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**Appendix Document A1: Search strategy for Medline (1960 – November 2015)**

01. exp Diabetes Mellitus/ or diabetes.ti.
02. Hemoglobin A, Glycosylated/ or (HbA1c or A1c or glycated h?emoglobin\* or glycosylated h?emoglobin\* or glyc?emic control or clinical outcome\*).mp.
03. Peer group/ or (peer\*1 or peer health or peer support or peer led or peer educator\* or peer coach\* or peer counsel\* or peer advis\*).mp.
04. Patient Education as Topic/ or patient education.mp.
05. Self-Help Groups/ or self help group\*
06. Social Support/ or (social support or promotora).mp.

07. 4 or 5 or 6
08. peer\*1.mp.
09. 7 and 8
10. 1 and 2 and 3 and 9
11. limit 10 to yr="1960-Current"
12. randomized controlled trial.pt. or randomized controlled trials as topic/ or random\*.ti,ab.
13. 11 and 12

### **Summary of Results**

Ovid Medline and Ovid Medline In Process

62 MASR

68 RCT

Cochrane Central Register of Controlled Trials

62 RCT

Cochrane Database of Systematic Reviews

37 MASR

Scopus

16 MASR

44 RCT

CINAHL – Medline excluded

3 MASR

21 RCT

PsycINFO

1 MASR

7 RCT

ProQuest Dissertations & Theses A&I, BioOne Abstracts & Indexes, Social Service Abstracts, and

Sociological Abstracts

0 results

OCLC First Search

34 RCT

Author searches of Scopus, CINAHL, PsycINFO and Google Scholar

45 citations

Total 400 citations retrieved

Minus 195 duplicates removed

Leaves 205 unique citations

**Appendix Table A1: Detailed Risk of Bias Table**

<b>Study Name</b>	<b>Adequate Sequence Generation</b>	<b>Allocation Concealment</b>	<b>Blinding of Participants, Personnel and Outcome Assessors</b>	<b>Complete Outcome Data</b>
Keyserling 2002	Stratified block randomization with randomly permuted blocks of size 3 and 6 from random numbers generated by a personal computer	Sealed envelopes	No	Yes: Dropout < 20%. Similar dropout in both groups. Follow-up data were analyzed according to group assignment
Lorig 2008	Yes: Random-number tables <sup>a</sup>	Yes: Random-number tables for each allocation that were used randomly <sup>a</sup>	No: "Participants could not be blinded."	Yes: Dropout < 20%. Attrition reported. The "proportion of intervention non-completers compared with that of usual-care control non-completers was not statistically significant."
Lorig 2009	Yes: Randomization using random-number tables	Yes: Random-number tables for each allocation that were used randomly <sup>a</sup>	No: "Participants could not be blinded."	Yes: Dropout < 20%. Attrition reported. Proportion of intervention non-completers compared to usual-care control non-completers was not significant.
Dale 2009	Yes: Randomization protocol mentioned	Yes: Opaque sealed envelopes	Not reported	Yes: Dropout < 20%. Attrition mentioned with some reasons.
Cade 2009	Yes?: Participants were randomized into intervention or the control arm but no information on sequence generation available.	Not reported	Not reported	Yes: Dropout < 20% from baseline measurements Attrition mentioned "Dropout between randomization and baseline measurements." "At 12 months, clinical data (HbA1C) was available on 86 (77%) of the

				intervention participants and 118 (93%) control participants.”
Heisler 2010	Yes: “Random sequence generation and treatment group assignment were determined centrally just before the initial session.”	Yes: “Sequence was concealed until interventions were assigned.”	Yes: “Patients, research staff, and care managers were blinded to randomization results until after the baseline surveys and physiologic measures were completed. Data assessors remained blinded to group assignment throughout the study.”	Yes: Dropout < 20%. Attrition with reasons mentioned in flow diagram.
Philis-Tsamakas 2011	Yes: Blocked random assignment using a randomly generated numbers sequence	Allocation concealment was done <sup>a</sup>	No <sup>a</sup>	Yes: Dropout > 20% Attrition mentioned with reasons of attrition. “Fifty-one (25%) participants were lost to follow-up (Project Dulce group, n = 35 [33.5%]; control group, n = 16 [15.5%]); however, at baseline, these participants did not differ significantly from those who completed at least one follow-up assessment on any demographic or outcome variable ( $p = 0.05$ ).”
Smith 2011	Yes: Cluster randomization using minimization	Yes <sup>a</sup> : Allocation carried out independently of the research team Minimization was undertaken by an independent statistician	No	Yes: 15% dropout Attrition with reasons mentioned.
Long 2012	Yes: Using the random-number generator function, each group assignment given a random number and put the ordered numbers in envelopes	Yes: “Envelopes were sealed, shuffled, and stacked, and the research assistant took the top envelope after consent was obtained to determine group assignment.”	Yes: “Study investigators were blinded to allocation and results until study completion.”	Yes: Dropout < 20% Attrition mentioned in flow diagram with some reasons.

