	6%	4	8%	3	6%	28	56%
b. consume appropriate snake.	20	40%	9	18%	2	4%	2	4%	17	34%
c. limit your exercise (1 – 2) per day.	6	12%	2	4%	5	10%	0	0	37	74%
d. check your blood glucose more than 2 – 4 hrs after exercise.	5	10%	2	4%	2	4%	0	0	39	78%

f*= frequency- p= percentage.

The above table showed that (62%) of study group had negative attitude about checked your blood glucose before exercising also (58%) of them had positive attitude about consume appropriate snake before exercising while (74%) had negative attitude about limitation exercise (1-2) per day, (78%) had negative attitude about checked blood glucose more than 2 – 4 hrs after exercise.

Table (16) Distribution of study group according to their attitude regarding treatment of hypoglycemia attack:

About treatment of hypoglycemia attack	Strongly agree		Agree		Neither		Disagree		Strong Disagree	
	F	P	F	P	F	P	F	P	F	P
a. administer fast sugar or carbohydrate 10 – 20 ml/dl	44	88%	3	6%	3	6%	0	0	0	0
b. juice 100 – 200 ml.	39	78%	7	14%	2	4%	2	4%	0	0
c. available glucose tablets or available source of sugar.	26	52%	2	4%	11	22%	2	4%	9	18%
d. call help.	30	60%	6	12%	7	14%	2	4%	5	10%

f*= frequency- p= percentage.

The above table showed that (94%) of study group had positive attitude about administer fast sugar or carbohydrate 10 – 20 ml/dl also (92%) of them had positive attitude about taking juice 100 – 200 ml while(56%)had positive attitude about available glucose tablets or available source of sugar.(72%) had positive attitude when call help.

Gender * Are you attack of hypoglycemia before

Gender		Are you attack of hypoglycemia before				Total	Asymp. Sig. (2-sided)
		sometime	always	rarely	never		
Male	Count	12	2	4	3	21	.720
	% of Total	24.0%	4.0%	8.0%	6.0%	42.0%	
Female	Count	13	6	6	4	29	.707
	% of Total	26.0%	12.0%	12.0%	8.0%	58.0%	
Total	Count	25	8	10	7	50	.690
	% of Total	50.0%	16.0%	20.0%	14.0%	100.0%	

Gender * Action taken during hypoglycemia attack

Gender		Action taken during hypoglycemia attack			Total	Asymp. Sig. (2-sided)
		Teake sweat piece	drink sweaty juice	measuring of blood glucose level		
Male	Count	6	14	1	21	.572
	% of Total	12.0%	28.0%	2.0%	42.0%	
Female	Count	12	15	2	29	.569
	% of Total	24.0%	30.0%	4.0%	58.0%	
Total	Count	18	29	3	50	.521
	% of Total	36.0%	58.0%	6.0%	100.0%	

Residence * Are you attack of hypoglycemia before

Residence		Are you attack of hypoglycemia before				Total	Asymp. Sig. (2-sided)
		sometime	always	rarely	never		
Rural	Count	13	3	7	1	24	.030
	% of Total	26.0%	6.0%	14.0%	2.0%	48.0%	
Urban	Count	12	5	3	6	26	.108
	% of Total	24.0%	10.0%	6.0%	12.0%	52.0%	
Total	Count	25	8	10	7	50	.379
	% of Total	50.0%	16.0%	20.0%	14.0%	100.0%	

Residence * Action taken during hypoglycemia attack

Residence		Action taken during hypoglycemia attack			Total	Asymp. Sig. (2-sided)
		take sweat piece	drink sweaty juice	measuring of blood glucose level		
Rural	Count	7	16	1	24	.483
	% of Total	14.0%	32.0%	2.0%	48.0%	
Urban	Count	11	13	2	26	.480
	% of Total	22.0%	26.0%	4.0%	52.0%	
Total	Count	18	29	3	50	.558
	% of Total	36.0%	58.0%	6.0%	100.0%	

Education level * Are you attack of hypoglycemia before

Education level		Are you attack of hypoglycemia before				Total	Asymp. Sig. (2-sided)
		Sometime	Always	Rarely	Never		
Illiterate	Count	9	2	4	1	16	.075
	% of Total	18.0%	4.0%	8.0%	2.0%	32.0%	
Kallwa	Count	9	1	1	3	14	.267
	% of Total	18.0%	2.0%	2.0%	6.0%	28.0%	
Primary	Count	4	2	2	0	8	.173
	% of Total	8.0%	4.0%	4.0%	0.0%	16.0%	
Secondary school	Count	0	1	2	1	4	
	% of Total	0.0%	2.0%	4.0%	2.0%	8.0%	
Higher education	Count	3	2	1	2	8	
	% of Total	6.0%	4.0%	2.0%	4.0%	16.0%	
Total	Count	25	8	10	7	50	
	% of Total	50.0%	16.0%	20.0%	14.0%	100.0%	

