PEER REVIEW HISTORY

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ARTICLE DETAILS

| TITLE (PROVISIONAL) | Why do people with type 2 diabetes who are using insulin have poor glycemic control? A qualitative study. |
|--------------------|------------------------------------------------------------------------------------------------------|
| AUTHORS            | Tong, Wen Ting; Vethakkan, Shireene Ratna; Ng, Chirk Jenn                                           |

VERSION 1 - REVIEW

| REVIEWER          | Priyatham Vellangi, MD                                              |
|-------------------|---------------------------------------------------------------------|
|                    | Emory University, United States                                    |
| REVIEW RETURNED   | 07-Sep-2014                                                        |

GENERAL COMMENTS

This study by Tong et al., is a qualitative study of the factors leading to poor glycemic control in patients with diabetes despite being on insulin therapy. The authors interviewed 17 people from the clinics at their institution to identify factors leading to poor glycemic control. An important aspect of this study was that the study population reflected the ethnic diversity of Malaysia, where the study was conducted. The study also included patients from diverse socioeconomic backgrounds. These two factors appear to be a challenge for healthcare providers.

I believe the paper would be improved if the authors can address the issue of ethnicity and socioeconomic factors in the discussion and/or results, especially in the section about dietary recommendations. Were there differences in perception of diabetes between patients of Malay, Indian or Chinese descent? Did the patient's occupation have a role in their dietary control and diabetes-related treatment factors? The patients are of different ages and the duration of insulin use differed vastly. Did the amount of time on insulin affect perception of success with insulin use? Did duration of insulin use affect awareness of side effects of insulin? While this may not be in the scope of the present study, it would be helpful to include a group that was successful on insulin therapy? It may help identify motivators for better glycemic control in this patient population.

| REVIEWER          | AProf Goh Lee Gan                                                 |
|-------------------|-------------------------------------------------------------------|
|                    | National University Health System                                 |
|                    | Singapore                                                         |
| GENERAL COMMENTS | The strength of this paper is that the research covers a gap in the understanding of the patients' perspective on poor glycaemic control despite being on insulin. Indeed a literature review I did showed that there are no qualitative papers (nor quantitative paper for that matter) “that examined factors impacting poor glycaemic control from the patient’s perspective, among people with type 2 diabetes using insulin with poor glycaemic control.” [line 41 to 46] There are however several deficiencies that need to be addressed before this paper can be published – both major and minor. |
| --- | --- |
| MAJOR DEFICIENCIES | Four sections had major deficiencies, each of which needs improvement – namely abstract methodology, results, and discussion. Abstract section See page 2 lines 25 to 36 – as one example where exposition can be improved to help the reader understand what is being conveyed. There is a flip-flop of theme, subtheme, admixture of theme and subtheme in one sentence which make it very confusing to understand what the writer is trying to convey. So, the sentence, “Data analysis revealed participants faced difficulties in integrating diabetes self-care tasks into their daily work-life schedule... poor glycaemic control.” Is one idea [These are subtheme information]. The next sentence says “Psychosocial and emotional problems caused participants to neglect their diabetes self-care. [This is a theme information admixture with subtheme details]. The next sentence states “Side effects of insulin... to overeat and omit insulin. [This is a subtheme description]. It would be better and easier to comprehend -- since this is the abstract -- to stick to the 4 themes and cut out the subtheme details. It would also save some words. Methodology section Page 5 lines 41 to 45 states “We used a semi-structured interview guide (Table 1), which was developed based on the study's conceptual framework (Figure 1) drawn from literature review and experts’ opinion” – which part of the framework is from literature review and which part is from expert's opinion is not explicit to the reader. This needs to be made clear to the reader. Results section Just like the abstract, there is a rather heterogeneous way of describing theme and subtheme information. See page 7 lines 20 to page 10 line 14. It would help the reader comprehend the results in one reading if there is a uniform way to each of the 4 themes and subtheme information is given, e.g. introduce the theme and subthemes under the heading of the theme; and under each subtheme in italics describe the details and give the quotations. There will be less repetition too. For example, under the heading of the theme “Lifestyle challenges... medical recommendations” (page 7 line 21), it would be enough to write “Under this theme there are 5 subthemes identified” and cut |
out the rest of the paragraph. Under each subtheme with the italicised heading, I will describe all the details and give appropriate quotes (which should be in italics), instead of having some details parked under the theme, and the remainder parked under the subtheme.

