Self-knowledge of HbA1c in people with Type 2 Diabetes Mellitus and its association with glycaemic control

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Email: hina.trivedi@hotmail.com
Structured Abstract

Objective

The aim of this study was to evaluate the prevalence of accurate self-knowledge of a patient’s own HbA1c level (HbA1c\textsubscript{SK}), as a component of structural education (1) and its association with glycaemic control.

Methods

Data from the GUIDANCE study, a cross-sectional study involving 7597 participants from eight European countries was used. HbA1c\textsubscript{SK} was evaluated and compared with laboratory measured HbA1c levels (HbA1c\textsubscript{LAB}), which represented the measure of glycaemic control. Accuracy of the self-reported HbA1c was evaluated by using agreement statistical methods.

Results

The prevalence of HbA1c\textsubscript{SK} was 49.4%. Within this group, 78.3% of the participants had accurately reported HbA1c\textsubscript{SK}. There was good level of agreement between HbA1c\textsubscript{SK} and HbA1c\textsubscript{LAB} (intra-class correlation statistic = 0.84, p < 0.0001). Participants with accurately reported HbA1c\textsubscript{SK} were found to have a statistically significantly lower HbA1c\textsubscript{LAB} compared to participants with inaccurately reported HbA1c\textsubscript{SK} (7.0% versus 7.3%, p < 0.001).

Conclusion

Nearly half of the patients had self-knowledge of their own HbA1c level. Moreover, the participants with accurately reported HbA1c\textsubscript{SK} were found to have associated better glycaemic control.
Introduction

The globally increasing prevalence of Type 2 Diabetes Mellitus is a cumulative problem (2). Most guidelines (3) and international organisations (4) have proposed HbA1c values rather than blood glucose levels as targets (except in the pregnancy) (5) for assessing glycaemic control. Moreover, major outcome trials have used HbA1c levels for monitoring and as endpoints (6), (7), (8). HbA1c is a more pragmatic and opportunistic test compared to blood glucose since it can be measured at any time and particularly in the non-fasting state. Additionally, since HbA1c value reflect average glucose control over a period of three months, reduction in HbA1c is a better target to aim for in the long term management of T2DM, which is a chronic disease, as opposed to blood glucose levels which vary from hour to hour.

Moreover, with the recent standardisation of HbA1c measurement (9), (10), HbA1c serves as a more valid objective measure. Additionally, HbA1c values are now used to diagnose T2DM (11), without the use of the cumbersome glucose tolerance test. Consequently, (12), although the oral glucose tolerance test is still widely used world-wide, HbA1c levels serve the dual purpose of diagnostic tool and target for optimal management.

Self-knowledge of one’s glucose levels and one’s own HbA1c levels has been advocated (1), (13) and is viewed as self-care behaviour in the management of Type 2 Diabetes Mellitus. Thus, intuitively self knowledge of one’s own HbA1c may be associated with reduced complications of Type 2 Diabetes Mellitus and reduced morbidity and mortality. However, there is a paucity of studies evaluating the prevalence of HbA1c and its relationship with glycaemic control.

Two small studies have compared ‘recall’ of one’s own HbA1c levels to recorded HbA1c (14) and evaluated ‘understanding of patient’s own HbA1c’ (15). Their results suggested that poor recall
and poor understanding of one’s own HbA1c was associated with poorer glycaemic outcomes, which in turn have been associated with significant morbidity and mortality (16). Remarkably, the participants from both studies were recruited from one outpatient setting, limiting generalisability of their findings.

Studies evaluating recall of information in other areas of medicine (‘recall’ of information when consenting patients for surgical procedures (17) and comparing ‘awareness’ (self-knowledge) of one’s own blood pressure (BP) level (18), with actual recorded BP (19) ) appear to suggest that patients given written information may have a better ability to recall that information (17) and that being self-aware may result in better outcomes (18), (19).

Having HbA1cSK may be considered as self-care behaviour as a component of diabetes education and although, the effects of structured education on outcome HbA1c has been explored by numerous studies (20), the effects of self-knowledge of one’s own HbA1c value has not.

However these older studies have been small, limited to pre-defined population and have not accurately addressed self-knowledge of HbA1c values, posing a research gap in this area.

Our aim was to investigate, in a larger multinational study, the population of people with T2DM who have accurate knowledge of their own HbA1c level and whether this is associated with better glycaemic control.

