Author's response to reviews

Title: Quality of interaction between primary health-care providers and patients with type 2 diabetes in Oman: An observational study

Authors:

Nadia MN Abdulhadi (nadia.abdulhadi@ki.se)
Mohammed A Al-Shafee (shafee4@omantel.net.om)
Claes-Goran Ostenson (claes.ostensson@karolinska.se)
Asa Vernby (asa.vernby@ki.se)
Rolf A Wahlstrom (rolf.wahlstrom@ki.se)

Version: 2 Date: 14 September 2006

Author's response to reviews: see over
September, 14, 2006

RESPONSE TO COMMENTS FROM REVIEWERS’
MS ID#: 2019791415106325
MS TITLE: Quality of interaction between primary health-care providers and patients with type 2 diabetes in Muscat, Oman: An observational study

Dear Chrissie Kouremenou

Thank you for giving us the opportunity to send a revised manuscript for your consideration.

We have made suggested revisions and commented on every point raised by the reviewers.

Yours sincerely

Rolf Wahlström, Associate professor
IHCAR, Karolinska Institutet,
Stockholm, Sweden
Tel +46 8 5248 3355
Mobile +46 707 105225
Email: rolf.wahlstrom@ki.se
RESPONSE TO THE COMMENTS FROM REVIEWER 1

Point 1.
A major limitation is that all observations were made by a single individual and this individual (being the principal investigator) cannot be considered to be an independent and unbiased observer. Studies using observational ratings typically employ at least two independent observers who are trained in the observational system and who reach an acceptable level of interobserver reliability before providing ratings for the study. The authors state that the consultations were tape recorded. They do not say whether the ratings that are reported were based on live observations or on the tape recordings nor whether they were audio or video recordings. In any case, if tapes are available they can be used to obtain ratings from independent observers. The interobserver reliability coefficient should be reported and whose ratings are used (e.g., the mean of two observers) should be reported.

Response: We agree with the reviewer that using two independent observers is a theoretically more reliable approach. However, in the Omani context and in the small consultation rooms at the primary health centres, we judged it impossible to make the observations in that way. Instead, we tried to optimise the collection of data by one observer per consultation. We would argue that the quality of such data are more reliable if all observations have been collected by one single observer, and that the reliability can be checked by the other member of the research if the consultations, as in our case, are also audio-taped. We have described the procedure and the limitations in more detail in the revised version of the manuscript.

In the Methods section we have added more detailed information:
The consultations were audio- taped for corroboration of some of the verbal communication aspects of the observations. The audio-tapes were used interactively by members of the research team and to confirm or challenge the ratings of the observer.

The limitations have been commented more extensively in the Discussion:
A certain degree of observational bias is possible in this study as all observations were made by a single individual. Theoretically, two independent observers might have produced more reliable data. However, the performance of health-care providers may be affected by the fact that someone is making observations, positively or negatively, regardless of how sensitively observations are made [39]. Therefore, as these kinds of observations have not been done before in the health care services in Oman, we highly judged the importance of being as little intrusive as possible,
favouring using only one observer. Furthermore, the consultation rooms are quite small, making it logistically difficult for more than one observer to be present. However, to make it possible for other members of the research team to get some information about the actual interaction we decided to audio-tape all consultations. We did not consider video-taping as this was even more unfamiliar to the primary health care providers and would have influenced the consultations too much. Furthermore, pre-tests had been done before the start of the actual observations to ensure accurate and consistent performance of the observer.

There are some advantages of using only one observer. It means that all observations are made in a similar way and that the health care providers only need to meet one other person, who will then become less of a stranger and thereby probably influence the actual performance to a lesser extent.

We performed multiple observations with each doctor and nurse and we found that after 2-3 observations, doctors and diabetes nurses’ behaviours seemed not be affected or changed by having an observer in the consultation room. This finding is supported by the study of Parchman et al who also had one observer for all medical encounters in a diabetes clinic [40]. Furthermore, the audio-tapes were used several times during the phase of data analysis and the authors worked together to obtain the ratings and scoring from the transcribed data.