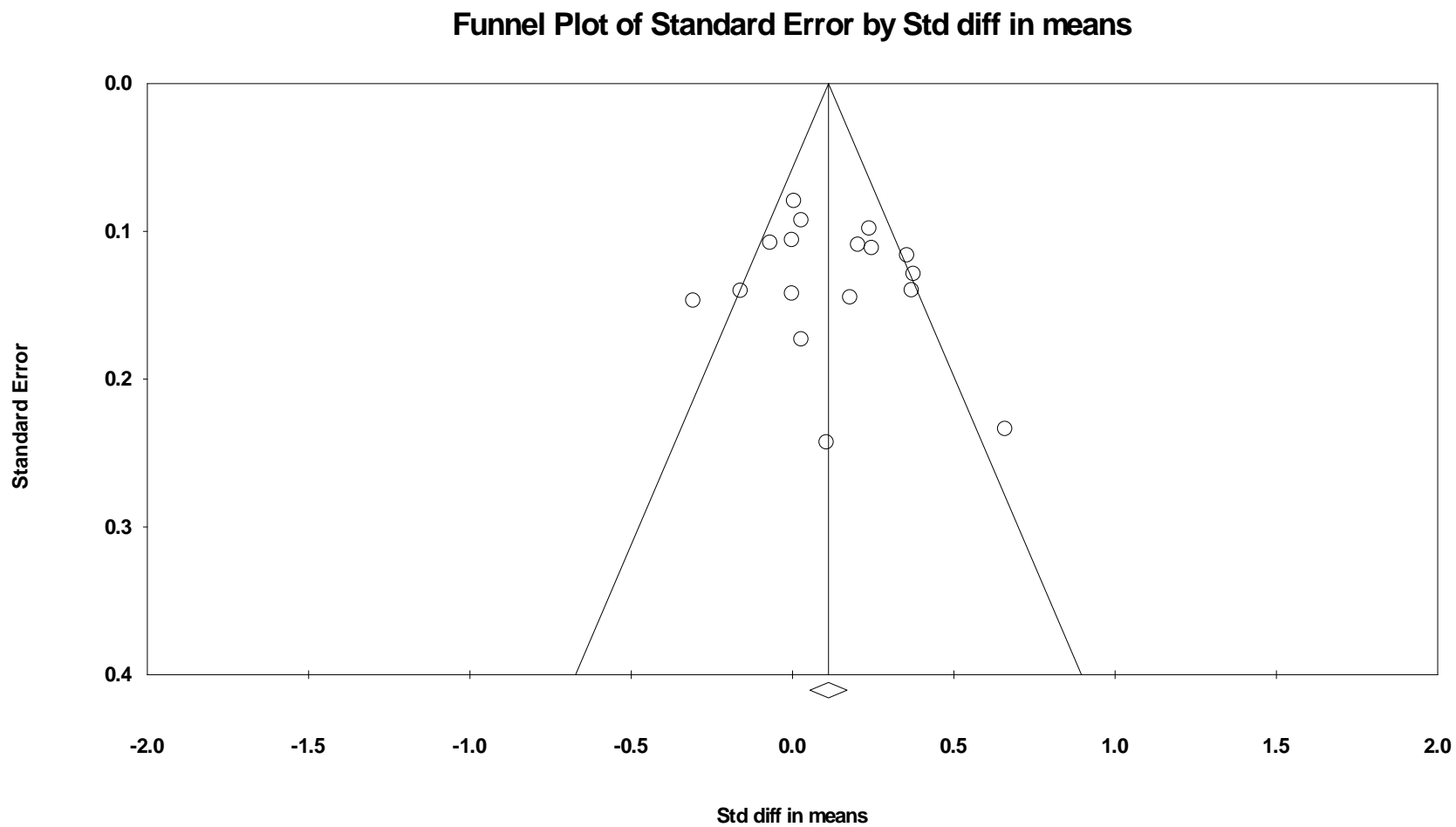
Gagliardino 2013	Yes?: Random assignment mentioned in Methods but no information received on sequence generation	Not reported	Not reported	Attrition unclear
Siminerio 2013	Yes: Randomization was done by a computer program <sup>a</sup>	No <sup>a</sup>	No <sup>a</sup>	Yes: Dropout < 20% Attrition with reasons mentioned.
Thom 2013	Yes: "Assigned to usual care or peer-coaching study arm using randomly ordered opaque envelopes."	Yes: Opaque envelopes.	No <sup>a</sup>	Yes: Dropout < 20%.Attrition mentioned.
Chan 2014	Yes: Computer-generated, block randomization 1:1 assignment.	Yes: Opaque envelop opened by non-nursing staff not involved in research.	Not reported	Yes: Dropout < 20% Attrition with reasons mentioned.
Simmons 2014	Yes: Clusters were randomized in blocks of four	Yes: Randomization by statistician who had no trial involvement after all clusters enrolled	Yes: Outcomes assessors and investigators were masked to arm allocation.	Yes: 23.9% dropout. Attrition mentioned.
Safford 2015	Yes: Random-number generator.	Yes: Randomization at the cluster level predated participant recruitment and was secure.	No: Participants and peer coaches were not blinded.	Dropout < 20% Attrition mentioned.
Ayala 2015	Yes: Conducted by study biostatistician and stratified by clinic.	?No: Not reported	Not reported	27% dropout Attrition with reasons mentioned.
McGowan 2015	Yes: Block randomization, for each block random-number generator used	Yes: Anonymized study identification numbers were assigned to each subject.	No: Participants were not blinded.	34% dropout Attrition with reasons mentioned.