Research Design and Methods

Data was derived from the GUIDANCE (9), a large cross-sectional study (n = 7,597) across eight European countries (Belgium, France, Germany, Ireland, Italy, Netherlands, Sweden, and United Kingdom). The data was obtained prospectively from patients with T2DM from primary and secondary care, using a shared protocol to promote standardisation, between March 2009 and
December 2010. After face to face consent was obtained, patients were given a self-completion questionnaire which was returned at the visit or soon thereafter. This was combined with retrospective data collection from patient records, relating to measured HbA1c values and other variables recorded within a year of the specific patient survey answers. Individual centre and country effects and differences were not studied. Data retrieved were up to a year old, as part of the study design.

The data on HbA1c\textsubscript{SK} had been specifically collected in an answer to a personalised survey question “what is your current HbA1c?” with an option of recording “don’t know” if the HbA1c value was unknown to the participant. Thus, HbA1c\textsubscript{SK} was recorded in both binary (know and don’t know) and also in continuous form, with missing data recorded separately for each type of variable. The participant’s actually measured HbA1c, referred to as the recorded HbA1c (HbA1c\textsubscript{LAB}), was extracted from the participant’s medical records and similarly, was recorded in both binary form (recorded or not recorded) and also in continuous form, with missing data recorded separately for each type of variable. All HbA1c values for HbA1c\textsubscript{SK} and HbA1c\textsubscript{LAB} were expressed in % values only.

The data was analysed using the Statistical package for Social Science (SPSS, version 20) software. Normally distributed continuous data was expressed as mean and standard deviation and categorical data as a number followed by percentage. Outliers for HbA1c\textsubscript{SK} values greater than three standard deviations from the mean HbA1c\textsubscript{SK} were removed (<1% of the data) since they are thought to cause significant distortion on further analyses. The accuracy of the reported HbA1c\textsubscript{SK} was assessed by the level of agreement between the value for reported HbA1c\textsubscript{SK} and the value for HbA1c\textsubscript{LAB} recorded for each participant, by calculating the kappa statistic (21, 22), the intraclass correlation coefficient (ICC) (23) and with the Bland and Altman plot (24). Reported HbA1c\textsubscript{SK}
was subsequently divided into two separate groups: accurate if the difference between the recorded HbA1c_{LAB} and the reported HbA1c_{SK} varied by +/- 0.5% and inaccurate if this difference was outside of these parameters. Glycaemic control, determined by the measured/recorded HbA1c, for the two groups was compared using the independent t-test. P < 0.05 was considered statistically significant.

Results

The GUIDANCE data was collected between 2009 and 2010. A preliminary comparison of the participants revealed that of the 7,595 participants, 3753 participants had reported having HbA1c_{SK}, indicating a prevalence of HbA1c_{SK} of 49.4%. 7,414 participants (97.6% of the total GUIDANCE population) had a numerically recorded value for HbA1c_{LAB}. Amongst the 3753 participants with HbA1c_{SK}, 3745 participants (99.8%) also had data for HbA1c_{LAB}.

Participants who reported HbA1c_{SK} were found to have a longer duration of T2DM (by 1 year) than those who had not reported HbA1c_{SK}, which although was a statistically significant difference, was felt not to be clinically significant. Otherwise the two groups were clinically similar (Table 1) and men and women were equally likely to have HbA1c_{SK} (9). Participants who had reported HbA1c_{SK} had a lower recorded mean HbA1c_{LAB} (7.1%, SD 1.1) compared to the group of participants who did not report HbA1c_{SK} (mean HbA1c_{LAB} = 7.2%, SD 1.3), by 0.1%, which was statistically significant (p < 0.05). However the authors felt that this difference was clinically insignificant (Table 2).

There was a positive correlation between reported HbA1c_{SK} and recorded HbA1c_{LAB}. The results of the ICC for reported HbA1c_{SK} and recorded HbA1c_{LAB} revealed a statistically significant (p <
0.05) level of agreement for the two variables for the participants as a whole (ICC = 0.84, CI 0.83-0.85) with narrow 95% confidence intervals. Further, the ICC, kappa statistic (k = 0.69, p< 0.05) and the Bland and Altman plot (Figure 1) indicated a high level of agreement between reported HbA1c_{SK} and recorded HbA1c_{LAB}.

