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RESEARCH ARTICLE

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES TOWARD FIRST AID OF HYPOGLYCEMIA IN SAUDI ARABIA, RIYADH AND JEDDAH CITIES 2016.

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Manuscript Info

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Abstract

Background: Hypoglycemia is one of the most common complications of diabetes management. The over enthusiastic approach in maintaining tight blood sugar control so as to reduce the long-term complications of diabetes have resulted in increase in frequency of this complication. This situation seems to get worsened with use of combination of anti-diabetic drugs.

Objectives: To assess the level of awareness toward First Aid Related To Hypoglycemia among Population In Riyadh And Jeddah cities to identify barriers.

Methods: A cross sectional analytical questionnaire based study among the general population of Riyadh And Jeddah cities.

Results: A total of 360 subjects answered the questionnaires. The mean age were 36 years, ranged from 16 to 70 and 45.2% females and 43.7% male respondents .Of these, 67% had attended college, 5% had postgraduate degree, 23.5% had completed high school, and 3.1%hadbasic school. The majority of participants had high level of monthly income (38%). The majority of subjects included in the research were (59.6%) married and (51.3%)were unemployed.

Most subjects (338)had poor knowledge about risk of hypoglycemia and there was no association between the knowledge and demographics of participants except for education as the higher the levels of education, the more significant association with good knowledge.

Conclusion: The Results of the present study reveal that the knowledge about the risks of hypoglycemia and first aid of hypoglycemia was poor among the studied population. Also, education significantly impacts the knowledge of hypoglycemia thus there is a need for providing the population and patients with necessary information to improve their hypoglycemia awareness.

Background:-

Hypoglycemia is one of the most common complications of diabetes management. The over enthusiastic approach in maintaining tight blood sugar control so as to reduce the long-term complications of diabetes have resulted in increase in frequency of this complication. This situation seems to get worsened with use of combination of anti-diabetic drugs.

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The American Diabetes Association defines the hypoglycemia as "any abnormally low plasma glucose concentration that exposes the subject to potential harm", and proposes a threshold of <70 mg% [1]. In subjects with type 1 diabetes, autoimmune destruction of pancreatic β-cells leads eventually to an absolute requirement for insulin replacement therapy. Insulin delivered exogenously is not subject to normal physiological feedback regulation, so it may induce hypoglycemia even in the presence of an intact counter regulatory response . The average individual with type 1 diabetes experiences about two episodes of symptomatic hypoglycemia per week, a figure that has not changed substantially in the last 20 years[2]. This risk is increased markedly with the increasing duration of the disease and strict glycemic control. In subjects with type 2 diabetes, the increasing duration of the disease and the more widespread use of insulin therapy also increase the risk of severe hypoglycemia. This was reflected in a recent survey in Tayside, Scotland, which found the proportion of severe hypoglycemic episodes needing emergency medical assistance was similar between type 1 and insulin-treated type 2 diabetic patients [3]. Our Study Was Designed To Examine Health Beliefs And Assessment Level OF Awareness Toward Early First Aid Related To Hypoglycemia among Population In Saudi Arabia, Riyadh And Jeddah And Applies The Health Belief Model To Determine Barriers.

Rationale:-

Diabetes mellitus is a chronic disease that constitutes a major public health problem. The worldwide prevalence of DM has risen tremendously over the past two decades. Hypoglycemia is one of the most common complications of diabetes management. The over enthusiastic approach in maintaining tight blood sugar control so as to reduce the long-term complications of diabetes have resulted in increase in frequency of this complication. This situation seems to get worsened with use of combination of anti-diabetic drugs.

Objectives:-

General objectives:-

To assess the level of awareness toward First Aid Related To Hypoglycemia among Population In Riyadh And Jeddah cities to identify barriers.

Specific objective:-

The goal of this study was to examine community health beliefs regarding hypoglycemia and their perceptions related to it and evaluate the role of demographic factors in shaping beliefs about first aid related to hypoglycemia and assess possible associations between demographic characteristics with the preventive behavior of interest.

Methods:-

Study design: cross sectional study.

Setting and data collection:-

This survey analysis was conducted among community population in Riyadh and Jeddah cities. A preformed self-administered questionnaire was distributed among the community population.

Sample:-

Subjects were chosen according to geographical and sex distribution. Sample size was calculated based on web-site calculator [4]taking the total size of Riyadh and Jeddah population (4,087,000+2,800,000) [5], confidence level (95%) and margin error (5%) to be 285. Additional 20 % was added to cover the missing data . The total sample obtained was 360.