**Point 2.**

The authors need to operationalize the criteria used for making ratings. For example, what behaviors constitute a "warm welcoming?" or a "warm farewell"; what behaviors were indicants of "gestures to continue"? Similarly, what were the specific criteria used for determining whether nurses' provided adequate education on diabetes? These criteria should be spelled out for raters prior to making ratings and establishing reliability. It is also important to do this so that other researchers, if they so desire, can use the rating scales in the same way as the present researchers.

*Response:* We have changed the wording to ‘friendly welcoming’ and ‘friendly closing and farewell’, respectively. The indicants for these aspects and for ‘gestures to continue’ are now shown as footnotes in table 1, see below:

* Friendly welcoming was indicated if any of the following things occurred; a cheerful greeting with a smile, calling by names or shaking hands.
†This was considered positive if the provider was nodding his/her head while the patient was talking or if the doctor had vocal intonation to encourage the patient to continue.

‡Friendly closing and fare well were considered if the provider had some social talks with the patients at closing of the encounters or emphasised on what was discussed during the encounters; reassured the patient; asked the patient if anything else; said goodbye and thanked the patients.

In addition we re-wrote this part in the Methods section as follows:

Most of the aspects of good consultation environment were obtained from other similar studies and adjusted to the Omani context. See footnote in table 1 for details [7, 16-23].

The criteria used for determining whether nurses’ provided adequate education on diabetes were fulfilment of the aspects shown in table 3. These aspects refer to issues listed in the National Guidelines. Each issue was granted 1 if it was provided and 2 if not.

We have re-arranged the writing of data analysis in the Methods section in the revised manuscript, see below. In addition, some minor linguistic changes were made in table 3.

The data were entered into Excel. Each consultation with a doctor or diabetes nurse received a score for each aspect of the two areas of consultation environment and care, including health education. The score assessed the level of fulfilment or absence of the observed aspect. Each observed aspect was granted 1 point if completely fulfilled; 1.5 points if fulfilled sometimes and 2 points if not fulfilled. The total score per consultation was divided by the number of aspects in each consultation and mean values for scores per number of consultations were calculated for each individual doctor and diabetes nurse.

Optimum interaction was considered if the missed aspects were less than 25%, intermediate level of interaction for those who fulfilled 50-75% of the aspects and sub-optimal interaction if the health-care provider fulfilled less than 50% of the aspects.

At the PHCC level, the scores for all providers were summed up and divided by the total number of doctors and nurses in each PHCC. The range for optimum, intermediate and sub-optimal performance was determined using the same cut-off levels as for individual patients.
Point 3.  
It would be of interest to present data on whether doctors’ behavior varied as a function of nationality, age, work experience, and whether they had specialty training in diabetes management.

Response: It was difficult to test for associations between performance and these variables because some of the groups were very small. However using Fisher’s Exact Test in (SPSS version 14), we found some significant association between doctors’ performance and some of these variables.  
We have added information about these data in the data analysis in the Methods and Results sections:

Regarding all aspects, the doctors’ performance were significantly better if they were over 40 (p=0.003), and if they had more formal training in diabetes management (p=0.007). However, there was no significant association between the doctors’ performance and their nationality, their general work experience, or regarding the educational level of the patients. Furthermore, there were no significant differences in performance when male or female doctors interacted with a patient of the same or other sex.  
A brief comment was added in the Discussion:

The findings related to the doctors’ age and special training in diabetes management must be taken with great caution, as the number of doctors was limited.

Point 4.  
The authors need to emphasize more strongly that the study is exploratory. They are using a specially constructed set of rating scales with no established validity and, as it now stands, no reliability data. They should also note that the generalizability of the findings need to be explored. These data were collected from one region of Oman. They should discuss other findings indicating that data consistent with theirs have been obtained in other settings, or if they cannot do so they should note that it is yet to be established whether similar findings would be obtained elsewhere.

Response: We have further emphasised the exploratory nature of the study in the Discussion. However, all previous studies regarding diabetes in Oman were either epidemiological surveys or studies using secondary administrative data, and there is so far no published study using a direct observation method of the medical encounters.
or assessment of health-care providers’ performance. We decided to explore the situation in some of the health centres that were expected to provide a better standard of care due to their geographical location and their structural facilities. These health centres are located in the Muscat region where the population density is high, which is around 632,000 of the total population of 2.3 millions.