Yes indicates low risk of bias; Yes? Likely low risk of bias but no details on sequence generation available from article and author; No indicates high risk of bias; ?No is not reported or no response from author.

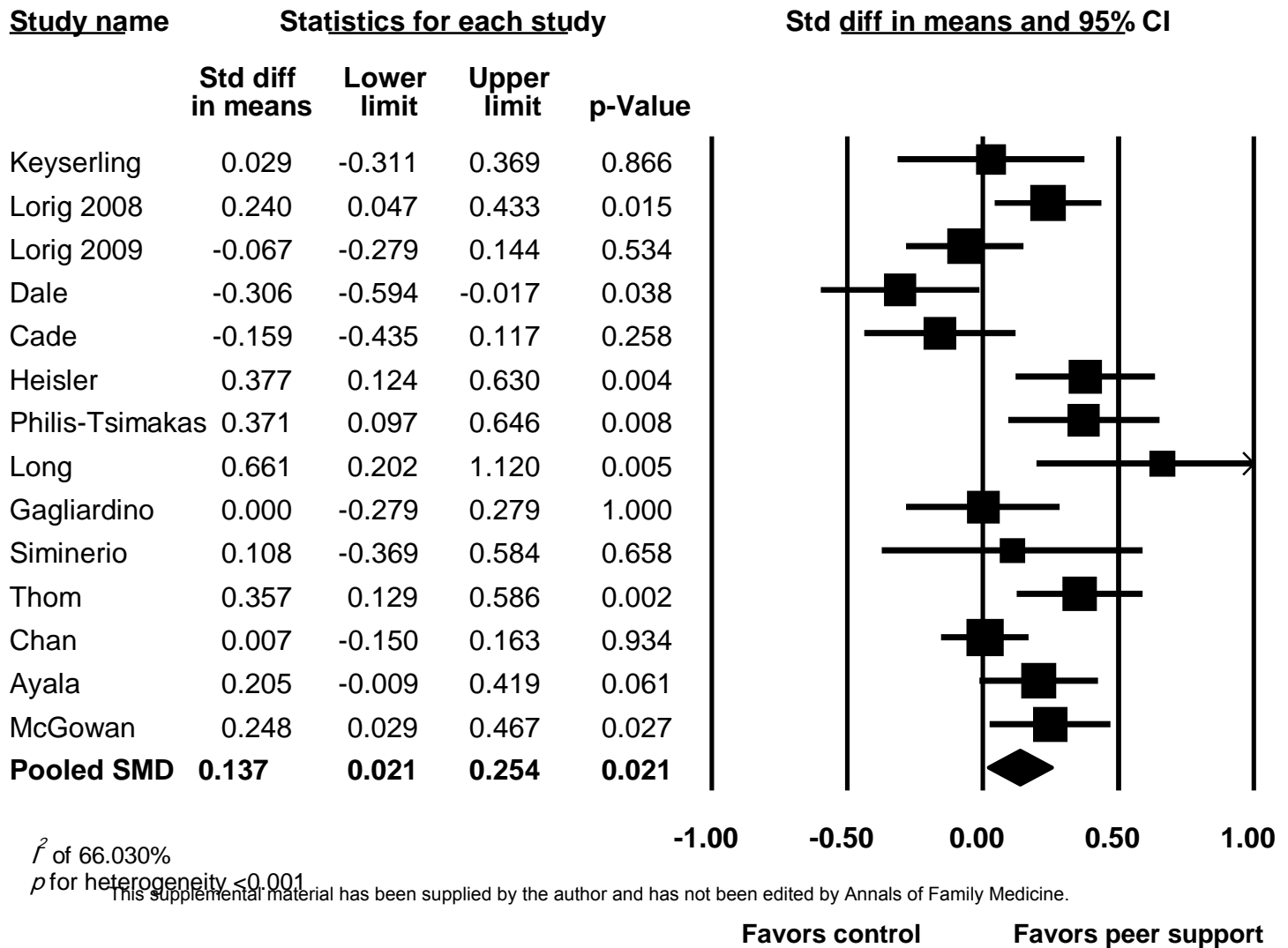
<sup>a</sup> author response to email requests

