

## APPENDIX A. SEARCH STRATEGY

PubMed Searched on February 13, 2012

Set# (concept)	Search Strategy	Results
#1 (things being done)	((("Health Education"[Mesh]) OR "Self Care"[Mesh]) OR (lifestyle[Title/Abstract] OR counseling[Title/Abstract] OR "self[Title/Abstract] AND management"[Title/Abstract] OR "health[Title/Abstract] AND coaching"[Title/Abstract] OR "motivational[Title/Abstract] AND interviewing"[Title/Abstract] OR diet[Title/Abstract]))	393676
#2 (diseases of interest)	(hypertension[Title/Abstract] OR htn[Title/Abstract] OR chf[Title/Abstract] OR congestive[Title/Abstract] AND heart[Title/Abstract] AND failure[Title/Abstract] OR copd[Title/Abstract] OR chronic[Title/Abstract] AND obstructive[Title/Abstract] AND pulmonary[Title/Abstract] AND disease[Title/Abstract] OR arthritis[Title/Abstract] OR pain[Title/Abstract] AND management[Title/Abstract] OR fall[Title/Abstract] AND risk[Title/Abstract]) OR (((("Hypertension"[Mesh]) OR "Heart Failure"[Mesh]) OR "Pulmonary Disease, Chronic Obstructive"[Mesh]) OR "Arthritis"[Mesh]) OR "Pain Management"[Mesh]) OR "Accidental Falls"[Mesh])) OR asthma OR "diabetes mellitus"[MeSH Terms] OR "diabetes"[Tiab]	615989
#3 (group aspect)	((group[Title] OR groups[Title] OR share[Title] OR shared[Title]) OR ("Self-Help Groups"[Mesh])) NOT (("shared decision making") OR ("focus group") OR ("food group"))	163027
#4 (group aspect phrases)	"group education" OR "group attention control" OR "group sessions" OR "group therapy" OR "education group" OR "group program" OR "group programme" OR "group programs" OR "group programmes" OR "group interventions" OR "group exercise" OR "small group" OR "group strategy" OR "group relaxation" OR "group teaching" OR "group work" OR "group learning" OR "multidisciplinary intervention" OR "interdisciplinary intervention" OR "group session" OR "group patient visit" OR "nurse-led shared care" OR "nurse facilitated group" OR "group clinic" OR "group based self management" OR "peer led self management" OR "group or usual care" OR "group care" OR "peer led"	46864
#5 (false phrases)	"age group" OR "study group" OR "research group" OR "working group" OR "group practice" OR "group home" OR "youth group" OR "group foster home"	163923
#6 (group visits inclusive)	#3 OR #4	203980
#7	#6 AND #2 AND #1	1133
#8	#7 NOT #5	979
After deduplication from previous search		817

CINAHL (EBSCO) searched Monday, February 13, 2012 4:18:16 PM

Concept	Search Strategy	Results
Things being done	S8 S1 or S2 or S3 or S4 or S5 or S6 or S7 144186 S7 (MH "Diet+") 49615 S6 (MH "Motivational Interviewing") 758 S5 "health coaching" 68 S4 "self management" 4061 S3 (MH "Peer Counseling") OR "lifestyle counseling" 618 S2 (MH "Self Care+") 23157 S1 (MH "Health Education+") 77695	144186
Diseases of interest	S18 S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 125262 S17 (MH "Accidental Falls") OR "accidental falls" 10196 S16 "pain management" 6993 S15 (MH "Arthritis") OR "arthritis" 21888 S14 (MH "Pulmonary Disease, Chronic Obstructive+") OR "copd" 8106 S13 (MH "Heart Failure+") OR "congestive heart failure" 19227 S12 "chf" 1736 S11 "htn" 153 S10 (MH "Hypertension") OR "hypertension" 41268 S9 (MH "Asthma+") OR "asthma" OR (MH "Diabetes+") OR "diabetes" 22332	125262
Group	S44 S19 or S21 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 11958 S43 "group care" 103 S42 "group or usual care" 107 S41 "peer led self management" 7 S40 "group based self management" 5 S39 "group clinic" 12 S38 "nurse-led shared care" 7 S37 "group patient visits" 2 S36 "interdisciplinary intervention" 32 S35 "multidisciplinary intervention" 82 S34 "group learning" 167 S33 "group work" 701 S32 "group teaching" 114 S31 "group relaxation" 6 S30 "group strategy" 13 S29 "small group" 1763 S28 "group exercise" 692 S27 "group intervention" 794 S26 "group programme" 105 S25 "group program" 165 S24 "education group" 231 S23 "group therapy" 889 S22 ""group sessions" 0 S21 "group attention control" 2 S20 ""group education"" 0 S19 (MH "Group Exercise") OR (MH "Support Groups+") 7180	11958

Concept	Search Strategy	Results
False Phrases	S55 S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 20032 S54 "group foster home" 0 S53 "youth group" 14 S52 "group home" 142 S51 "group practice" 1642 S50 "working group" 1276 S49 "research group" 597 S48 "study group" 4509 S47 "food group" 180 S46 "focus group" 5757 S45 "age group" 6066	20032
	S8 and S18 and S44 128	128
	S57 S56 NOT S55 <b>123</b>	123
After deduplication from previous searches		90