We agree that the study cannot be generalized, but it provides some indications of how the situation might look like in other health centres with similar facilities.

We have made some clarifications in the Methods section as follow:

Six PHCCs were chosen to represent different geographical areas within the region with a population of around 632,000 out of the total population of 2.3 millions[15].

Furthermore we have added the following to the Discussion:
This study cannot be generalised to the whole of Oman, but it provides some indications of how the situation might look like in other health centres with similar facilities or in the remote PHCCs. Moreover, our findings also concur with other studies worldwide [6, 7].
RESPONSE TO THE COMMENTS FROM REVIEWER 2

Methodology
Point 1.
The aspects of environment and atmosphere in the checklist are dominated by formal criteria, such as the manner of welcoming and farewell, providing privacy, attentiveness, and the use of gestures and eye contact. Although these aspects are a prerequisite of a sound consultation environment, they do not provide sufficient information on the actual atmosphere. I would prefer to restrict the claim of the description to the environment. This in itself is important enough: if not even privacy can be guaranteed, how are we going to get to mutual partnership?

Response: Several verbal and non-verbal behaviours had been found to be positively associated with health outcomes and patients’ satisfaction (Roter et al, Rethans et al, Deardean et al, Summer, Traveline et al). We had some of these formal aspects in our study which are suitable to the Omani context and our response to this comment is partly covered by what we have answered the 1st reviewer (point 2). However, we propose to keep these aspects of atmosphere because they are interesting and important to the Omani cultural situation. In addition, these aspects were further raised by the patients during the focus group discussions.

Point 2.
In terms of aspects of care, the checklist is fully focused on the care provider with only a single point touching on patient participation (Encouraged patients to ask questions), and lacks other aspects, such as patient’s expectations, apprehensions or the mutual agreement on strategies and follow-up. Care providers are expected to ask about medicine compliance, emphasise blood sugar control along with the importance of exercise, metabolic control, diet-control, etc. Implicit to the checklist is, thus, the compliance model of care where carers are expected to instruct patients, who in turn are expected to execute providers orders. This, however is not stated anywhere and leaves the reader wondering is this is a conscious choice of approach.

Response: Patients’ expectations and participation in this study was not included because we wanted to know the situation from the perspective of the health-care providers. We had interviews and FGDs with the patients to explore their thoughts and opinions on the interaction in general and not in one or two consultations. This will be presented in a separate study. We previously stated the aim of this study in page 5 in the background. We also stated in the conclusion that we will later present findings from our other collected material
regarding views of patients and providers in the interaction and relation to metabolic control parameters.

We have added comments related to these issues in the Discussion as follows:

We consider that focusing on the health care providers’ behaviours as an important factor in the process of communication and care at the preliminary stage of this ongoing study will provide us with more information about an unknown situation in Oman. However, it has been argued that physicians appeared to make minimal efforts to foster patient involvement and autonomy that induce self-efficacy [2]. Furthermore, doctors’ communication skills, hostility during interactions and training of health-care providers regarding interactions with patients and patient-centred care have been identified as crucial for effective health outcomes [2, 20, 43].

Interpretation of results

point 1.
The paper points out the nurses as providing mainly suboptimal care according to the checklists applied. I lack a discussion of whether nurses truly provide such low quality care or if it is in fact the checklist that is not adapted to the circumstances, possibilities, and objectives of the nurses. It seems that nurses see the patients for a consultation of no more than ten minutes before these see their physicians. What is the purpose of the nurse’s consultation? To measure routine physical and lab parameters prior to the visit to the doctor? Well, then care content is optimal, whereas environment should be improved. If the goal is to provide comprehensive and holistic diabetes care circumstances are obviously inappropriate.

Response: The role of diabetes nurses was well explained in the National Guidelines and the nurses had training on how to manage the patients with diabetes including provision of health education with emphasis on the aspects that were included in the checklists. In this study we just reflected what exactly happened regarding the performance of the nurses according to the checklists. It seems that the nurses are not aware of guidelines or lacking motivations or there could be other factors making them behaving the same way in different health centres.