Selective outcome reporting risk was considered minimal since we only selected studies which reported hemoglobin A1C as the outcome. There were no significant other biases noted in the included studies.

**Appendix Figure A1: Funnel plot**

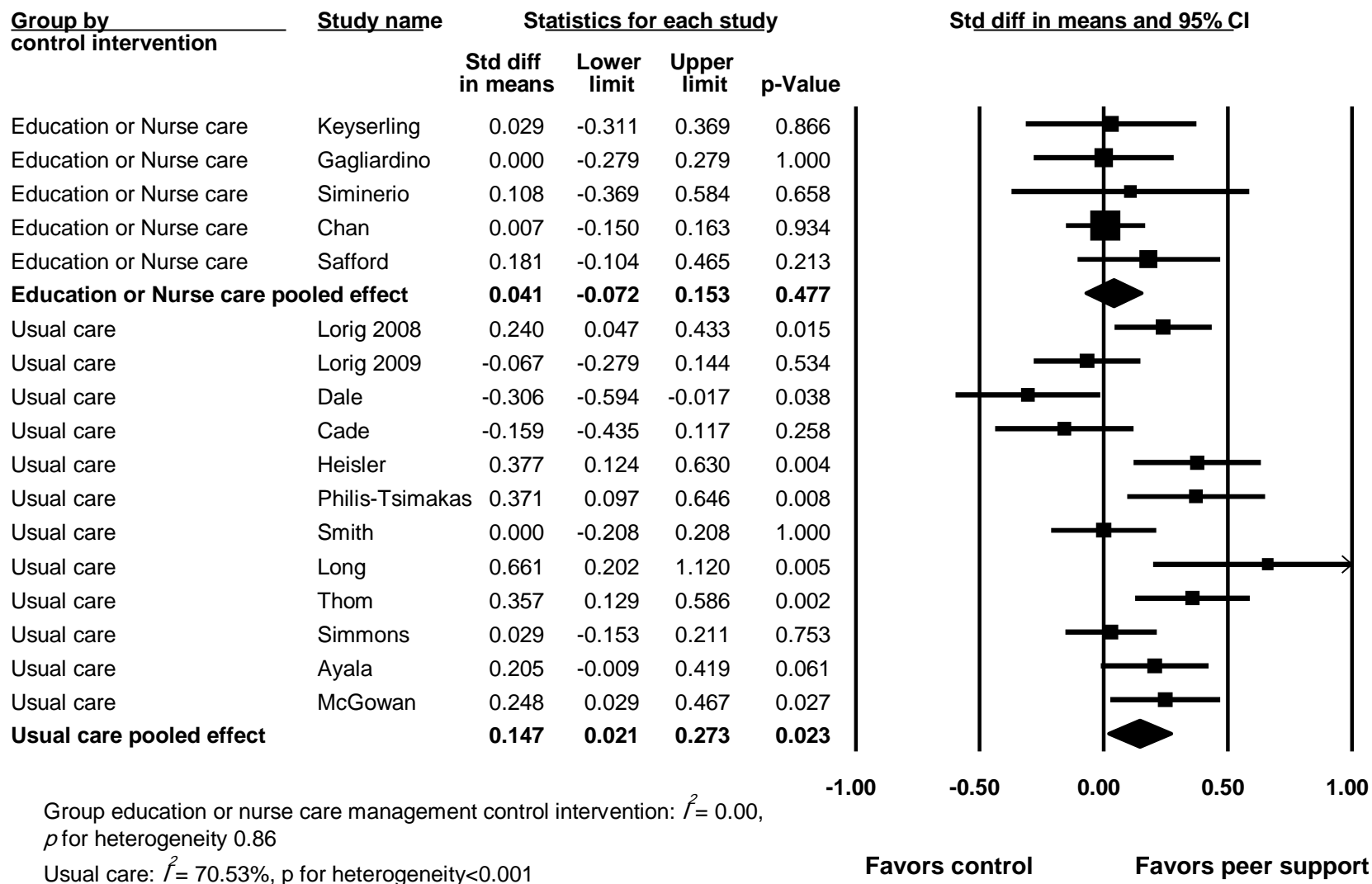


**Appendix Figure A2: Sensitivity analysis excluding cluster randomized trials**

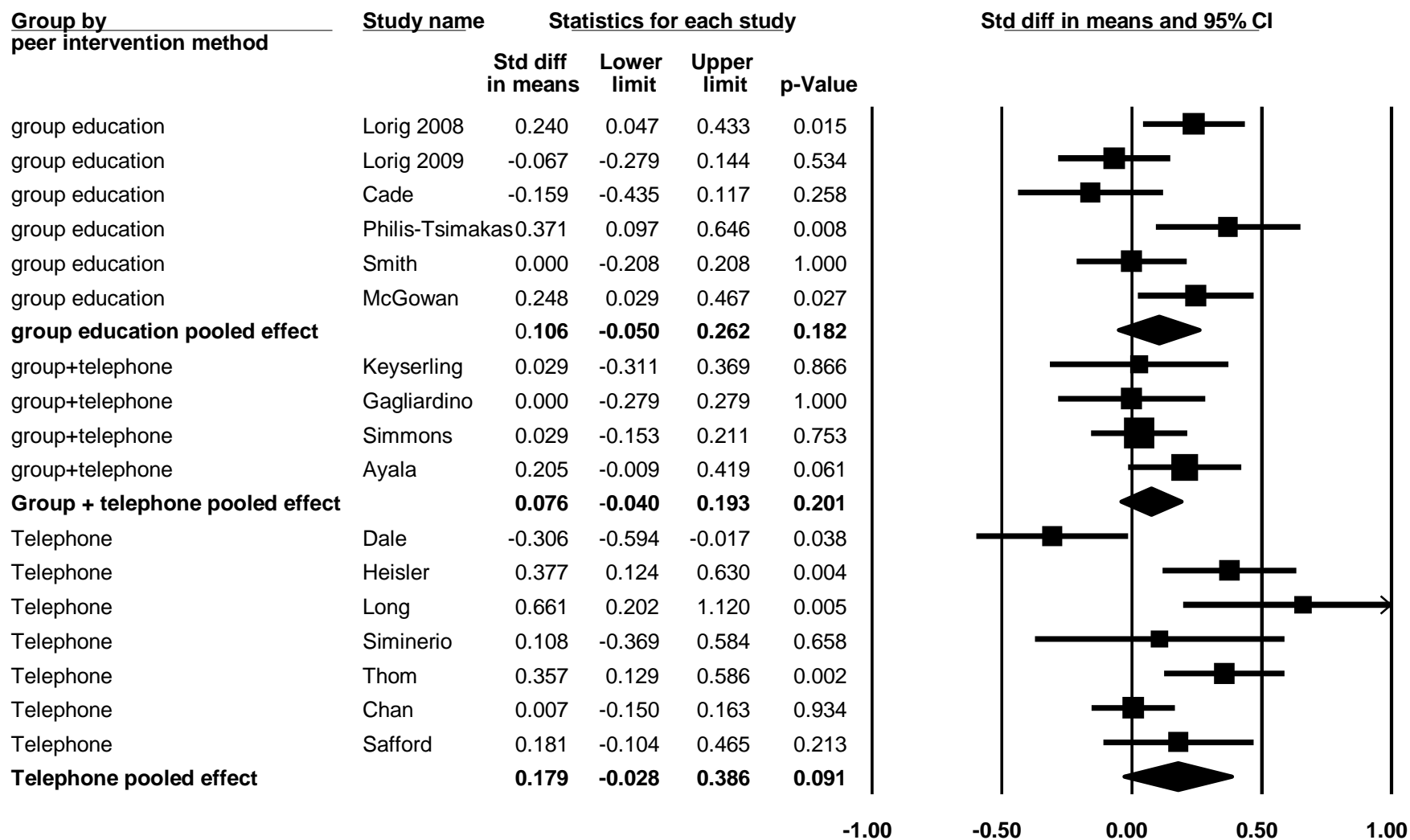




**Appendix Figure A3: Subgroup analysis of