Discussion section
It would be good to have a box to highlight what is new and what is known about this study's findings. What is new is this study is that the study presents information from the patients' insight through in-depth interviews to explain why their diabetes remains poorly controlled despite being on insulin. This has not been reported before. This should be emphasised. Most of the work in this area addresses the barriers to starting insulin. The paper on factors influencing insulin acceptance among type 2 patients have points that could be discussed (PMID 24164794)

The salient features of the 4 themes and subthemes have been discussed in turn and existing literature have been examined to support the findings. This is good. There are nevertheless findings that could be triangulated with current literature. A key one is the finding that in the first theme subtheme 2 of "inappropriate diet recommendations by HCPs". This is worth noting and commenting. There is a paper that talks about family physicians' educational needs and reiterates what the patients in this study experienced (PMID 21569337). The educational needs noted will also be pertinent to address

The remaining subsections of strengths and limitations of the study and the subsection of clinical and future research recommendations are well covered.

MINOR DFICIENCIES
Abstract – page 2 lines 11 to 13 -- The second sentence “A semi-structured interview guide was used for the interviews, which were audiotaped, transcribed verbatim and analysed using a thematic approach” gives the sense the guide is being audiotaped etc. Suggest putting a stop after “used” and take out “for” and “which” – so that the second sentence now reads "A semi-structured interview guide was used. The interviews were audiotaped, transcribed verbatim and analysed using a thematic approach" -- no ambiguity now.

Page 2 line 33, page 25 line 26 –"lack of awareness of glycaemic levels" and "lack of awareness and self-efficacy in diabetes self-care" – substituting “awareness” with “knowledge” is suggested.

REVIEWER
Jim Ross
Department of General Practice and Rural Health
Dunedin School of Medicine
University of Otago
New Zealand

REVIEW RETURNED
15-Sep-2014

GENERAL COMMENTS
4. Method well described. Items of conceptual model mostly map to interview schedule. It would be useful to know if any of the
Interviews were conducted in languages other than English, and if so how this was dealt with ("transcribed verbatim").

8. Some of the references in the Discussion could appropriately be added to the literature review of paragraph 2 of the Introduction (e.g. ref 14 and other similar ones).

11. Discussion is satisfactory in general, but I have a few specific points. There are some places where the distinction between findings from this study and from other studies could be made clearer, e.g. page 17 in the sentences relating to refs 24, 25 and 26. In the last of these perhaps consider altering to “have been cited” and “may also be a reason”. In the third paragraph (P. 15 line 28) “Our participants” actually refers to one person (page 12). The final paragraph refers to some findings not included in the Results, such as short consultation times and lack of continuity - is there a case for including this in another theme or category relating to system factors (perhaps including the cost of SMBG and lack of targets and advice on adjusting insulin)?

12. The strengths and limitations bullet points (page 3) are good, although the first point needs correction of the phrase “This is the first few studies provided”. The last sentence of the paragraph on page 18 needs to be transferred to the next paragraph (page 19).
| No | Reviewer’s comment | Revision by author |
|----|-------------------|-------------------|
| 1  | I believe the paper would be improved if the authors can address the issue of ethnicity and socioeconomic factors in the discussion and/or results, especially in the section about dietary recommendations. Were there differences in perception of diabetes between patients of Malay, Indian or Chinese descent? | **Reply to reviewer:** Through the interviews that were conducted, we did not observe any difference in the perception of diabetes and its treatment (including diet) among patients of Malay, Indian or Chinese descent. The participants did not report dietary differences pertaining to their respective ethnic or culture. Eating has been described by our study participants, regardless of their ethnicity, as a way of living for Malaysians in general. Therefore, participants of this study may have adapted to the ‘Malaysian’ culture whereby they share and practise culture of others. The issue of ethnicity and socioeconomic did not emerge as factors for poor glycaemic control in this study and we have now included this in the Discussion section.  