An overwhelming majority (78.3%) of the reported HbA1c_{SK} was found to be accurate. Those participants in the group with accurately reported values for HbA1c_{SK} had identical values for mean reported HbA1c_{SK} (7.0%, 1.0) and mean recorded HbA1c_{LAB} (7.0%, 1.0), whereas the participants who had inaccurately reported HbA1c_{SK} group were found to have reported a mean HbA1c_{SK} of 6.8% (SD 1.3), whilst their actual mean recorded HbA1c_{LAB} was found to be of a higher value of 7.3% (SD 1.2), a difference in HbA1c value of 0.5% (Table 4).

There was a statistically significant difference between the two groups for values for reported HbA1c_{SK}, with a mean difference between the two groups of 0.16% (95% CI 0.04 to 0.27, p < 0.001). However, the size of the effect (eta 2) for the difference in reported HbA1c_{SK} between the two groups was negligible (eta 2 = 0.002). There was a statistically significant difference (p < 0.01) between the accurately and inaccurately reported HbA1c_{SK} groups for recorded HbA1c_{LAB} with a mean difference of -0.33% (95% CI --0.42 to -0.23) (Table 4).

Conclusion

The key findings of this large multinational study show that the prevalence of self- knowledge of a patient’s own HbA1c value is approximately 50%. Overall, 78.4% of those with self- knowledge of their own HbA1c accurately report their HbA1c_{SK} (when compared to their own laboratory value). Furthermore, participants who report an accurate value for HbA1c_{SK} have a statistically
significant (p < 0.001) lower mean HbA1c_{LAB} (7.0%, 53mmol/l) compared to those participants who report an inaccurate value for their own HbA1c (mean 7.3%, 56mmol/l).

The prevalence finding is similar to that reported previously (14), (15) and disappointingly, despite the increased plethora of awareness and education over the past 10 years, the proportion of the population with reported HbA1c_{SK} has not significantly increased. In one study (14) a much higher proportion of participants (66-67%) recalled their HbA1c for values between 6-9%, which one could assert represents a wide range of values. In that study, poor HbA1c recall (36% of the participants) was significantly associated with having a higher recorded HbA1c level (odds ratio 1.24), implying poor self-knowledge of one’s own HbA1c was associated with worse glycaemic control. This study was conducted in a tertiary centre in one country, limiting the generalisability of the results and rendering it prone to selection bias. A separate study (25) found that 18.6% of participants had remembered their HbA1c within realistic bounds (comparable to accuracy), despite extremely broad criteria for the realistic bounds of an HbA1c value of 4-20%, whereas, in the same year, another study (26) had reported that only 25% of the respondents had accurately reported their HbA1c. Furthermore, similar to our analysis, a recent, albeit small study from the United Kingdom (15) found a reported rate of self-knowledge of HbA1c of 48.2 %. However, 50% of this study population had Type 1 DM and therefore were treated with insulin. One could argue that participants requiring insulin are different to participants with Type 2 Diabetes Mellitus on oral medication and have greater levels of self-awareness since insulin treatment requires a more in-depth understanding of diabetes management.

In our study, the group that had reported HbA1c_{SK} was found to have a statistically significantly lower recorded HbA1c_{LAB}, by 0.1%, compared to the group that had not reported self-knowledge of their own HbA1c, which we felt was clinically insignificant. This was surprising, since
knowledge of HbA1c values is a component of the structured education which has been recommended nationally for some years for all patients with newly diagnosed T2DM (3) and structured education itself has clearly been associated with better outcome HbA1c (27). These results may have implied that the self-reported HbA1c_{SK} had been inaccurately reported but the agreement studies found that HbA1c_{SK} to have a good level of agreement with HbA1c_{LAB}, indicating that the self-knowledge was precise. One may surmise that the difference between these two groups may have been the extent of knowledge of the Type 2 Diabetes Mellitus education, awareness of guidelines or the frequency of self-checking of glucose, but these variables would need further study. These behavioural characteristics, which are care quality markers for Type 2 Diabetes Mellitus, may themselves be confounding factors for the HbA1c_{SK} group, since they are thought to result in lower HbA1c_{LAB} independently and may have contributed to the lack of a clinically significant association between HbA1c_{SK} and measured HbA1c_{LAB} and also would need individual study before conclusions on association could be made.