studies by control intervention method**



## Supplement Figure A4: Subgroup analysis of studies by method of peer support



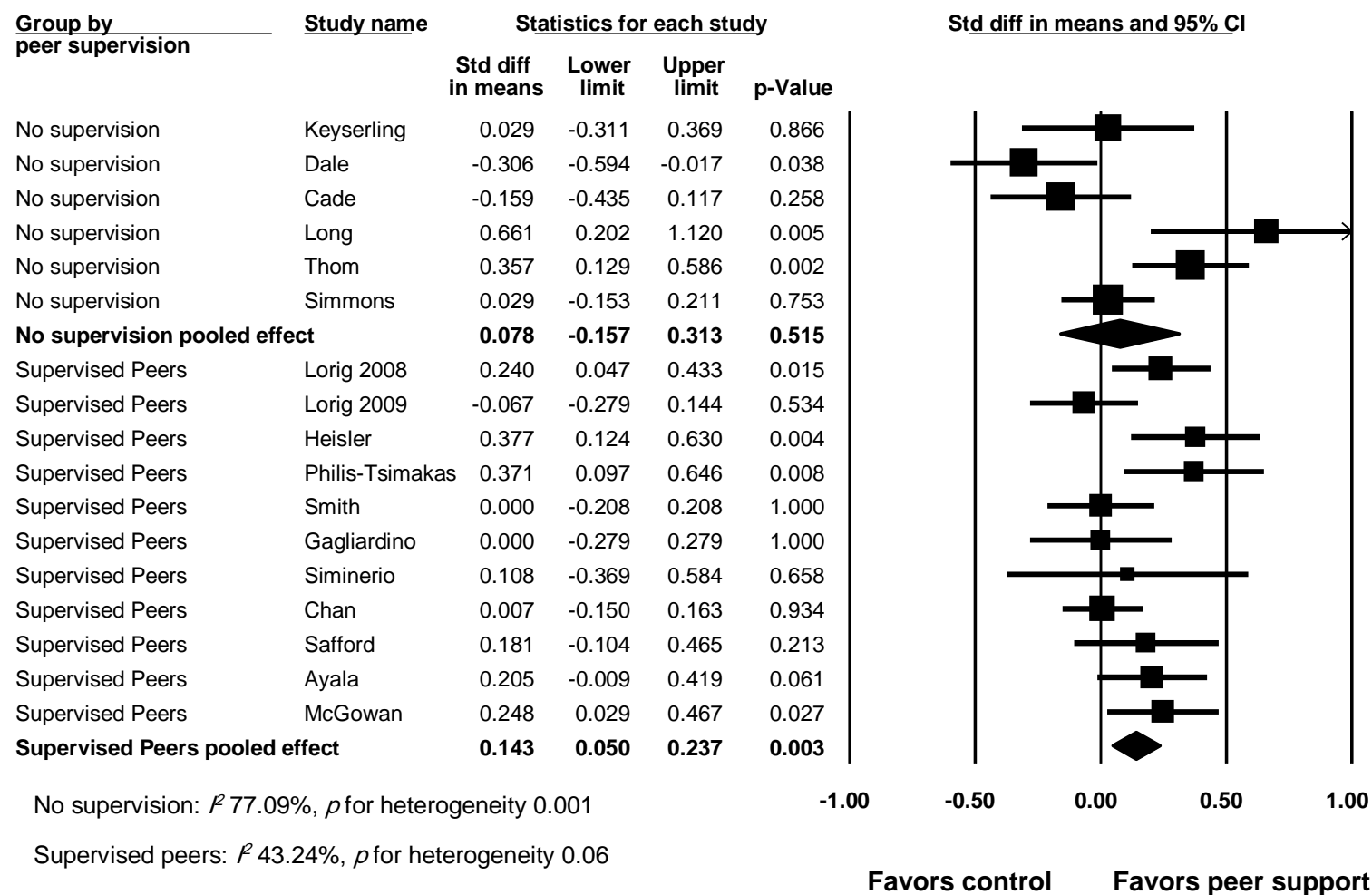
Group education:  $I^2$  64.67%,  $p$  for heterogeneity 0.01

