# A Study Of Knowledge Attitude And Practices Of Saudi Women Towards Diabetes Mellitus. A (KAP) Study In Al-Qassim Region

Z Saadia, S Rushdi, M Alsheha, H Saeed, M Rajab

**Citation**

Z Saadia, S Rushdi, M Alsheha, H Saeed, M Rajab. *A Study Of Knowledge Attitude And Practices Of Saudi Women Towards Diabetes Mellitus. A (KAP) Study In Al-Qassim Region*. The Internet Journal of Health. 2009 Volume 11 Number 2.

**Abstract**

Objectives: Diabetes Mellitus is a major health problem with individual, social and economical consequences. Knowledge, attitude and practice (KAP) surveys are effective in providing baseline for evaluating intervention programmes. This study was conducted with the aim to know the level of awareness regarding type 2 diabetes mellitus to aid in future development of programmes and techniques for effective health educationStudy Design: Cross sectional descriptiveMethodology: This cross sectional study describes the Knowledge, Attitude and Practices (KAP) among female diabetic patients attending the Mother andChild Hospital and Qassim University Clinic in Buraydah from Jan 2009 toJune 2009. KAP questionnaire was used for this purpose after getting permissionfrom P and T journal Medi Media USA. Data was analyzed using descriptive analysis Microsoft office 2007 window vista and SPSS version 16 .Results: Altogether, 56.14 % of respondents scored 100% in the questions related with knowledge. However 17.58% scored 100% in the attitude questions and15.78%scored 100% in practice questions. The overall KAP score had a mean of 16and standard deviation (SD) of 6.066. The respondents correctly answering (all?) the knowledge questions have a mean Score of 12.42 and SD 3.034. The respondents answering correctly attitude and Practice questions had a mean Score of 1.46±1.739 and 2.79±2.289 respectively. Conclusion: Results revealed good knowledge but poor attitude andPractices toward diabetes. We concluded that there is a need for structured programmes to improve attitude and practices of diabetic patients to promote better compliance

## INTRODUCTION

Diabetes mellitus is believed to be the commonest and most devastating chronic disease in human history. It has afflicted mankind for thousands of years and continues to do so at an exponential rate [1]. It is now a global epidemic with devastating humanitarian, social and economical consequences. In International Journal of Health Sciences,,Dr Tabish in his editorial labeled it as an epidemic of 21st century [2].

During the past three decades, the population of the Kingdom of Saudi Arabia has undergone tremendous changes in lifestyle, primarily leading to decreased physical activity and unhealthy eating habits. These changes have had a considerable negative impact on the health of the society. Indeed, this lifestyle transformation is thought to be responsible for the epidemic of non communicable diseases and their complications in the country[3, 4, 5]

In addition, type 2 diabetes mellitus and obesity are becoming increasingly more prevalent among Saudi females[3,6] . The serious spread of disease can cripple the nation's fiscal and human resources; therefore, it's the time to act now and do as much as possible to cover almost all aspects of the disease. The overwhelming burden of the disease threatens to stunt economic growth and undermine the benefits of improved standards of living and education. Proper education and awareness programmes developed according to the need of the society can improve the knowledge of patients and change their attitude. A study from Pakistan highlighted the fact that proper education and awareness programme can improve the knowledge of patients and change their attitude as a large gap was found between knowledge and attitude[7] . A study from Malaysia shows good knowledge attitude and practice (KAP) of diabetic patients in this region[8] . These differences may be due to differences of literacy rate and information about diabetes[9] .

Obtaining information about the level of awareness is the

first step in formulating a preventive programme for the disease. There is need to investigate KAP among diabetic patients to aid in future development of programmes and techniques for effective health education. KAP surveys are effective in providing baseline for evaluating intervention programmes[10] .

Patients if given proper education and guidance towards diabetes care would be able to make a significant improvement in life style which is helpful for good glycemic control. Education to diabetic patients would be more effective if we know the level of knowledge attitude and practice of our patients. This study was conducted to assess the general characteristics of diabetic patients and their baseline knowledge, attitude and practice towards Diabetes.