**in page 20, line 581-595**

Ethnicity was also not raised as a factor for poor glycaemic control in this study. Instead, the participants described eating culture as a way of living for Malaysians in general. Therefore, participants of this study might have adapted to the ‘Malaysian’ culture whereby they share and practise culture of others. Even if the recommended diet by HCPs may not be the types of food familiar with the specific ethnic group or culture, nevertheless, they could still follow the recommended diet. No specific ethnicity barrier was also reported for diabetes treatment aspects. Socio-economic was not a factor for participants in this study to seek healthcare treatment as the company where they or their spouses are working subsidized the medical costs. It should also be noted that the Malaysian government provides relatively cheap health care for the people and the cost for insulin is subsidized. However, this is not the case for SMBG where patients have to pay out-of-pocket for glucometer and test strips. This is the reason why the lack of knowledge of glycaemic status due to low performance of SMBG was raised as a reason for poor glycaemic control. |
| 2  | Did the patient’s occupation have a role in their dietary control and diabetes-related treatment factors? | **Reply to reviewer:** Yes, occupation did play a role in affecting adherence to dietary and treatment of one study participant. This is now included in the Results section. |
| Page | Line | Text |
|------|------|------|
| 9 | 258-267 | One participant described how the nature of his occupation made it difficult for him to adhere to healthy diet and insulin treatment.  
   "We are going around okay. So we can't just go and get what we want to eat. We can't go and pack something or bring the food from house. Furthermore, like now I'm taking the short-acting insulin, so every mealtime you have to inject. You just can't go and take insulin, you see. I'm working as a bodyguard you see, you have to follow the boss closely. I think so that is the reason for poor blood sugar". – Thomas 36 years old personal bodyguard |
| 3 | 73 | The patients are of different ages and the duration of insulin use differed vastly. Did the amount of time on insulin affect perception of success with insulin use? Did duration of insulin use affect awareness of side effects of insulin? |
| 4 | 452 | Reply to reviewer: Given that this is a qualitative study involving only 17 participants, the sample size is too small to determine any association between age, duration of insulin use, perception of success with insulin use and awareness of side effects of insulin. This would require confirmation from a quantitative study with a bigger sample size. |
| 4 | 660-664 | While this may not be in the scope of the present study, it would be helpful to include a group that was successful on insulin therapy? It may help identify motivators for better glycemic control in this patient population. |
| 4 | 660-664 | Reply to reviewer: We agree with the reviewer’s comments. This suggestion is now incorporated in the Discussion section under ‘Future Research Recommendations’ |
| 23 | 660-664 | In addition, future study should look into the motivators of better glycaemic control among people with type 2 diabetes using insulin who is successful in gaining glycaemic control. Understanding both the barriers and the motivators would help to improve glycaemic control among this subpopulation. |
| No | Reviewer’s comment | Revision by author |
|----|--------------------|--------------------|
| 5  | Abstract section   | **Reply to reviewer:** We agree with the reviewers and have revised the text accordingly as following: |
|    | See page 2 lines 25 to 36 – as one example where exposition can be improved to help the reader understand what is being conveyed. There is a flip-flop of theme, subtheme, admixture of theme and subtheme in one sentence which make it very confusing to understand what the writer is trying to convey. So, the sentence, “Data analysis revealed participants faced difficulties in integrating diabetes self-care tasks into their daily work-life schedule... poor glycaemic control.” Is one idea [These are subtheme information]. The next sentence says “Psychosocial and emotional problems caused participants to neglect their diabetes self-care. [This is a theme information admixture with subtheme details].” |
|    |                    | **in page 2, line 43-45** |
|    |                    | Data analysis uncovered four themes. They were lifestyle challenges in adhering to medical recommendations, psychosocial and emotional hurdles, diabetes treatment related factors and, lack of knowledge and self-efficacy in diabetes self-care. |
The next sentence states “Side effects of insulin… to overeat and omit insulin. [This is a subtheme description]. It would be better and easier to comprehend -- since this is the abstract -- to stick to the 4 themes and cut out the subtheme details. It would also save some words.

