

## Level of diabetes knowledge among adult patients with diabetes using diabetes knowledge test

*To the Editor*

We read with interest the article by Zowgar et al.<sup>1</sup> On the results of their study on the level of diabetes knowledge among adult patients with diabetes using diabetes knowledge test. They concluded that patients' knowledge regarding diabetes was found to be poor. The study was interesting and new to the Saudi literature. We appreciate the recommendations in this article and agree that better knowledge and significant associations were found with younger ages, high educational levels, longer duration of diabetes, and positive family history of diabetes mellitus (DM). The literature supports that patients with diabetes had knowledge deficit about their disease,<sup>2,3</sup> and demonstrated the relationship of knowledge scores with the glycemic control.<sup>4</sup> We applaud Zowgar et al<sup>1</sup> description of the main knowledge gaps among patients with diabetes; however, we have some basic concerns that need to be considered in reviewing these data.

Firstly, we wondered if there was a validated Arabic translation of Diabetes Knowledge Test questionnaire since it was adapted from a western culture.<sup>5</sup> In spite of an addition of "the way most Saudi people eat" in the diabetic diet section of the questionnaire, we believe this is a vague statement since Makkah, wherein the study was conducted, is a multi-cultural city which contains a diversity of people arising from different communities. This leads to different types of food habits. Furthermore, the food items which are used in the questionnaire are not familiar within the Saudi culture, such as Swiss cheese or peanut butter. So, lacking the knowledge on the contents of the questionnaire and misunderstanding the questions might challenge the results.

In the introduction, there was a mention about Diabetes Self-Management Education (DSME) which is a process to facilitate the knowledge, skills and the abilities for diabetes self-care. In this study, there is a missing data whether the participants have undergone DSME program or at least they were seen by a diabetes educator. Although, the authors have addressed the level of knowledge regarding diabetes in this study, they could go one step further and try to analyze where the defect in the Health Care System? Is it the lack of educators; the lack of knowledge in the care provider, or patients were not willing to learn.

Finally, it would be stronger to have an outcome with the questionnaire. What is the impact of having poor knowledge regarding diabetes in relation to diabetes control or diabetes complications.

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### *Reply from the Author*

We are glad that our recent published research drew the attention of Dr. Abdulghani H. Al Saeed and Dr. Ayman A. Al Hayek. We appreciated their comments and we are pleased to clarify it as point wise response.

Comment 1: "if there was a validated Arabic translation of Diabetes Knowledge Test questionnaire since it was adapted from a western culture"

Response 1: DKT2 and the old version of it have no officially validated Arabic translation but since most changes of DKT2 are minor<sup>5</sup> we adopted and modified the Arabic version provided by Al-Adsani et al<sup>6</sup> and according to their article translation into Arabic was carried out in multiple stages to ensure the quality of the translation.

Comment 2: "the way most Saudi people eat in the diabetic diet section of the questionnaire, we believe this is a vague statement since Makkah where study conducted is a multi- cultural city which contains a diversity of people arising from different communities"

Response 2: This cultural diversity is found in all major cities of the world, due to various kinds of industries, which attract people, not only from rural areas but from some parts of the world to find better job opportunities and then they settle there, resulting in multicultural societies.<sup>7,8</sup> However it is not true for Makkah, as no major industry is found in this Holy City and most of the business of Hajj and Umrah (Islamic Rituals) and most people come to perform this ritual, stay in Makkah for a short period of time and then return to their countries of origin. Moreover, we controlled this factor through inclusion criteria by selecting only those who lived in Makkah for 5 or more years to avoid mixing the population. Finally, we found in revision of the raw data that 93.4% of the patients were Saudi nationals.

Comment 3: "Furthermore, the food items which are used in the questionnaire are not familiar with the Saudi culture, like Swiss cheese or peanut butter"

Response 3: We agree that some components of DKT2 may not be appropriate for Saudi culture and we recommend that in future the questionnaire should be reformed to include only local available items so the assessment of diabetes knowledge will be more realistic.

Comment 4: "In this study, there is a missing data whether the participants have undergone DSME program or at least they were seen by a diabetes educator. Although, the authors have addressed the level of knowledge regarding diabetes in this study, they could go one step further and try to analyze where are the defect in the Health Care System's? Is it the lack of educators, the lack of knowledge in the care provider, or patients were not willing to learn."

Response 4: We focused on research objectives otherwise we would have many more variable but this needs to conduct clinical trial study which was not conducted due to lack of resources but we hope that our research set the fundamental base for future researches to answer the missing information not only in Makkah but in Saudi Arabia.

Comment 5: "Finally, it would be stronger to have an outcome with the questionnaire here. What is the impact of having poor knowledge regarding diabetes in relation to diabetes control or diabetes complications"

Response 5: Impact study are entirely different in its nature and design. The first step in research is conduction of cross sectional study, to generate hypothesis, which could later be tested through analytical study design, including clinical trial but they are not done together. It may be a wish but not possible scientifically. However, we are planning to conduct one such study in future, by planning a clinical trial to find out the impact of

knowledge on diabetes control and frequency of complications.

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