Study population:-

The study population included were both male and female in Riyadh and Jeddah cities.

Study tool:-

Preformed Self-administered questionnaire that requires information about:

1- Demographic characteristics: age, gender, education level, monthly income, marital status, and employment.
2- Knowledge assessment including 7 questions about risk factor of hypoglycemia and first aid of hypoglycemia . A score of 1 was given to yes and 0 otherwise. For each subject, a maximum score of 7 was calculated. A scoring system was applied to measure the respondents' knowledge towards hypoglycemia impacts. The hypoglycemia knowledge score was calculated as a continuous variable by summing the participant's number

of yes answers to the questions. One point was awarded for each yes, and zero for each no or don't know, with a maximum obtainable correct score of 7 for each respondent. The knowledge score was categorized into two levels indicated by poor (0–4.5), and good (5-7).

Ethical considerations:-
An informed consent was obtained from the participants included in this research before filling the questionnaire.

Statistical analysis:-
Data were entered into the Statistical Package for Social Sciences (SPSS, version 24, SPSS, Chicago, IL, U.S.A.) and descriptive analysis conducted. The results were reported as percentage (95% confidence interval).

The internal consistency was assessed using Cronbach's α test. The test results were for the7 statements of knowledge about hypoglycemia first aid was 0.422.

Association of respondents' characteristics with about hypoglycemia first aid , was evaluated using univariate logistic regression. Results were reported showing odds ratio (OR) and 95% confidence interval. Statistical significance was accepted at $p < 0.05$. The dependent variables: knowledge of hypoglycemia risk (1 = Poor knowledge and 0= good knowledge). The following independent variables were included: (1) age: ≤ 20 years, [21–30 years], [31–40 years],[41–50 years], > 50 years; (2) gender: males and females; (3) level of education: low, for those who completed secondary school or less, intermediate for those who finished college degree or have bachelor degree and high for those who had postgraduate degree; (4) monthly income: low [<3000Saudi Riyal (SR)], middle [3000–10000 SR] and high [>10000 SR];(5)marital status: single and married; (6) employment: unemployed and employed.

Results:-

Demographics of the studied subjects:
The socio-demographic characteristics were shown in Table. 1.

Table 1:- Socio-Demographic Characteristics of Respondents (n = 360)

	Frequency	**Percentage (%)**
Age (Year)		
<= 20.00	36	8.60%
21.00 - 30.00	125	29.70%
31.00 - 40.00	56	13.30%
41.00 - 50.00	47	11.20%
51.00+	63	15.0%
Missing	94	22.30%
Mean±SD (Min.-Max.)	36±14 (16 – 70)	
Gender		
Female	228	54.20%
Male	184	43.70%
Missing	9	2.10%
Educationlevel		
Basic school	13	3.10%
High School	99	23.50%
Collage degree	282	67.00%
Post-graduate	21	5.00%
Missing	6	1.40%
Monthly Income		
< 3000	90	21.40%
3000-5000	46	10.90%
5000-7000	34	8.10%
7000-10000	80	19.00%
>10000	160	38.00%

Missing	11	2.60%
Marital Status		
Married	251	59.60%
Un Married	169	40.10%
Missing	1	0.20%
Employment		
Employed	194	46.10%
Un Employed	216	51.30%
Missing	11	2.60%

A total of 360 subjects were included in the study and answered the questionnaire. The age ranged from 16 to 70 years. The mean was 36 and about 8.6% of subjects were less than 20 years old, 29.7% of participants were from 21-30 years old, 13.3% were from 31-40% years old, 11.2% ranged from 41-50 years old, 15% were more than 51 years old and 22.3% of participants had missing data about age.

The gender distribution showed that 54.2% of participants were females, 43.7% were males and 2.1% had missing data about gender.

The study population represents a highly educated group of people, with 67% having attended university or college, 23.5% having completed high school, 5% having post-graduate degree and 3.1% completed basic school and 1.4% had missing data about education level.

The majority of participants had high level of monthly income (38%) more than 10.000SR, followed by 21.4% of patients had monthly income less than 3000 SR then 19% had income ranged from 7000-10.000 SR, 10.95% had an income that ranged from 3000-5000 SR and 8.1% had an income ranged from 5000-7000 SR.

The marital status showed that the majority of subjects included in the research were (59.6%) married and 40.1% were un-married.

The most of subjects were unemployed (51.3%), and 46.1% were employed, however only 2.6% had missing data.