Reply to reviewer: The researcher (WTT) developed the conceptual framework by mapping the relationship between various factors and poor glycaemic control based on the literature review. Subsequently, the conceptual framework was given to other two researchers (NCJ and SV) who are both clinicians (one is a family medicine specialist and another is an endocrinologist) who are well acquainted with the topic of T2DM to provide feedback to strengthen the conceptual framework. Then, using the conceptual framework as a guide, the interview guide was constructed. The description on the construction of conceptual framework and interview guide has been added to the Methodology section as follows:

in page 6, line 166-173

We reviewed the literature to identify possible factors, concepts and variables [16] that have been shown to influence glycaemic control among people with diabetes. A preliminary conceptual framework was developed based on these factors. Later, the conceptual framework was given to two researchers (NCJ and SV) (one is a family medicine specialist and another is an endocrinologist) to provide feedback and strengthen the conceptual framework based on their clinical experience and expertise. Subsequently, the interview guide was constructed based on the revised conceptual framework.

Reply to reviewer: We have made the necessary changes as suggested by the reviewer. All the quotes are now italicised. The changes are as following

in page 8 line 233
Under this theme there are five subthemes identified.

in page 11 line 306

Three subthemes emerged under this theme.

in page 13 line 355

There are two subthemes under this theme.

in page 14 line 397

Two subthemes were identified under this theme.

For example, under the heading of the theme “Lifestyle challenges… medical recommendations” (page 7 line 21), it would be enough to write “Under this theme there are 5 subthemes identified” and cut out the rest of the paragraph. Under each subtheme with the italicised heading, I will describe all the details and give appropriate quotes (which should be in italics), instead...
of having some details parked under the theme, and the remainder parked under the subtheme.

| 8  | Discussion section |
|----|---------------------|
|    | It would be good to have a box to highlight what is new and what is known about this study’s findings. What is new is this study is that the study presents information from the patients’ insight through in-depth interviews to explain why their diabetes remains poorly controlled despite being on insulin. This has not been reported before. This should be emphasised. |

**Reply to reviewer:** The important contributions of this study are now incorporated into two sections of this paper. First, is under ‘Article summary’ section which consists of five bullet points about the ‘Strengths and limitations of this study’ as required by the BMJ open. Second, is in the text in the Discussion section under the heading ‘The strengths and limitations of study’.

**Incorporated in page 3, line 82-92**

- The major strength of this study lies in the fact that the reasons behind poor glycaemic control were uncovered from the perspectives of people with type 2 diabetes with sustained hyperglycaemia for more than one year despite insulin use, through in-depth interviews.
- This study found that issues such as adherence to regular meal and medication times, fear of hypoglycaemia, needles and pain and lack of knowledge and self-efficacy in diabetes care remain as barriers for poor glycaemic control among people with type 2 diabetes using insulin.
- Issues such as social stigma, ethnicity, socio-economic factors, family, friends, healthcare system factors and HCPs did not emerge as reasons for poor glycaemic control despite insulin use.
- The recruitment of participants was conducted in a single hospital, hence healthcare systems as a factor in poor glycaemic control cannot be further explored.
- The interviews conducted in the hospital environment may influence the participants to give a socially desirable response. However, they were informed that their responses will not affect their medical care and will be kept confidential.

**Incorporated in page 21, line 606-616**

The major strength of this study lies in the fact that the reasons behind poor glycaemic control were gained from the insights of people with T2DM with sustained hyperglycaemia for more than one year despite insulin use, through in-depth interviews to explain why their diabetes remains poorly controlled despite being on insulin. To researchers’ knowledge, such findings has never been reported before. This study found that issues such as adherence to regular meal and medication times, fear of hypoglycaemia, needles and pain and lack of knowledge and self-efficacy in diabetes care remain as barriers for poor glycaemic control among people with type 2 diabetes using insulin, whereas, issues such as social stigma, ethnicity, socio-economic factors, family, friends, healthcare system factors and HCPs were found not to be reasons for poor glycaemic control despite insulin use.
| No. | Page | Description |
|-----|------|-------------|
| 9   | 135-135 | Reply to reviewer: Indeed many studies have been conducted on insulin initiation whereas; research on identifying the reasons for poor glycemic control despite insulin use has been very few. This piece of information is now added into the Introduction section to highlight the gap in research on diabetes. We have added the following phrase to highlight this gap.  