## METHODOLOGY

A cross sectional descriptive study was conducted over a period of 6month from 1st Jan-30th June 2009 in Qassim University clinic and Mother and Child Hospital Burayda

KAP questionnaire developed by P and T Journal Multimedia USA was used for data collection after getting their permission modified form of this questionnaire with back translated Arabic version covering four aspects of disease demographic factors, knowledge, attitude and practices of women towards diabetes was used. The interviewer did not in any way try to improve the knowledge of respondents. Arabic version of questionnaire was provided for uniformity.

All Diabetic women type ( 2) willingly participating and residing in Qassim Region were included. Women residing in other regions of the Kingdom, Questionnaire with incomplete data and unwilling patients were excluded

The variables studied were demographic characteristics like age, parity, occupation and educational status. Outcome variables were Knowledge , Attitude and Practice

The questionnaire had 25 questions (knowledge-18, attitude-4 and practice-3 questions) and each correct answer and was given a score of ‘one’ and each wrong answer was given a score of ‘zero’.

Responses were coded and analysed using SPSS-version 16 and descriptive statistics were used to study the characteristics of the study population. Microsoft office 2007, Window vista was used to perform descriptive analysis .

In all cases completion of survey was voluntary and done prior to departure from the clinic. All collected information was anonymous and did not contain patient’s identity. Informed verbal consent was obtained. If they did not want to answer any question they were allowed to skip. They were also informed that it had nothing to do with their treatment which will keep on going as routine.

## RESULTS

Altogether 570 patients were enrolled in the study. The largest number of patients were in the age group of 31-40years (table-1).The overall KAP Score had a Mean ± SD of 16.70±6.06. Knowledge score was 12.42±3.034; attitude 1.46±1.79 and Practice 2.79±2.28, with maximum possible scores for knowledge, attitude and practice patient being 14, 5 and 6 respectively-(Table-5).

## CHARACTERISTICS OF THE SUBJECTS:

Most of the respondents (42.1 %) were aged 31-40 years, followed by those aged 20-30 years. Most of them 71.9% were educated up till graduate level (table-1). Source of information on diabetes Respondents were asked to identify the one main source of information on diabetes. The major source of knowledge was medical staff (68% ) by brouhiers provided by the hospital followed by television (12%) and newspaper (10%). However 10% received information from friends and relatives

Questions on knowledge regarding symptoms of diabetes
The respondents were assessed on their knowledge regarding symptoms of diabetes cause and treatment. Table 2 shows the percentage distribution of respondents by knowledge on different aspects of diabetes. Majority were aware about the causes, symptoms and complications of the disease (Figure-2)

Questions on Attitude

Figure-3 reveals poor score in attitude part of the questionnaire only 35%had positive attitude towards exercise (Table-3)

Questions on Practice

All patients who had their investigations done with in one month were given a score of one and if more than one month they were given zero score Table-4 shows the percentage distribution of answers to the questions on practices. Figure -4 displays the frequency distribution of respondents’ total practice score. Only 68% of patients had their blood sugar

checked with in one month. Only 16% had eye examination done in last month. Only 17% of patients were able to answer 50% of practice questions correctly.

**Figure 1**

Figure 1: Frequency distribution of overall score
152x122mm (72 x 72 DPI)