Responses to questions of knowledge assessment questionnaire (Table. 2):-

The response of participants to question 1 showed that 76.5% of patients answered that they had good knowledge about risks of hypoglycemia and hypoglycemia first aid, 58.4% of subjects answered yes to question 2 as they have knowledge about the importance of hypoglycemia assessment by doctors.

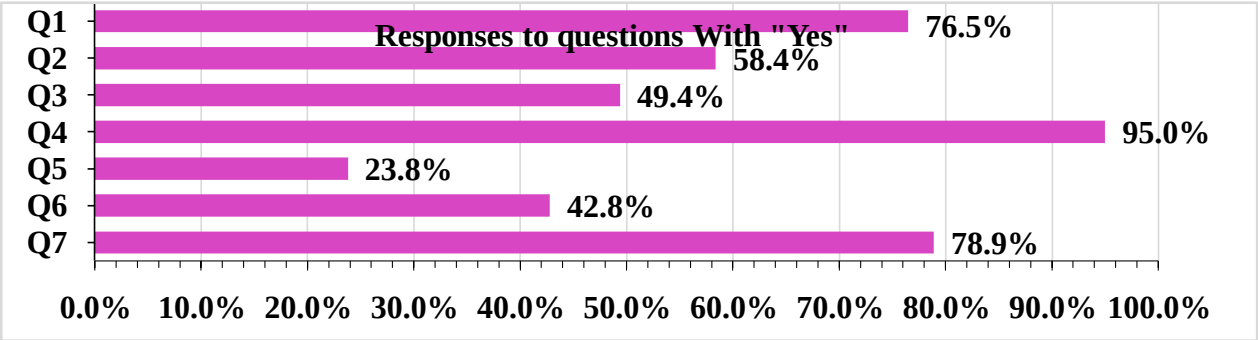
As for question 3, 50.6% of participants had no knowledge about the first aid hypoglycemia and 49.4% answered yes to this question.

Regarding to Q 4, 95% of subjects said yes to their knowledge about the treatment of diabetes have hypoglycemic effect on blood glucose. But 76.2% of participants said that the majority of doctors underestimate informing patients about the risks of diabetic therapy in Q 5.

57.2% of subjects said that doctors doesn't give them enough information about hypoglycemia and 42.8% had been given information about hypoglycemia in question 6. In question 78.9% of patients had knowledge about the complication of hypoglycemia (Figure. 1).

Table 2:- Responses to questions on assessment level of awareness toward hypoglycemia risk

	No	Yes	Don't Know
Q1: Do you think that the hypoglycemia has risks?	99(23.50%)	322(76.50 %)	0 (0.0%)
Q2: Do you think that hypoglycemia assessment by doctors are important?	129 (30.60%)	246 (58.40%)	46(10.90 %)
Q3: Do you have knowledge about the first aid of hypoglycemia?	213 (50.60%)	208 (49.40%)	0 (0.0%)
Q4: Do you think treatment of diabetes have hypoglycemic effect on blood glucose?	21 (5.00%)	400 (95.00%)	0 (0.0%)
Q5: Do doctors clarify the impacts of diabetes therapy?	321 (76.20%)	100 (23.80%)	0 (0.0%)
Q6: Do doctors provide adequate information for people to avoid hypoglycemia ?	241 (57.20%)	180 (42.80%)	0 (0.0%)
Q7: Do you think hypoglycemia leads to sever complication can cause death?	89 (21.10%)	332 (78.90%)	0 (0.0%)



hypoglycemia risks (**Figure. 2**).

Table 3:- Knowledge of awareness toward first aid of hypoglycemia

	Knowledge Score
Mean± SD	4.25±1.44
Min.- Max.	0-7
Good Knowledge (≥5.69)	83 (19.71%)
Poor knowledge (<5.69)	338 (80.29%)