**To date, many studies have been conducted on barriers to insulin initiation [6-8], whereas, research on identifying factors for poor glycemic control among people with type 2 diabetes was largely by quantitative studies involving patients on various treatment modalities; including lifestyle adapters, OHAs (oral hypoglycemic agents), OHAs + insulin and insulin only [9-11], while qualitative studies focused on barriers to diabetes self-care management in general [12-15].**  

**Revision page 18, line 518-521**  
**Issues such as fear of hypoglycaemia and needles and pain have been well established as barriers to insulin initiation [7,8] and it is interesting to know that such problems still prevails even after participant initiate insulin use, as found in participants of our study.** |
| 10  | 518-521 | **Reply to reviewer:** It would be interesting to compare our study population to those who once faced barriers to initiate insulin but later accepted it. Issues such as fear of hypoglycaemia, and, needles and pain have been well established as barriers to insulin initiation and it is interesting to know that such problems still prevails even after participant initiate insulin use, as found in participants of our study. The paper on factors influencing insulin acceptance among type 2 patients have been discussed in relation to the findings of this study.  

**Revision page 18, line 518-521**  
**Issues such as fear of hypoglycaemia and needles and pain have been well established as barriers to insulin initiation [7,8] and it is interesting to know that such problems still prevails even after participant initiate insulin use, as found in participants of our study.** |
| 11  | 468-484 | **Reply to reviewer:** The findings ‘inappropriate diet recommendations by HCPs and self-adjustment of insulin dosage’ have been triangulated with the findings from Murray et al., (2011) which highlighted the physicians’ educational needs. The revision has been incorporated throughout the Discussion section.  

Inappropriate diet recommendations by HCPs has been discussed in relation to the Murray et al., paper in page 17, line 468-484  

Our participants raised the issue of dietary recommendations by HCPs, which did not meet their dietary needs; the issues of the monotony of |
nevertheless findings that could be triangulated with current literature. A key one is the finding that in the first theme subtheme 2 of "inappropriate diet recommendations by HCPs". This is worth noting and commenting. There is a paper that talks about family physicians’ educational needs and reiterates what the patients’ in this study experienced (PMID 21569337).

eating the same type of food every day and the recommended diet could not provide sufficient energy. Other people with type 2 diabetes using insulin have reported that clinicians would simply assume that patients would comply to the medical recommendations given; without considering their individual needs and preferences [5]. Additionally, it also appears that lack of understanding of the rationale behind dietary recommendations is common among type 2 diabetes patients. One participant of our study thought the meal pattern recommended by HCPs would thwart the efficacy of insulin, while type 2 diabetes patients on OHAs in another study perceived that frequent meals was a way to control their diabetes [19]. In fact, the main purpose of regular meals is actually to counter the effects of hypoglycemia, due to insulin and long acting sulfonylureas. HCPs may be a contributing factor to these barriers in adhering to dietary recommendations. In a collaborative study conducted in Austria, Canada, Germany and United Kingdom, it was found that general practitioners lack the knowledge and skills to educate, support and motivate patients on healthy lifestyle changes [20].

Self-adjustment of insulin dosage has been discussed in relation to the Murray et al., paper in page 19 line 562–567

Dependent and deferential attitudes towards health professionals were cited as the reasons why type 1 diabetes patients do not adjust their insulin dosage [31] and this may also be the reason for failure to adjust insulin dosing among our participants. Furthermore, the lack of skills to educate patients on how to monitor their glycaemic levels and adjustment of insulin has also been found to be a common challenge faced by general practitioners [20].

| 12 | The educational needs noted will also be pertinent to address | Reply to reviewers: We agree that educational need is an important factor that should be highlighted and addressed. This has been included in the text in the Clinical Recommendations section. in page 22 line 637-648 |
| 13 | MINOR DEFICIENCIES | Reply to reviewer: The text has been revised according to the reviewer’s suggestion. |