Group education + telephone support:  $I^2$  0.00%,  $p$  for heterogeneity 0.57

Telephone:  $I^2$  74.83%,  $p$  for heterogeneity 0.001

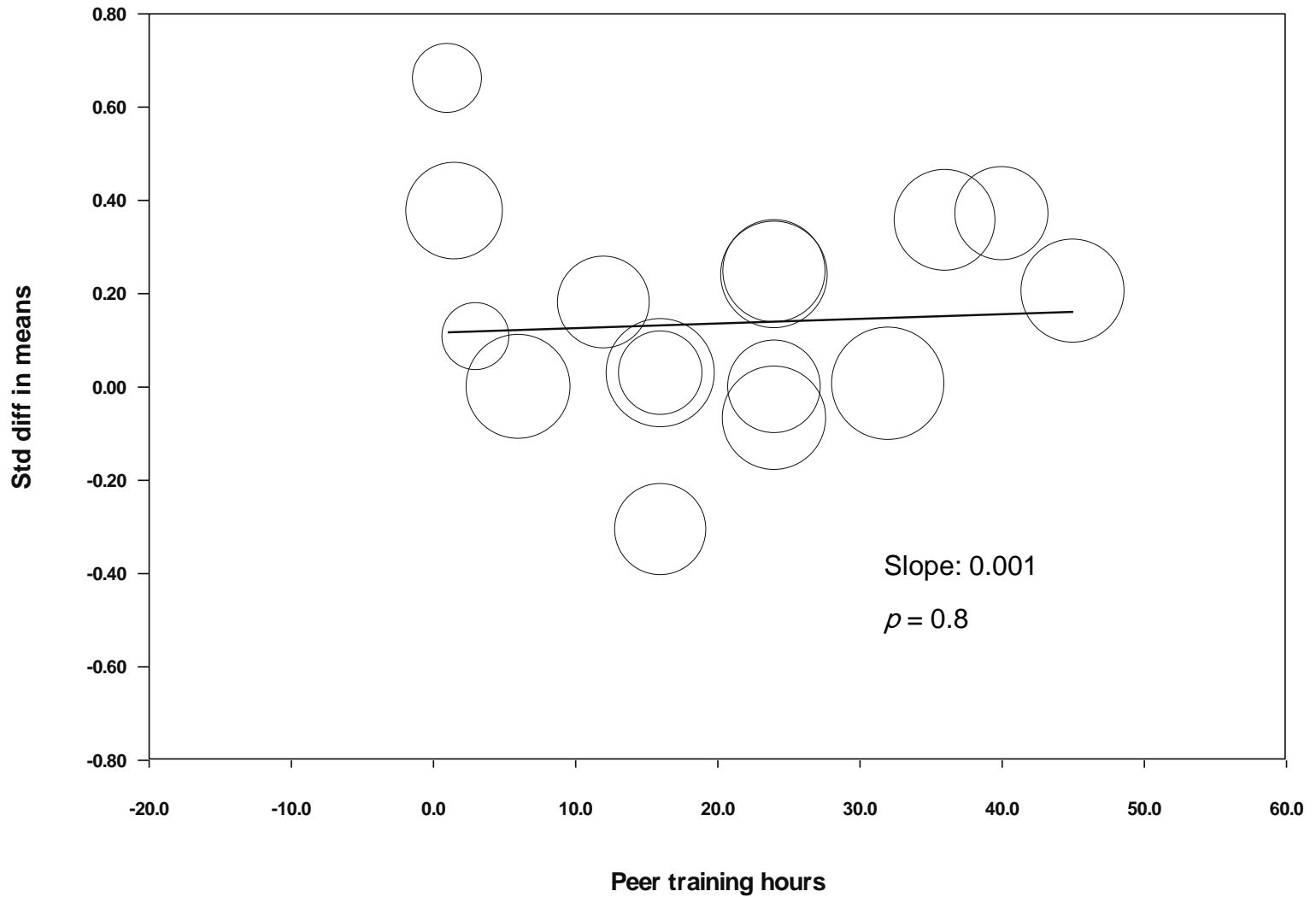
Favors control Favors peer support

## Appendix Figure A5: Subgroup analysis of studies by presence or absence of peer supervision



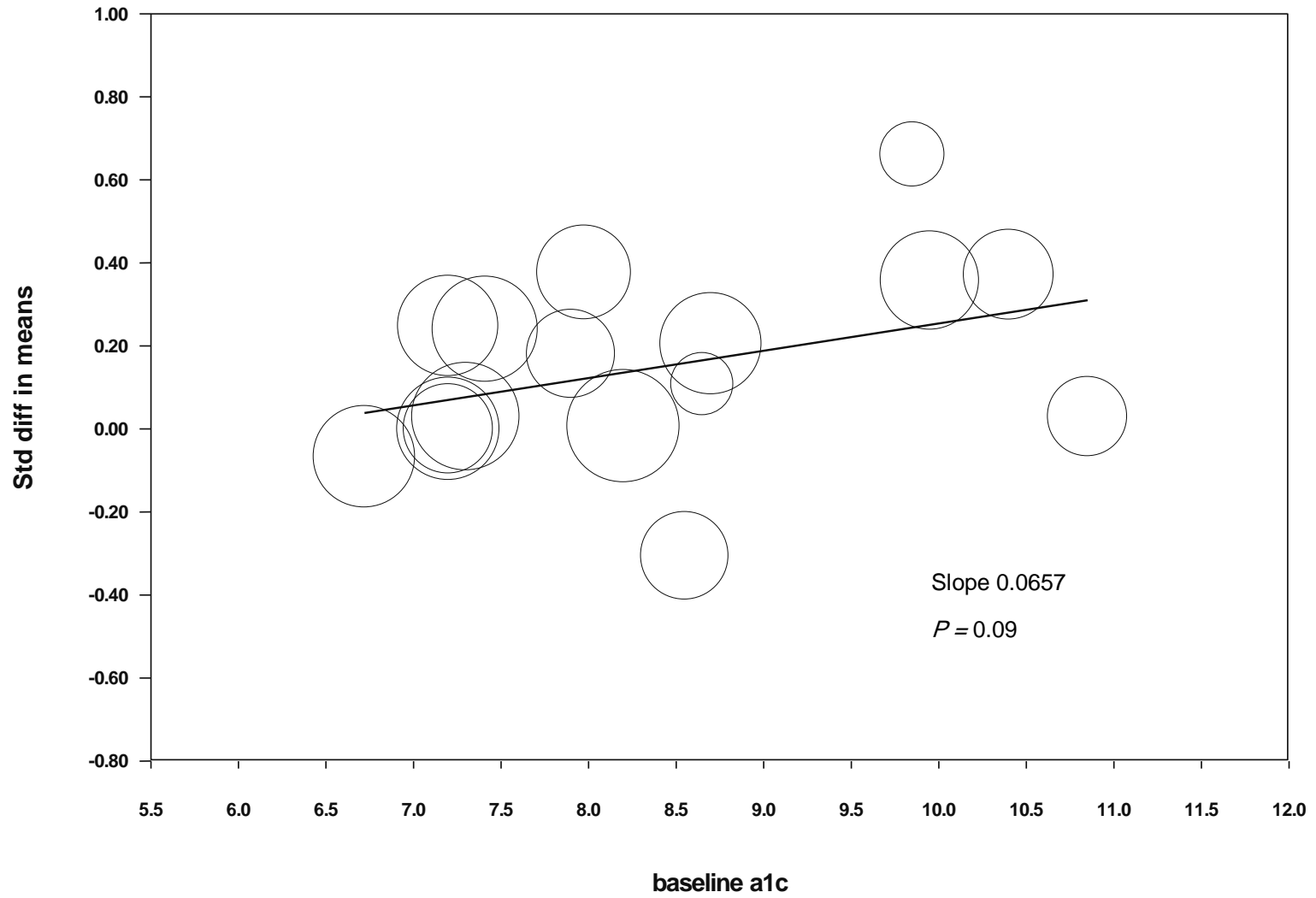
Appendix Figure A6: Meta-regression plot of effect of peer training hours on effect size

Regression of Std diff in means on Peer training hours



Appendix Figure A7: Meta-regression plot of effect of baseline Hemoglobin A1C on effect size

Regression of Std diff in means on baseline a1c



**Appendix Figure A8: Meta-regression plot of effect of duration of observation on effect size**

**Regression of Std diff in means on Months of observation after intervention completed**