We have made some few additional explanations in the Methods section (page 6), and in the Discussion as follows:
The overall performance of the diabetes nurses in this study was sub-optimal. They had limited interactions with diabetes patients regarding the aspects of consultation environment, care and health education despite the description of their role and
responsibilities in the national guidelines. In 7-9 out of ten consultations, the diabetes nurses did not provide education about good components of optimal diabetes care as recommended in the national guidelines [14].

Point 2.
I also have some concerns about the implicit value system of the study, mirrored by the checklist. The compliance model of care has shown to lack results despite improved knowledge and even increased self-testing of persons with diabetes; patients’ motivation, autonomy, empowerment, and self-efficacy have been increasingly emphasised instead. This, however, might be a model of care that is not applicable with a population where 51% of patients are illiterate and alternating physicians see 25 patients a day. In any case, I lack a discussion of these aspects.

Response: We agree that the compliance model of care can be challenged. However, our study is in the context of the situation in Oman, where the guidelines have been developed with the explicit aim to improve the health care services and the outcomes. We have designed our study to explore the situation from different aspects; one being the providers’ compliance with the guidelines, other aspects being the views of the patients.

We know that a lot of barriers could affect the patient-doctor communication during consultations such as patients’ literacy level (Kleinbeck C 2005, Williams et al 2002), and number of patients seen by each doctor (Campbell et al 2001). Both of these factors were present in this study. We consider that focusing on the health care providers’ performance as one important factor in the process of communication and care at the preliminary stage of this on-going study will provide us with useful information.

We have made clarifications in the revised manuscript in the Discussion:

Other limitations could be that we developed a check-list that was designed to suit mainly the local settings from certain aspects and it might therefore lack validity. In addition, we aimed at assessing diabetes management from the perspectives of the health-care providers. However, Boon et al recommended validating the existing checklist designed by other researchers aimed at assessing the patient-doctor interaction [41]. Pendleton et al 1989 listed seven tasks in their consultation map that support a more patient-centred approach and ensure a positive consultation environment for both doctors and patients [42]. However, our approach was
determined by the lack of similar studies in Oman and the need to get some basic information about the quality of provider services for better planning, potential need of interventions and maybe revision of the guidelines. Moreover, focusing on the perspective of the patient, e.g., using Pendleton’s mapping technique [42] could be the next step for more detailed studies of the consultation in the Omani context. We consider that focusing on the health care providers’ behaviours as an important factor in the process of communication and care at the preliminary stage of this ongoing study will provide us with more information about an unknown situation in Oman. However, it has been argued that physicians appeared to make minimal efforts to foster patient involvement and autonomy that induce self-efficacy [2]. Furthermore, doctors’ communication skills, hostility during interactions and training of health-care providers regarding interactions with patients and patient-centered care have been identified as crucial for effective health outcomes [2, 20, 43]. We know that a lot of barriers could affect the patient-doctor communication during consultations such as patients’ literacy level [44, 45], and number of patients seen by each doctor [36]. Both of these factors were present in this study and need further exploration. However, patients’ barriers or non-adherence can be changed by improving education, perception, motivation and self-management [46].

**Minor Essential Revisions**
The authors have examined the consultation environment and atmosphere as well as some components of the consultation using a newly designed checklist. I lack a bit more introduction to the field of consultation environment, including e.g. the model of Pendelton and the review by Boon et al from 1998. I lack the motivation of designing a new checklist restricted to the local diabetes guidelines.

*Response: We have already responded to the question about the checklist in the answer to Reviewer 1, point 2. We have also commented on the consultation environment as can be seen in the response to the previous point.*

**Where did the non-Arabic doctors come from? Did their consultation style differ in any major way from their colleagues?**

*Response: The origin of the non-Arabic doctors has been added in the Methods section.*

**Discretionary Revisions (which the author can choose to ignore)**
I don’t see why authors find it disturbing that nurses did not calculate BMI. This score is readily calculated at any time later on if follow-up, educational, or research reasons demand so;

Response: We agree with this point. However, it is known that there is a high rate of overweight and obesity among the Omani population. Almost all diabetes nurses performed some technical work by taking the basic measurements while most of the doctors calculated the BMI or asked the diabetes nurses if they did it as to discuss about weight and diet with the patients. It could be better if diabetes nurses became more helpful and calculated the BMI especially that it is difficult to notice overweight or obesity with the traditional dress.

We made a few changes regarding this point in the discussion section.