Murray et al., (2011) has identified the common challenges faced by family physicians when caring for people with type 2 and they were related to knowledge, skills, attitudes, behaviours and context [20]. Some of the challenges faced by HCPs may explain the reasons for poor glycaemic control as faced by participants of this study such as the lack of knowledge and skills to: give clear explanations to the patients, actively engage their patients in their health management, educate patients on how to monitor their glycaemic levels, engage in shared decision making with patients, and provide support and motivation to patients in their efforts towards lifestyle changes for better glycaemic control. Therefore, it is pertinent that HCPs are equipped with accurate and latest knowledge and skills about diabetes and its treatment and be able to impart them to their patients to empower them to perform effective diabetes self-care tasks.
| Page 2 line 31 | A semi-structured interview guide was used. The interviews were audiorecorded, transcribed verbatim and analyzed using a thematic approach. |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| 14 Page 2 line 33, page 25 line 26 – lack of awareness of glycaemic levels and “lack of awareness and self-efficacy in diabetes self-care” – substituting “awareness” with “knowledge” is suggested. | Reply to reviewer: ‘Lack of awareness’ in the text has been replaced with ‘lack of knowledge’ throughout the paper. |
| Page 2 line 45 | … treatment related factors and, lack of knowledge and self-efficacy in diabetes self-care. |
| Page 14 line 396 | Lack of knowledge and self-efficacy in diabetes self-care |
| Page 14 line 399 | Lack of knowledge of glycemic level and target |
Page 14 line 400 and line 402

Lack of knowledge of their glycemic level and target was also cited as a reason for poor glycemic control, as participants were not aware to what extent they should control their blood sugar. This lack of knowledge was attributed to difficulties in performing SMBG due to financial reason, and some claimed that their HCPs did not inform them about their glycemic levels and target.

Page 16 line 446

….problems, treatment-related factors and lack of knowledge of glycemic levels and…..

Page 19 line 545, line 554

Lack of knowledge of glycemic level and targets was also a reason for poor glycemic control in our participants. They were unsure to what extent they should control their glucose levels. The issue of lack of knowledge of glycemic levels and targets in our…

Page 24 line 668

Our findings revealed lifestyle challenges, psychosocial and emotional problems, treatment-related factors and lack of knowledge of glycemic levels and targets, and poor self-efficacy with regards to insulin dosage adjustment as factors for poor glycemic control despite insulin use.

Page 29 Table 3, Theme 4, Category 1

| No. | Reviewer's comment | Revision by author |
|-----|--------------------|--------------------|
| 15  | It would be useful to know if any of the interviews were conducted in languages other than English, and if so how this was dealt with ("transcribed verbatim"). | **Reply to reviewer:** Two interviews were conducted in Cantonese and seven in Malay language. A paragraph on the process of transcribing verbatim and translating to ensure quality data were obtained are now described |
It is important to note that the participants of this study were recruited from the clinics where SV and NCJ conduct their clinical practice. Thus, in order to offset the influence of power disparities between doctor and patient, all the interviews were conducted by WTT. WTT was competent in English, Malay and Cantonese, hence the interviews were conducted in three languages. Out of the 17 interviews, there were two interviews that were conducted in Cantonese and seven in Malay. Given that the Cantonese language has many colloquialisms, the recordings were translated directly into English by WTT so that the meaning would not be lost. Other interviews that were conducted in English and Malay were given to experienced transcribers for verbatim transcription. All the transcripts were checked for accuracy and quality by WTT by listening to the audio recording and checked against the transcript, before exported into NVivo qualitative software for data analysis using a thematic approach. Malay transcripts were analysed in the said language and the selected quotes were later translated to English. The translated quotes were checked with other researchers to ensure the meaning were not lost or distorted.

Some of the references in the Discussion could appropriately be added to the literature review of paragraph 2 of the Introduction (e.g. ref 14 and other similar ones).