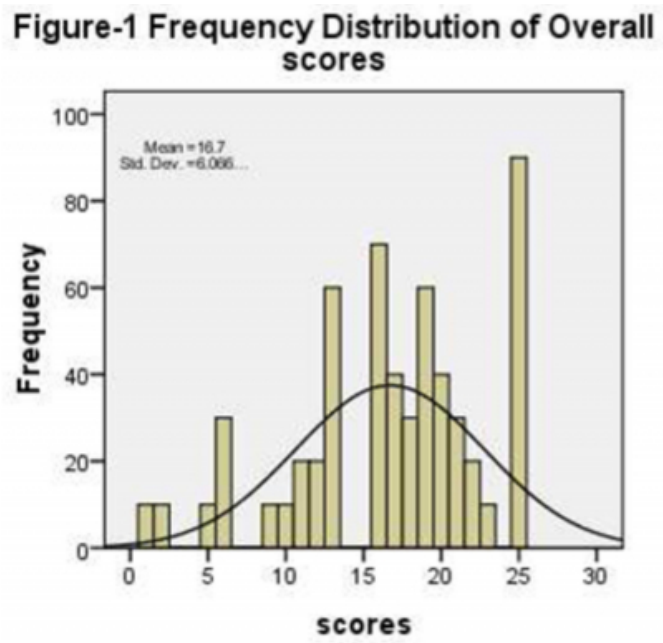


Figure 1: Frequency distribution of overall score
152x122mm (72 x 72 DPI)

**Figure 2**

Figure 2: Frequency distribution of knowledge score
138x111mm (72 x 72 DPI)

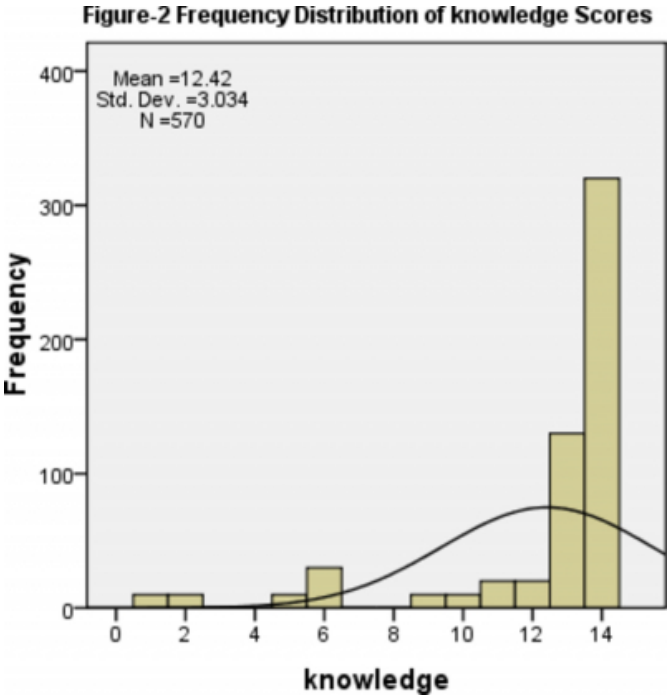


**Figure 3**

Figure 3: Frequency distribution of Attitude score
142x114mm (72 x 72 DPI)

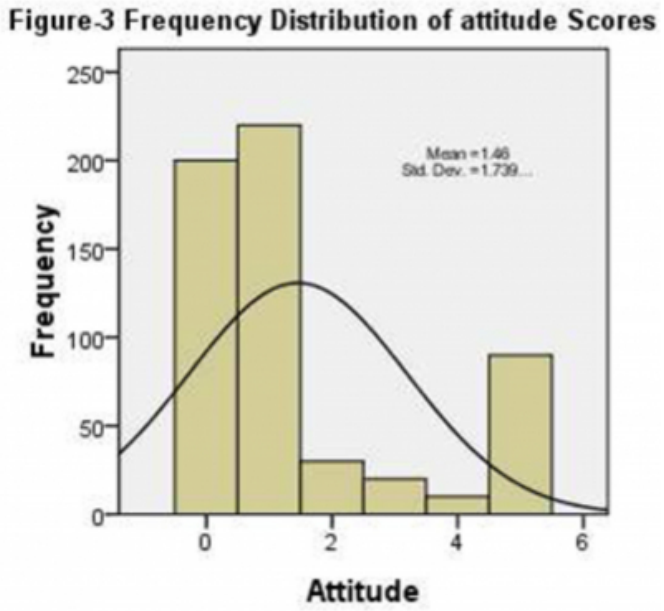

**Figure 4**

Figure 4: Frequency distribution of Practice score
154x123mm (72 x 72 DPI)