Nevertheless, although the kappa and ICC statistic, and the Bland and Altman graph, showed excellent agreement between HbA1c_{SK} and HbA1c_{LAB} this did not imply causation. Thus, one cannot conclude that reporting HbA1c_{SK} results in lower HbA1c_{LAB} and better glycaemic control or alternatively that those participants with good control of their Type 2 Diabetes Mellitus (lower HbA1c_{LAB}) were more likely to have reported HbA1c_{SK}.

However, once reported HbA1c_{SK} was stratified into accurate versus non-accurate, more than three-quarters (78.3%) of the participants were found to have accurately reported HbA1c_{SK}. This was higher than previously reported, although one could argue that this study had less stringent criteria for defining accurately reported HbA1c_{SK} compared to the previous study (accurate to +/- 0.3%) (14). Moreover, participants in the group with accurate HbA1c_{SK} were found to have a
statistically significantly ($p < 0.001$) lower associated $\text{HbA1c}_{LAB}$ compared to those participants who had reported an inaccurate value. Interestingly, the level of glycaemic control of patients with accurately reported $\text{HbA1c}_{SK}$ (mean $\text{HbA1c} = 7\%$, SD 1) was optimal according to guidelines (4).

Both these results suggest that participants with accurate $\text{HbA1c}_{SK}$ may have better glycaemic control and were better managed, with measured $\text{HbA1c}$ levels at the recommend targets, compared to participants without accurate self-knowledge of their own $\text{HbA1c}$. This finding represents an improvement compared to an earlier study (15), where patients who had a good understanding of their $\text{HbA1c}$ had statistically significantly better glycaemic control, but with a mean $\text{HbA1c}$ of 7.5 % (SD 1.0), compared to those with poor understanding of their $\text{HbA1c}$ who had a mean $\text{HbA1c}$ of 8.9%, (SD 1.9).

The observed associated $\text{HbA1c}$ reduction of 0.3% in our study, although not studied as a direct intervention, is lower than that seen for new therapeutic interventions for Type 2 Diabetes Mellitus and similar to some placebo effects (28). However behavioural and lifestyle modifications (27) have also shown similar reductions in $\text{HbA1c}$ to the results found in our analysis, supporting the evidence that patients engaged in their own health care (for example knowing one’s own $\text{HbA1c}$) have better outcomes (29) yet have none of the safety issues, side effects and costs associated with traditional medications. Alternatively, this observed Hba1c reduction may be the result of other factors such as an interest in health, social class or level of education and would need to be studied further.

The main strength of this study was the large sample size and the diverse country mix across eight European countries, which increased the generalisability of the results. Further, the GUIDANCE survey had a robust study design with randomly chosen participants and had closed ended unambiguous questions with dichotomous categories (yes /no). Another strength is the use
of differing agreement analyses rather a single correlation analysis to study association the fact
that the level of agreement was studied over a range of values in the Bland and Altman plot. We
used a novel application for agreement studies to assess association for self-reported data.
Although this study represents an observational cross-sectional survey design, which has its
limitations, it provides valuable prevalence data and can give birth to future prospective
randomized controlled studies to examine the effects of HbA1cSK, as part of a structured
educational programme on outcome HbA1c.

However, an inherent limitation of this study was that HbA1cSK as a self-reported measure may be
prone to bias, as has been previously reported. Such participation response bias and the need for
‘social desirability’ have been known to influence participant answers to respond in a way they
feel they ought to (30), which may explain an underestimation of the reported HbA1cSK in the
inaccurately reporting group (6.8% Table 3). Participation bias from the more motivated patients
who generally are more likely to consent to participation in such studies, who often have had more
education and so more likely to recall their own HbA1c, was also not considered. Further, reporting
HbA1cSK involves an ability to understand, remember and recall the HbA1c value, which may be
dependant on a participant’s background and education (14) and also on a host of other biologic,
environmental and psychological variables and in a similar way it depends on the education from
the participant’s health care provider. However, data on these variables had not collected and
participants had not been stratified according to ethnicity, education or socio demographic profile.
Furthermore, since recorded HbA1c values were up to a year old, participants with a more recently
recorded blood test (due a clinically more aggressive health care provider) could have an unfair
advantage of recall compared to participants with a less recently recorded HbA1c. Thus, physician
factors may well bias the ability to recall one’s own HbA1c results. Likewise, by virtue of the
study design, the results of this analysis did not prove causation or show the direction of the association between reported HbA1c\textsubscript{SK} and recorded HbA1c\textsubscript{LAB}. In other words, having self-knowledge of one’s own HbA1c may be a consequence of good glycaemic control and not vice-versa.