Reply to reviewer: In this paragraph, we would like to highlight the factors for poor glycaemic control among people with diabetes particularly among those who has Type 2 diabetes and have been using insulin and their reasons for the poor glycaemic control. So far, the researchers could only find one quantitative study, which focussed on such study participants and has similar study objective as this study, that is a study by Nichols et al., (2000) and it is referenced in the text. Reference 14 (Janes et al., 2013) is also included now in the Introduction as suggested. Other studies in the discussion did not use the defined study participants nor the aim of the studies were to find out the reasons for poor glycaemic control but, were more on barriers to adherence to diabetes self-care in general. Thus, they were not included in the
The challenges of achieving glycemic control in people with diabetes using insulin were: the progression of the disease, the impact of hypoglycemia and weight gain, the burden of poly-pharmacy, lack of resources in provision of diabetes self-care education and support of patients; and the inherent limitations of subcutaneous exogenous insulin administration [3]. Other predictors of poor glycemic control among people with type 2 diabetes using insulin include younger age, shorter duration of diagnosis of diabetes, lower body mass index, poor physical functioning [4]. Barriers to glycaemic control highlighted in a qualitative study among people with T2DM using insulin were fear about illness, guilt or self-blame, shame, ideas or beliefs about causation of diabetes, personal or cultural beliefs difficulty finding common grounds with clinicians on diabetes management [5].
| Page | Discussion | Reply to reviewer |
|------|------------|------------------|
| 17   | Discussion is satisfactory in general, but I have a few specific points. There are some places where the distinction between findings from this study and from other studies could be made clearer, e.g. page 17 in the sentences relating to refs 24, 25 and 26. In the last of these perhaps consider altering to "have been cited" and "may also be a reason". | **Reply to reviewer**: The text has been revised to improve the distinction between findings from this study and from other studies. **Revision page 19, line 566-568 and line 558-560** The impact of economic factors on SMBG adherence have been reported as an issue that limits glycemic control in other studies [27,28]. In a study by Onwudine et al., (2011), the study participants reported that they were not informed by their doctor of their target blood glucose levels and perceived that as a barrier to diabetes self-management [29]. HCPs have a crucial role to play in discussing glycemia results with their patients and formulating mutually agreed glycemic targets. A study has shown that knowledge of HbA1c and target goal had a positive impact on maintaining better glycemic control among people with type 2 diabetes [30]. Self-adjustment of insulin dosage have been shown to be a technically complex regimen for people with type 1 diabetes [27] and people with diabetes spend most of their time managing their diabetes away from healthcare professionals. |
| 18   | The final paragraph refers to some findings not included in the Results, such as short consultation times and lack of continuity - is there a case for including this in another theme or category relating to system factors (perhaps including the cost of SMBG and lack of targets and | **Reply to reviewer**: Factors such as short consultation times and lack of continuity (healthcare system factors) are factors for poor glycaemic control highlighted in the study conceptual framework but did not emerge as findings of our study. Therefore, it is not included in the Results section. Nevertheless, we felt factors that are not reasons for poor glycaemic |
| Page | Paragraph | Correction |
|------|-----------|------------|
| 20   | Some factors for poor glycemic control as highlighted in the conceptual framework did not emerge in our study findings even when the participants were probed. | **Reply to reviewer:** Some factors for poor glycemic control as highlighted in the conceptual framework did not emerge in our study findings even when the participants were probed. |
| 3    | The strengths and limitations bullet points (page 3) are good, although the first point needs correction of the phrase “This is the first few studies provided”. | **Reply to reviewer:** Correction has been made as following: |
|      | **in page 3, line bullet no 1**  
- The major strength of this study lies in the fact that the reasons behind poor glycaemic control were uncovered from the perspectives of people with type 2 diabetes with sustained hyperglycaemia for more than one year despite insulin use, through in-depth interviews. | |
| 19   | The last sentence of the paragraph on page 18 needs to be transferred to the next paragraph (page 19). | **Reply to reviewer:** Correction has been made as following.  
**in page 21 line 622-623**  
….. them to give a socially desirable response. However, they were informed that their responses would not affect their medical care and would be kept confidential. |
| REVIEWER | Dr Jim Ross  
|          | Senior Lecturer in General Practice and Rural Health,  
|          | University of Otago,  
|          | New Zealand  |
| REVIEW RETURNED | 09-Oct-2014 |

| GENERAL COMMENTS | Revisions have made the paper and its findings clearer.  
|                  | There are one or two remaining typos or minor issues of syntax: e.g.  
|                  | line 113 of marked copy needs a comma +/- ‘and’; the long sentence  
|                  | starting line 116 might be reworded; ‘whereas’ in 117 and elsewhere  
|                  | does not require a comma following it. |

| REVIEWER | Priyathama Vellanki  
|          | Emory University, United States.  |
| REVIEW RETURNED | 10-Oct-2014 |

| GENERAL COMMENTS | I believe the authors addressed my concerns. I have no further  
|                  | revisions for them. |