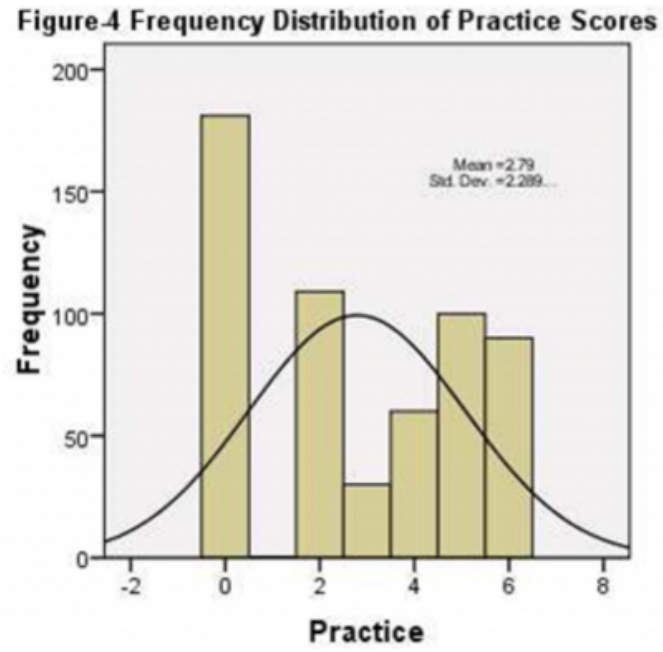


**Figure 5**

Table-1 Demographic details of the patients

| S/N | Variables | No of Patients | %age |
|---|---|---|---|
| 1 | **Marital status** | 570 | |
| | Married | 560 | 98.24 |
| | Unmarried | 10 | 1.754 |
| 2 | **Educational status** | 570 | |
| | Illiterate | 140 | 24.56 |
| | Primary | 20 | 3.50 |
| | Secondary school | 250 | 43.85 |
| | Graduate | 140 | 24.56 |
| | Post Graduate | 20 | 3.50 |
| 3 | **Parity** | 560 | |
| | Below5 | 220 | 39.28 |
| | 50r above | 340 | 60.71 |
| 4 | **Age** | | |
| | <20 yrs | 0 | |
| | 21-30 yrs | 180 | 31.57 |
| | 31-40 yrs | 240 | 42.10 |
| | 41 or above | 150 | 26.31 |

**Figure 6**

Table2- Response to Knowledge Questions

| S/N | Questions | No of persons correctly answering | %age |
|---|---|---|---|
| 1 | Diabetes is a condition in which the body contains… | 570 | 100 |
| 2 | The major cause of diabetes is… | 320 | 56.14 |
| 3 | The symptom(s) of diabetes is/are….. | 470 | 82.45 |
| 4 | Diabetes, if not treated…… | 520 | 91.22 |
| 5 | The most accurate method of monitoring diabetes is... | 500 | 87.77 |
| 6 | In a diabetic patient, high blood pressure can increase or worsen…. | 510 | 89.47 |
| 7 | A diabetic patient should measure his or her blood pressure… | 490 | 85.96 |
| 8 | The lifestyle modification(s) required for diabetic patients is/are… | 450 | 78.94 |
| 9 | A diabetic patient should have his or her eyes checked…. | 510 | 89.47 |
| 10 | Regular urine tests will help in knowing… | 550 | 96.49 |
| 11 | The important factors that help in controlling blood sugar are | 550 | 96.49 |
| 12 | A regular exercise regimen will help in | 560 | 98.24 |
| 13 | The well-balanced diet includes…… | 550 | 96.49 |
| 14 | Treatment of diabetes comprises…… | 510 | 89.49 |

**Figure 7**

Table-3 Response to Attitude Questions

| S/N | Questions | No of patients answering correctly | %age |
|---|---|---|---|
| 1 | Should a patient with diabetes exercise regularly…… | 200 | 35.087 |
| 2 | Does a subject with diabetes follow a controlled and planned diet……? | 480 | 84.21 |
| 3 | Do you think missing taking the doses of your diabetic Medication will have a negative effect on your disease control……? | 440 | 77.19 |
| 4 | Will you let your blood sugar levels fall below normal when you are taking drugs……..? | 460 | 80.70 |
| 5 | Do you think you should keep in touch with your physician? | 420 | 73.68 |

