To evaluate the outcomes of Conversation Map with the American Diabetes Association in the U.S.A. and the International Diabetes Federation outside of the USA. Over 80,000 diabetes educators have been trained to facilitate the Map sessions in over 120 countries. The effectiveness of the Map tools can vary from one cohort to the next due to cultural implications, although the program has been translated and made culturally relevant for each country in which it is used. Previous research assessing outcomes for specific cohorts of patients has been collected, but this is the first study to evaluate Map tools at the macro level.

Purpose:
To evaluate the outcomes of Conversation Map tools from a larger, more diverse sample size, representing patients from many countries and cultures, as measured by change in HbA1c.

Objective:
Conduct a meta-analysis to evaluate glycemic outcomes using Conversation Map tools to deliver diabetes self-management education and support (DSME/S).

Subjects:
A total sample size of 851 people with diabetes participating in the Map tools programs were included, from 9 different studies, representing 5 different countries (Israel, Italy, Japan, Taiwan and the United States). See figure 1 for country breakdown.

Methods:
A meta-analysis was conducted in order to integrate HbA1c outcomes from several sources. Only studies that reported the sample size, were statistically significant (p-value < 0.05), and had either baseline and post-study A1c measures or the overall change in A1c were included. See figure 2 for study selection flowchart. All studies lacking these pieces were excluded from the analysis. A weighted average, based on the reduction in A1c and sample size for each study, was computed. Factors such as time between baseline and post-study measures (i.e. 3, 6 months, 1 year, etc.), demographic composition (i.e. age, sex, duration of diabetes diagnosis), baseline clinical measures (i.e. baseline A1c) and the utilization of combination therapy (i.e. weight loss interventions) were not taken into account.

Statistical Analysis:
A meta-analysis was conducted in order to integrate HbA1c outcomes from several sources. Studies that lacked statistical significance (p-value > 0.05) were excluded from the analysis. See figure 3 for total sample size used broken out by study.

Results:
Of 38 research studies that were cataloged between 2009 and 2015, 9 were found to have the criteria detailed above. All cohorts showed a reduction in A1c, while none had an increase or no change in A1c. The weighted average for all relevant cohorts within these studies was calculated and found to be -0.24%, as shown in figure 4.

Figure 1. Sample Size (n) by Country

Figure 2. Study Selection Flowchart

Figure 3. Total Sample Size Broken out by Study*

Figure 4. Healthy Interactions Studies Included in Meta-Analysis

Discussion:
In order to compare our findings to a larger sample size, we conducted another meta-analysis of studies critically cited in the DSME/S position paper9 that showed that DSME/S tools were effective in reducing HbA1c. It is important to note that the sample size of DSME/S provided was not taken into account and included a variety; not specific to Conversation Map tools. Of these studies, one could not be located12 and three failed to include change in A1c and/or the sample size11,15. The four studies were excluded from the comparison analysis. One study14 did not report a p-value, but since it was a meta-analysis and included a large sample size, we assumed that the component studies were statistically significant which allowed for the inclusion of this study. The studies11,15 in the comparison analysis for a total of three studies and combined sample size of 10,303. As shown in figure 5, a weighted average was calculated for this new group, which had an A1c reduction of 0.63 percentage points, compared to a reduction of 0.44 percentage points that the meta-analysis specific to Healthy Interactions showed.

Conclusion:
Regardless of the country in which the diabetes Map tools programs are facilitated, clinical outcomes are positive with an almost 1.0 percentage point reduction in HbA1c. Map tools are highly efficacious in delivering self-management education as evidenced by significant improvement in glycemic control upon completion of the Map sessions. Despite this, the DSME/S position paper findings were in agreement with that of our meta-analysis, showing a significant reduction in HbA1c.

References:
5. Li CL, Yang YS, Wu YC, Lu YL, Kornlius E, Chen YJ, Lin YT, Huang CM. Application of the Diabetes Education and Prevention Tools “Conversation Map”™ in the Treatment of Type 2 Diabetic Patients in Taiwan. Poster presented at the 3rd World Conference on Diabetes (WCD) and 4th Asia Pacific Diabetes Congress 2015; October 14-17; Shanghai; China; P-772.
6. Taiwan –0.50 125 <0.0001
7. USA –0.60 22 0.02
8. USA –0.27 243 <0.001
9. USA –0.40 59 0.008

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