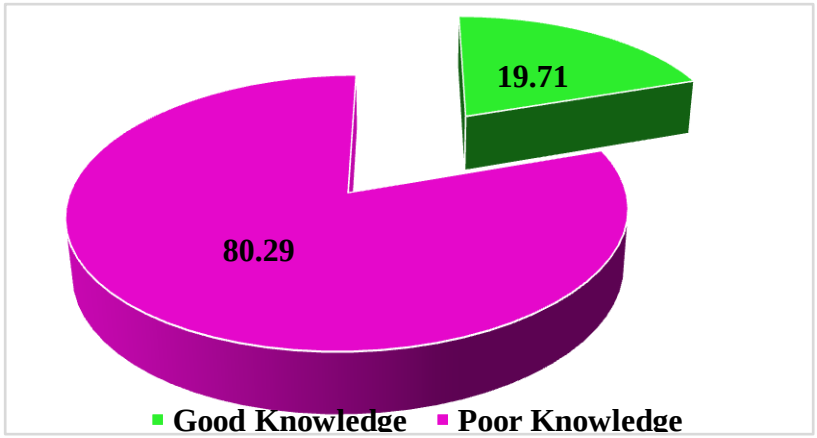


Figure 2:- Respondent's Knowledge about first aid of hypoglycemia

Association between knowledge and demographics of included participants:-

Univariate logistic regression to study the association between knowledge and participant's demographics showed that, neither age nor other demographic variables showed significant association with being aware of hypoglycemic risks (P >0.05). However, education level achieved statistical significance (p <0.0001) association with knowledge as higher education resulted in good levels of hypoglycemia first aid(Table. 4). Interestingly, it was found that respondents who have completed their college degree have had a higher likelihood to have poor knowledge about hypoglycemia risks with an OR (95%CI) of 8.07 (3.11 - 20.94) when compared with those who get higher post-graduate degree (Master of PhD). Nearly the same difference was found in respondents, who have completed either high school or lower, with % of poor knowledge about (80.4%) when compared with individuals with high post graduate degrees (Figure. 3).

Table. 4:- Univariate logistic regression model for association between hypoglycemia knowledge and socio-demographic variables:

	Good Knowledge (n=83)	**Poor Knowledge (n=338)**	OR (95%CI)	P-value
Age				
<= 20.00	5(13.9%)	31(86.1%)	1	0.434
21.00 - 30.00	30(24.0%)	95(76.0%)	0.51(0.18-1.43)	0.201
31.00 - 40.00	8(14.3%)	48(85.7%)	0.97 (0.29-3.23)	0.957
41.00 - 50.00	9(19.1%)	38(80.9%)	0.68 (0.21-2.24)	0.527
51.00+	10(15.9%)	53(84.1%)	0.86 (0.27-2.73)	0.791
Gender				
Female	39(17.1%)	189 (82.9%)	1	0.115
Male	43(23.4%)	141(76.6%)	0.68 (0.42-1.1)	
Education Level				
High	14 (66.7%)	7 (33.3%)	1	< 0.0001
Intermediate	56 (19.9%)	226 (80.1%)	8.07 (3.11 - 20.94)	< 0.0001
Low	22 (19.6%)	90 (80.4%)	8.18 (2.95 -22.69)	< 0.0001
Monthly Income (SR)				
> 10,000 SR	31(19.4%)	129(80.6%)	1	0.68
3000-10000 SR	34(21.3%)	126(78.8%)	0.89 (0.52-1.54)	0.677
< 3000 SR	15(16.7%)	75(83.3%)	1.2 (0.61-2.37)	0.596
Marital Status				
Married	51(20.3%)	200(79.7%)	1	0.727
Un Married	32(18.9%)	137(81.1%)	1.09(0.67-1.79)	
Employment				
Employed	42(21.6%)	152(78.4%)	1	0.429
Un Employed	40(18.5%)	176(81.5%)	1.22(0.75-1.97)	