**Figure 8**

Table-4 Response to Practice Questions

| S/N | Questions | No of Patients answering correctly | %age |
|---|---|---|---|
| 1 | When was your blood pressure Checked last? | 250 | 43.85 |
| 2 | When did you have your last eye Examination? | 90 | 15.78 |
| 3 | When was your last urine exam done? | 390 | 68.42 |
| 4 | When was your last visit with your physician? | 280 | 49.12 |
| 5 | When was your last blood sugar checked | 390 | 68.42 |
| 6 | When did you had your last lipids checked? | 90 | 33.33 |

## DISCUSSION

The management of Diabetes Mellitus not only requires the prescription of appropriate nutritional and pharmacological regimen by the physician but also intensive education and counseling of the patient[11] .

Almost 90% of patients answered 50% of the knowledge questions correctly (Figure-1) Still a large proportion of population that is almost 40.3% were not able to score above 10.This is comparable to the results of a study done in Malaysia by Ranjini Subashini et al who reported 87% respondents able to answer 50%knowledge questions correctly [8]. . The lack of proper knowledge of each patient should be given individual attention with clear view of its purpose, so that they understand and follow it in practice and fill the gap of this 10% to 100% as studies report that there is a positive correlation between knowledge and good attitude [8] . Improving the Knowledge of the diabetics in our society will not be an easy task. Great efforts would be needed by health teams to enhance education of the diabetic patient in order to promote compliance.

Regarding Attitude 17.5% scored above 50% in this study however reports from Malaysia revealed good attitude with 98% scoring above 50% [8] . Attitude towards Exercise was also found to be poor. Only a few 35% had habit of exercise. Many studies have confirmed the beneficial role of physical activity in improving glycemic control. Given the importance of physical activity to diabetes management, the low physical activity in this and similar studies should raise concerns among clinicians and it is necessary that all patients should be encouraged to increase their physical activity [12] .

In Saudi Arabia, the prevalence of physical inactivity is extremely high, especially in women, and may be considered among the highest in the world [13] . Al Raeffa S report in his study that strong associations do exist between the high prevalence of physical inactivity in the Saudi population and the epidemic of modern chronic diseases and risk factors in Saudi Arabia. Therefore, reducing the proportion of inactive Saudis would have a tremendous impact on lowering these lifestyle-related diseases and risk factors, and thus reduce future health care costs in the Kingdom [14] .

This study also highlights the need of having dieticians and educators alongside consultant diabetologists in our diabetes care centers to educate the patients about diet a as 16% were not at all following the dietry plan and also the large population of respondents was missing their drug doses revealing a casual attitude towards the disease (Ref-Table3). Beneficial effects of diet and exercise are out of question [15] .

Over all 49% answered the 50% of Practice questions and only 15.74% Scored 100% revealing poor score for practice Whereas Malaysian study revealed 99 % answering 50% questions correctly [8] . A study from Nepal found the KAP scores of the patients to be low with Knowledge score 4.90 ± 3.34

Attitude 2.03 ± 0.95, Practice 0.84 ± 0.76 and Overall 7.78 ± 3.8 [16] . Monitoring of blood glucose is a simple and practical procedure acceptable for those patients who can afford it and facilitates the attainment of good glycemic control but unfortunately in our local population the practice was not good as 32% responded that their blood sugar level has not been checked in last week (Table-4).

Education and counseling about all the aspects of diabetes is needed. Group education as well as individualized education programmes should be planned which can lead to better preventive and management techniques in diabetes. Thus there is need for arranging large scale awareness programs for the general public and also to identify and use media to spread the message which could change the attitude of our public in the future.