Education level * Action taken during hypoglycemia attack

Education level		Action taken during hypoglycemia attack			Total	Asymp. Sig. (2-sided)
		take sweat piece	drink sweaty juice	measuring of blood glucose level		
Illiterate	Count	6	8	2	16	.899
	% of Total	12.0%	16.0%	4.0%	32.0%	
Kallwa	Count	5	8	1	14	.817
	% of Total	10.0%	16.0%	2.0%	28.0%	
Primary	Count	3	5	0	8	.757
	% of Total	6.0%	10.0%	0.0%	16.0%	
Secondary school	Count	2	2	0	4	
	% of Total	4.0%	4.0%	0.0%	8.0%	
Higher education	Count	2	6	0	8	
	% of Total	4.0%	12.0%	0.0%	16.0%	
Total	Count	18	29	3	50	
	% of Total	36.0%	58.0%	6.0%	100.0%	

Discussion

Hypoglycemia is the most common endocrine emergency. It has a significant economic impact and impairs quality of life in diabetic's patients.

Hypoglycemia is usually defined as blood glucose level below 50mg\dl, although patient may feel symptom at higher or lower level .Occasionally symptom occur as result of rapid drop in the blood glucose .even though the actual glucose level is normal or high.

Present study showed that near tow third (60%) of study group their age more than 50year ,more than half (58%) of them were female while more than half (52%) of them were urban, two third (66%) of them were married. Also the study showed that one third (32%) of them were illiterate, and majority(80%)of them were un employee.

On the other hand the present study showed that majority (75%) were insulin dependent this result agree with Literature review (hypoglycemia Is common in people with type I diabetes and occasionally occur in people with type 2 who are treated with oral hypoglycemic agents) [(6)], also the study showed that more than two third (68 %) of them had more than 5 year duration of disease less than half (44%) of study group were used insulin, also study showed more than third(38%)of study group were take 3 meal with snack.

The present study reflect that majority (80%) of study group were take the dose before meal(15-30m), also the study showed that more than half (54%) of them were tacked dose immediately when missed it. Regarding the knowledge about mean of hypoglycemia the present study result revealed that half(50%)of study group had poor knowledge about hypoglycemia, in addition the study showed half (50%) of them were sometimes have attack of hypoglycemia. According to trigger factors of hypoglycemia the present study revealed that more than half (52%) of study group had poor knowledge, according to study was done by American diabetic center (ADC) show the trigger factor was side effect of diabetic medication, longer duration of diabetes, older age and skipping of meal. [(8)]

According to symptom of hypoglycemia the result revealed that two third (60 %) of study group had good knowledge. Also more than half (58%) were drank sweaty juice during attack of hypoglycemia. Addition to complication result explained that more than one third (38%) of study group had fair knowledge. Exercise performed by study group is essential result showed that majority (74%) of them were performed football, and that more than half (54%) of them of study group were regular follow up. The present study reflect that more than half (54%) of study group had negative attitude about self blood monitoring level as precaution before exercise, according to study done by (Joslin Diabetes Center) that patient should measure their blood glucose before exercise to prevent low blood glucose after exercise for the next24 hour as precaution. [10]

Also that most majority (88%) of them had positive attitude about(taking medication-) while that more than half (58%) had positive attitude about (taking snake ,in addition that more than half (54%) had positive attitude about (carry diabetic identification card always and that tow third (66%)had positive attitude about tacking dose when missed. On the other hand the present study showed that, Near to two third (62%)of study group had negative attitude about checked your blood glucose before exercising also that more than half (58%)of them had positive attitude about consume appropriate snake before exercising while that majority (74%) had negative attitude about limitation exercise (1 – 2) per day, that majority (78%) had negative attitude about checked blood glucose more than 2 – 4 hrs after exercise.

In addition result revealed that most (94%) of study group had positive attitude about administer fast sugar or carbohydrate 10 – 20 ml/dl also that all most (92%) of them had positive attitude about taking juice 100 – 200 ml while (56%) had positive attitude about available glucose tablets or available source of sugar. And that more than tow third (72%) had positive attitude when call help.

Their was no significant relation ship between the gender, residence level of education about attack, action taken about of hypoglycemia (*p .690- .521*), (*P .379, .558*), (*P .173 - .757*).