Significantly, the participants that had not reported HbA1c\textsubscript{SK} (almost 50%) were excluded in the secondary analysis analyses, reducing the sample size and power of the study. Future studies to evaluate what characterized this particular population (non-participation bias) could yield answers for the causal factors of HbA1c\textsubscript{SK}, for example awareness of HbA1c goal and of guidelines.

In conclusion, this large study of self-knowledge of HbA1c across eight countries showed that almost half of the study population had knowledge of their last HbA1c value and that accurately reported self-knowledge HbA1c was associated with better glycaemic control. On average, the mean reported value for accurately reported HbA1c\textsubscript{SK} was found to be 7.0%, which corresponded with the safer target set recently by international bodies, suggesting that the effort to educate health care providers and patients may have had a beneficial effect. Nonetheless this study shows association and not causality and it is well recognised that patients with accurate self-knowledge of their HbA1c may have represented a biased group of participants who are more motivated and compliant, resulting in better managed diabetes care rather than due to their self-knowledge of HbA1c alone.

However, despite the increased levels of awareness and education over the past 10 years, this study found that the proportion of the population with reported self-knowledge of HbA1c had not increased significantly. Therefore, the authors propose to study self-knowledge of one’s own HbA1c further as an intervention in our endeavour to improve glycaemic control.
Acknowledgements

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Declarations

HT has received honoraria for speaking at meetings and serving on Advisory Boards for Novo Nordisk, Janssen, MSD, Astra Zeneca, Sanofi Aventis, Lilly and BI.

SS has received honoraria for speaking at meetings and serving on Advisory Boards for Novartis, Novo Nordisk, Janssen, MSD, Astra Zeneca, Sanofi Aventis, Lilly and BI.

MJD has acted as consultant, advisory board member and speaker for Novo Nordisk, Sanofi-Aventis, Lilly, Merck Sharp & Dohme, Boehringer Ingelheim, AstraZeneca and Janssen and as a speaker for Mitsubishi Tanabe Pharma Corporation. She has received grants in support of investigator and investigator initiated trials from Novo Nordisk, Sanofi-Aventis and Lilly

KK has received grants in support of studies and has acted as a consultant, advisory board member and speaker for Astra Zeneca, Lilly, Novartis, Boehringer Ingelheim, Janssen, Sanofi Aventis, MSD and Novo Nordisk and Roche.

LG has no conflicts of interest

GEMHR SS has served on advisory boards for Novo Nordisk and received a grant in support of his studies from Sanofi.

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Author Contributions

KK conceived the original idea
HT, KK, LG, MJD, SS, designed the analysis plan.
HT conducted the analysis – overseen by KK and LG.
All other investigators collected the data in their respective countries.
HT wrote the draft and all authors commented.

References


### Table 1: Comparison of the characteristics of participants of the participants who reported HbA1cSk and those who did not

<table>
<thead>
<tr>
<th></th>
<th>Reported HbA1cSk [N1]</th>
<th>Had not reported HbA1cSk [N2]</th>
<th>Levene’s Test For Equality of Variance (F)</th>
<th>t–test (df)</th>
<th>Mean difference between the two groups (95% Confidence Intervals)</th>
<th>P</th>
<th>Eta –squared (eta 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean age in years (SD)</strong></td>
<td>66.0 (10.5) [3745]</td>
<td>66.9 (11.1) [3499]</td>
<td>F = 8.29 p = 0.05</td>
<td>-3.55 (7062)</td>
<td>-0.91 (-1.41 to -0.41)</td>
<td>p &lt; 0.05</td>
<td>eta 2 = 0.002</td>
</tr>
<tr>
<td><strong>Mean duration of T2DM in years (SD)</strong></td>
<td>9.5 (7.5) [3485]</td>
<td>8.0 (6.6) [3133]</td>
<td>F = 43.78 p &lt; 0.05</td>
<td>8.65 (6612)</td>
<td>1.50 (1.16 to 1.84)</td>
<td>p &lt; 0.05</td>
<td>eta 2 = 0.011</td>
</tr>
<tr>
<td><strong>Mean BMI kg/m2 (SD)</strong></td>
<td>29.8 (5.6) [3069]</td>
<td>30.8 (5.8) [2630]</td>
<td>F = 1.98 p = 0.164</td>
<td>-6.32 (5697)</td>
<td>-0.96 (-1.25 to -0.66)</td>
<td>p &lt; 0.05</td>
<td>eta 2 = 0.007</td>
</tr>
</tbody>
</table>
Table 2: Comparison of mean HbA1c\textsubscript{SK} and mean HbA1c\textsubscript{LAB} between the participants who reported HbA1c\textsubscript{SK} and those who did not