## CONCLUSION

We conclude that, although the knowledge levels among our

study participants are high, the levels of attitudes and practice are lower than desirable. Therefore there is a need for structured programmes to improve attitude and practices of patients. This can be achieved by increasing quality and scope of health education at MOH level Studies with wider scope and much large sample size is recommended to confirm findings and explore relevant features

## LIMITATIONS OF THE STUDY

Because the study was based on hospital population, study population may not be the exact MCH is a major facility in the Qassim region catering majority of female population we believe that our results are very near to the prevailing condition in the general population

### References

1. Aldasouqi SA, Alzahrani AS. Terminology in diabetes; an example of resistance to change. Saudi Med J. 2004 Sep;25(9):1289-91.
2. Tabish SA. Is diabetes becoming biggest Epidemic of the twenty first century? International Journal of health sciences 2007; 1:5-8.
3. Al-Nozha MM, Arafah MR, Al-Mazrou YY, Al-Maatouq MA, Khan NB, Khalil MZ, Al-Khadra AH, Al-Marzouki K, Abdullah MA, Al-Harthi SS, Al-Shahid MS, Nouh MS, Al-Mobeireek A. Coronary artery disease in Saudi Arabia. Saudi Med J. 2004 Sep;25(9):
4. Al-Hazzaa HM. Physical activity, fitness and fatness among Saudi children and adolescents: implications for cardiovascular health. Saudi Med J. 2002 Feb;23(2):144-50.
5. Alwan A. Noncommunicable diseases a major challenge to public health in the region. Eastern Mediterranean Health J 1997; 3 (1): 6-16.
6. Al-Nuaim A, Bamgboye E, Al-Rubeaan K, Al-Mazrou Y. Overweight and obesity in Saudi Arabian adult population, role of sociodemographic variables. J Community Health 1997; 22: 211-23.
7. Shera AS, Jawad F, Basit A. Diabetes related knowledge, attitude and practices of family physicians in Pakistan. J Pak Med Assoc. 2002 Oct;52(10):465-70.
8. Ambigapathy R, Ambigapathy S, Ling HM. A knowledge, attitude and practice (KAP) study of diabetes mellitus among patients attending Klinik Kesihatan Seri Manjung. NCD Malaysia 2003; 2:6-16.
9. Shrestha L, Nagra JS. Knowledge, attitude and practice (KAP) study on diabetes mellitus among Nepalese diabetic patients. Nepal Med Coll J. 2005 Jun;7(1):51-3.
10. Ruzita T, Osman A, Fatimah A. et al. The effectiveness of group dietary counselling among non- insulin dependent diabetes mellitus (NIDDM) patients in resettlement scheme areas in Malaysia. Asia Pacific J Clin. Nutr 1997; 2: 84-87.
11. Nuttall FQ. “Carbohydrate and Dietary Management of Individuals with Insulin Requiring Diabetes”. Diabetes Care 1993;16:1039-42
12. Tans AS, Yong LS, Wan S, Wong ML.. “Patient education in the management of Diabetes Mellitus”. Singapore Med. J., 1997;38 :156-60
13. Williams CL, Hayman LL, Daniels SR, Robinson TN, Steinberger J, Paridon S,Bazzarre T. Cardiovascular health in childhood: A statement for health professionals from the Committee on Atherosclerosis, Hypertension, and Obesity in the Young (AHOY) of the Council on Cardiovascular Disease in the Young, American Heart Association. Circulation. 2002 Jul 2;106(1):143-60.
14. Al-Rafaee SA, Al-Hazzaa HM. Physical activity profile of adult males in Riyadh City. Saudi Med J. 2001 Sep;22(9):784-9.
15. Schneider DJ, Sobel BE. “Determinants of Coronary Vascular Disease In Patients With Type II Diabetes Mellitus And Their Therapeutic Implications”[Review]. Clinical Cardiology 1997;20: 433-40.
16. Dinesh K Upadhyay, Subish Palaian, P. Ravi Shanka,Knowledge, Attitude and Practice about Diabetes among Diabetes Patients in Western Nepal,Rawal Med J, Jan - Jun 2008;33(1):8-11.

## Author Information

**Zaheera Saadia**
Assistant Professor Obs and Gynae, Qassim University

**Salah Rushdi**
Professor and Chief of Obs and Gynae, Qassim University

**Munira Alsheha**
Consultant Obs and Gynae, Mother And Child Hospital

**Hassan Saeed**
Consultant Obs and Gynae, Mother And Child Hospital

**Mamoon Rajab**
Consultant Obs and Gynae, Mother And Child Hospital