Conclusion

Based on finding result study conclude:

half of study group had poor knowledge about mean, causes of hypoglycemia.

More than half were regular follow up, and majority of them were perform exercise, and half were attack of hypoglycemia.

Recommendations

The study recommended that:

- The hospital administrator should to establish society (Diabetic Associates Friend.)For diabetic patient and let them actively participate to improve their lifestyle.
- The hospital should train specialized nurses to perform health education at center.
- Nurses should keep fixed program to discuss problems that faced diabetic patient
- To keep these programs continuous by encouraging diabetic patient to share new trained regarding diabetic care.
- There is a need for health education as hypoglycemia causes severe morbidity and mortality and we suggest using different ways of communication as mass media, communication with health workers and curriculums.

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Shendi University

Faculty of graduate studies and scientific research

Questionnaire about assessment of diabetic patient knowledge and attitude regarding hypoglycemia in Elmer Nimer hospital. Clinic

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Part one: demographic personal:

1) Age:

a. 20 – 30 years { } b. 30 – 40 years { } c. 40 –50years { }

d. more than 50 years { }

2) Gender:

a. Male { } b. Female { }

3) Residence:

a. rural { } b. urban { }

4) Marital status:

a. married { } b. separated { } c. single { } d. divorced { }

5) Education level:

a. illiterate { } b. Kallwa { } c. Primary { } d. Secondary { }

e. higher education { }

6) Occupation:

a. employee **{ }** b. unemployed **{ }**

Part two: knowledge about hypoglycemia:

7) Type of diabetic mellitus:

a. insuline dependent **{ }** b. non insuline dependent **{ }**

8) Duration of diabetes:

a. less than 1 years { } b. 1 – 5 years { } c. more than 5 years { }

9) Type of anti diabetic you take:

a. insulin { } b. oral hypoglycemic agent { } c. not in regiment treatment { }

10) How many meal taken per day:

a. three meals **{ }** b. two meals **{ }** c. three meals with snack **{ }**

b. four meals **{ }** c. five meals **{ }**

11) Time of dose in relation to meal:

a. before meal 15 – 30 minute **{ }** b. after meal **{ }** c. while meal **{ }**

12) What action taken when you miss dose:

a. take immediately **{ }** b. stopped meal **{ }** c. tack et after meal **{ }**

d. omit **{ }**

13) Hypoglycemia means:

a. reduce blood glucose level less than 50 mg/dl **{ }**

b. low blood sugar and resolution of these symptom once the blood sugar improve **{ }** c. I don't know **{ }**

14) Are you attack of hypoglycemia before?

a. sometime **{ }** b. always **{ }** c. rarely **{ }** d. never **{ }**

15) Causes of hypoglycemia:

a. missing meal **{ }** b. heavy exercise **{ }** c. increase dose **{ }**

16) Common symptom of hypoglycemia:

a. sweating **{ }** b. felling of numbness **{ }** c. tremor **{ }**

d. palpitation **{ }** e. headache **{ }** f. dizziness **{ }**

g. visual impairment **{ }** h. lack of conscious **{ }**

17) Action taken during hypoglycemia attack:

a. take sweat piece **{ }** b. drink sweaty juice **{ }**

c. measuring of blood glucose level **{ }**

18) Complication of hypoglycemia is:

a. seizure **{ }** b. un consciousness **{ }** c. brain damage **{ }**

d. death **{ }** e. I don't know **{ }**

19) What type of exercise performed:

a. walking **{ }** b. swimming **{ }** c. foot ball **{ }** d. not done exercise **{ }**

20) Are you on regular follow up:

a. regular **{ }** b. sometime **{ }** c. never **{ }**

Part three: ***about attitude regarding hypoglycemia*** **:**

Attitude of diabetic patient	***strongly agree***	**Agree**	**Neither**	**Disagree**	**Strong disagree**
1- Self blood glucose monitoring at home regularly before breakfast					
2- Taking medication at the right time (20 – 30 minutes) before meal.					
3- Taking snake between meals					
4- Carry diabetic identification card always					
5- When missed dose: take immediately.					
6- About exercise: a. check your blood glucose before exercising b. consume appropriate snake. c. limit your exercise (1 – 2) per day. d. check your blood glucose more than 2 – 4 hrs after exercise.					
7- About treatment of hypoglycemia attack: a. administer fast sugar or carbohydrate 10 – 20 ml/dl b. juice 100 – 200 ml. c. available glucose tablets or available source of sugar. d. call help.					