<table>
<thead>
<tr>
<th></th>
<th>Reported HbA1c\textsubscript{SK}</th>
<th>Had not reported HbA1c\textsubscript{SK}</th>
<th>Levene’s Test For Equality of Variance (F)</th>
<th>t –test</th>
<th>Mean difference between the two groups (95% Confidence Intervals)</th>
<th>P</th>
<th>Eta –squared (eta 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean HbA1c\textsubscript{SK} in % (SD)</td>
<td>7.5 (14.4) [N1=3753]</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>p &lt; 0.0001</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Mean recorded HbA1c\textsubscript{LAB} in % (SD)</td>
<td>7.1 (1.1) [N2=3722]</td>
<td>7.2 (1.3) [N2=3316]</td>
<td>F = 33.90</td>
<td>-4.31</td>
<td>-0.12</td>
<td>p &lt; 0.05</td>
<td>eta 2 = 0.003</td>
</tr>
</tbody>
</table>
Table 3: Results of the level of agreement studies between for the grouped variables of reported HbA1c\textsubscript{SK} and recorded HbA1c\textsubscript{LAB}

<table>
<thead>
<tr>
<th></th>
<th>Number of Participants</th>
<th>Level of agreement statistic</th>
<th>95% Confidence Intervals</th>
<th>Degrees of freedom</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC</td>
<td>3731</td>
<td>0.84</td>
<td>0.835-0.853</td>
<td>3730</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Kappa</td>
<td>3731</td>
<td>0.69</td>
<td></td>
<td></td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>
Figure 1: The Bland and Altman Plot for the mean versus the difference of reported self-knowledge of HbA1c and recorded HbA1c

N = 3731

Mean difference between reported self-knowledge of own HbA1c (HbA1c_{SK}) and recorded HbA1c (HbA1c_{LAB}) = -0.1 \quad SD 0.64 \quad (95\% CI -1.38 - 1.14)

(Mean difference + 2 SD) = 1.14

(Mean difference - 2 SD) = -1.38
Table 4: A comparison of the participants with accurately reported HbA1c<sub>SK</sub> and inaccurately reported HbA1c<sub>SK</sub>

<table>
<thead>
<tr>
<th></th>
<th>Accurately reported HbA1c&lt;sub&gt;SK&lt;/sub&gt;</th>
<th>Inaccurately reported HbA1c&lt;sub&gt;SK&lt;/sub&gt;</th>
<th>Analysis: t-test/chi-squared with degrees of freedom (df)</th>
<th>Mean difference and 95% confidence intervals (CI)</th>
<th>Eta squared (eta&lt;sup&gt;2&lt;/sup&gt;)</th>
<th>P</th>
<th>Eta&lt;sup&gt;2&lt;/sup&gt;/ phi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean self-knowledge HbA1c in % (SD)</td>
<td>7.0 (1.0) 2921</td>
<td>6.8 (1.5) 810</td>
<td>t = 2.76 (1033)</td>
<td>0.16 (0.04 to 0.27)</td>
<td>p = 0.05</td>
<td>eta&lt;sup&gt;2&lt;/sup&gt; = 0.002</td>
<td></td>
</tr>
<tr>
<td>Mean recorded HbA1c in % (SD)</td>
<td>7.0 (1.0) 2921</td>
<td>7.3 (1.2) 810</td>
<td>t = -6.88 (1152)</td>
<td>-0.33 (-0.42 to -0.23)</td>
<td>p &lt; 0.05</td>
<td>eta&lt;sup&gt;2&lt;/sup&gt; = 0.01</td>
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</tbody>
</table>