OR: Odds ratio, CI: Confidence Interval

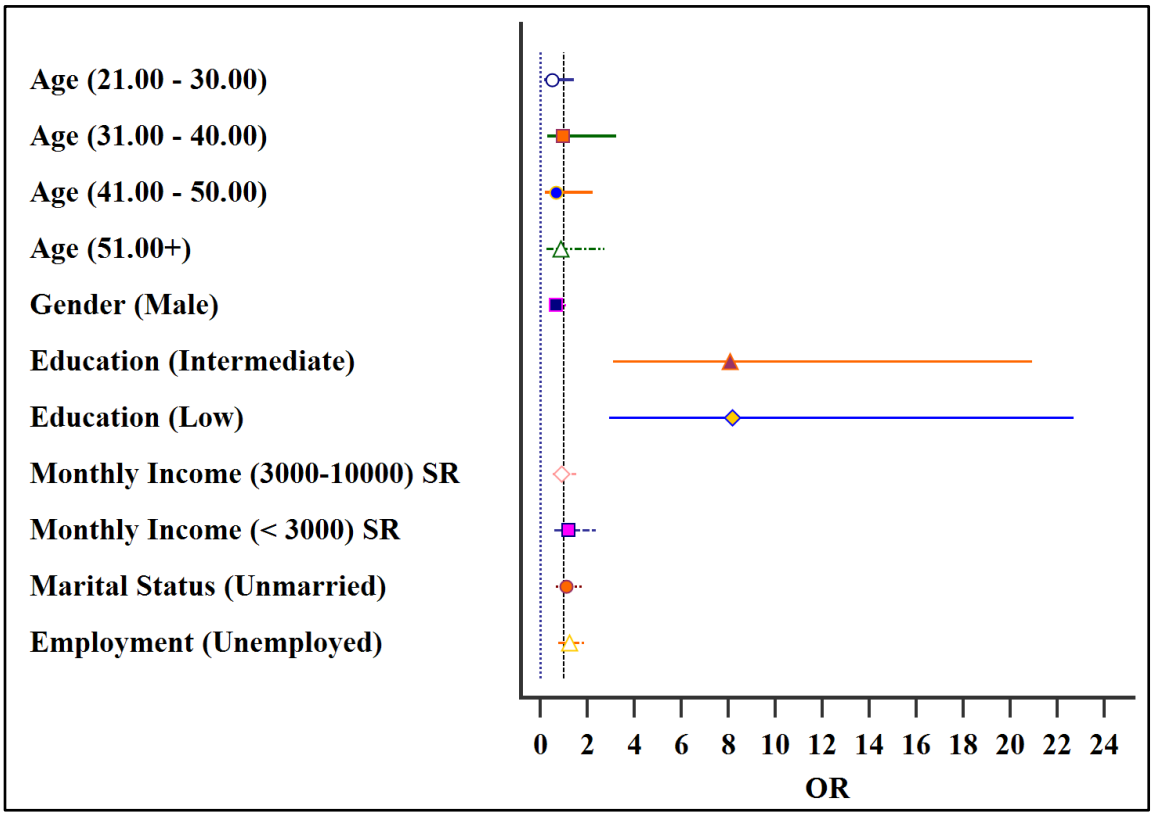


Figure 3:- Forest plot illustrating the odd ratios with 95% confidence intervals of the different socio-demographic predictors for Respondent's Knowledge about hypoglycemia first aid

Discussion and conclusion:-

This study has some limitations including that sample size in this research were educated group, and doesn't represent the whole population of the Riyadh And Jeddah cities thus the results can't be generalized. Also, Regardless of the sample size limitations, this study showed that there is a poor knowledge in the general population awareness about risks and first aid of hypoglycemia .

The response of participants to the questions showed that the majority had good knowledge about risks and first aid of hypoglycemia .

On the other hand the majority of doctors don't give the patients adequate information for risks nor first aid of hypoglycemia.

Thus doctors should provide patients with the necessary information to increase their awareness toward risks and first aid of hypoglycemia as it is a part of the responsibility of healthcare providers. Also, hypoglycemia significantly affected the general knowledge of the included participants.

In conclusion, the knowledge about risks of hypoglycemia and first aid of hypoglycemia was poor , thus the awareness about hypoglycemia and first aid of hypoglycemia must be increased. This study showed a poor awareness about hypoglycemia and first aid of hypoglycemia in the general population. Thus many studies should be conducted to provide the necessary information in order to increase of hypoglycemia and first aid of hypoglycemia awareness of population .

Budget:-

Item	*Price*
Transportations	*700 SR*
Paper work	*800 SR*
Software programs	*2000 SR*
Books	*1000SR*
Stationaries	*1000SR*

Work plan;-

Tasks in the work plan	Time period
Literature review	**2 Months**
Preparation for data collection	**1 Months**
Data collection	**3 Months**
Statistical analysis	**1 Months**
Discussion of results	**2 months**
Writing an abstract	**1 months**

References:-

1. Workgroup on Hypoglycemia, American Diabetes Association. Defining and reporting hypoglycemia in diabetes: A report from the American Diabetes Association Workgroup on Hypoglycemia. Diabetes Care. 2005;28:1245–9.
2. Frier BM. The incidence and impact of hypoglycemia in type 1 and type 2 diabetes. International Diabetes Monitor 2009;21:210–218.
3. Leese GP, Wang J, Broomhall J, Kelly P, Marsden A, Morrison W, Frier BM, Morris AD. DARTS/MEMO Collaboration Frequency of severe hypoglycemia requiring emergency treatment in type 1 and type 2 diabetes: a population-based study of health service resource use. Diabetes Care 2003;26:1176–1180
4. http://www.calculator.net/sample-size-calculator.html?type=1&cl=95&ci=5&ps=3%2C976%2C000&x=37&y=6.
5. 50 SY.Central Department Of Statistics & Information. 2014.