Database: PsycINFO <1806 to February Week 1 2012>

Concept	Search Strategy
Things being done	1 exp Health Education/ (12448) 2 exp Self Management/ or exp Health Promotion/ or exp Disease Management/ (17441) 3 exp Lifestyle/ or lifestyle counseling.mp. (6652) 4 health coaching.mp. (37) 5 exp Motivational Interviewing/ (800) 6 1 or 2 or 3 or 4 or 5 (35296)
Diseases of interest	7 asthma.mp. or exp Asthma/ (5016) 8 exp Hypertension/ or hypertention.mp. (4665) 9 exp Heart Disorders/ or congestive heart failure.mp. (9041) 10 copd.mp. or exp Chronic Obstructive Pulmonary Disease/ (951) 11 exp Rheumatoid Arthritis/ or exp Arthritis/ or arthritis.mp. or exp diabetes mellitus/ or diabetes.mp. (4170) 12 pain management.mp. or exp Pain Management/ (7290) 13 exp Falls/ or accidental falls.mp. (1089)

Concept	Search Strategy
Group	15 exp Group Discussion/ or exp Group Counseling/ (7568) 16 “group education”.mp. (252) 17 “group attention control”.mp. (2) 18 “group sessions”.mp. (1970) 19 “group therapy”.mp. (10895) 20 “education group”.mp. (419) 21 “group programme”.mp. (109) 22 “group program”.mp. (703) 23 “group intervention”.mp. (1995) 24 “group exercise”.mp. (164) 25 “small group”.mp. (6780) 26 “group strategy”.mp. (42) 27 “group relaxation”.mp. (55) 28 “group teaching”.mp. (174) 29 “group work”.mp. (3647) 30 “group learning”.mp. (698) 31 “multidisciplinary intervention”.mp. (104) 32 “interdisciplinary intervention”.mp. (46) 33 “group session”.mp. (492) 34 “group patient visits”.mp. (3) 35 “nurse-led shared care”.mp. (3) 36 “group clinic”.mp. (14) 37 “group based self-management”.mp. (3) 38 “peer led self management”.mp. (6) 39 “group or usual care”.mp. (5) 40 “group or usual care”.mp. (5) 41 “group care”.mp. (414) 42 “peer led”.mp. (356) 43 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 (32430)
False Phrases	44 “study group”.mp. (2935) 45 “age group”.mp. (8248) 46 “research group”.mp. (1167) 47 “working group”.mp. (897) 48 “group practice”.mp. (456) 49 “group home”.mp. (782) 50 “youth group”.mp. (122) 51 “group foster home”.mp. (8) 52 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 (14552)
	53 6 and 14 and 43 (55)
	54 53 not 52 (55)
Deduplication	N=44 unique

Database: EBM Reviews - Cochrane Central Register of Controlled Trials <January 2012>

Concept	Search Strategy
Things being done	<p>1 exp Health Education/ (7370)</p> <p>2 exp Self Management/ or exp Health Promotion/ or exp Disease Management/ (5010)</p> <p>3 exp Lifestyle/ or lifestyle counseling.mp. (1877)</p> <p>4 health coaching.mp. (12)</p> <p>5 exp Motivational Interviewing/ (0)</p> <p>6 1 or 2 or 3 or 4 or 5 (12310)</p>
Disease of interest	<p>7 asthma.mp. or exp Asthma/ (18081)</p> <p>8 exp Hypertension/ or hypertention.mp. (12184)</p> <p>9 exp Heart Disorders/ or congestive heart failure.mp. (2610)</p> <p>10 copd.mp. or exp Chronic Obstructive Pulmonary Disease/ (5428)</p> <p>11 exp Rheumatoid Arthritis/ or exp Arthritis/ or arthritis.mp. or exp diabetes mellitus or diabetes.exp(8528)</p> <p>12 pain management.mp. or exp Pain Management/ (1220)</p> <p>13 exp Falls/ or accidental falls.mp. (617)</p> <p>14 7 or 8 or 9 or 10 or 11 or 12 or 13 (47973)</p>
Group	<p>15 exp Group Discussion/ or exp Group Counseling/ (0)</p> <p>16 “group education”.mp. (203)</p> <p>17 “group attention control”.mp. (15)</p> <p>18 “group sessions”.mp. (445)</p> <p>19 “group therapy”.mp. (905)</p> <p>20 “education group”.mp. (289)</p> <p>21 “group programme”.mp. (70)</p> <p>22 “group program”.mp. (188)</p> <p>23 “group intervention”.mp. (1350)</p> <p>24 “group exercise”.mp. (428)</p> <p>25 “small group”.mp. (662)</p> <p>26 “group strategy”.mp. (8)</p> <p>27 “group relaxation”.mp. (40)</p> <p>28 “group teaching”.mp. (42)</p> <p>29 “group work”.mp. (65)</p> <p>30 “group learning”.mp. (42)</p> <p>31 “multidisciplinary intervention”.mp. (50)</p> <p>32 “interdisciplinary intervention”.mp. (18)</p> <p>33 “group session”.mp. (86)</p> <p>34 “group patient visits”.mp. (1)</p> <p>35 “nurse-led shared care”.mp. (3)</p> <p>36 “group clinic”.mp. (27)</p> <p>37 “group based self-management”.mp. (4)</p> <p>38 “peer led self management”.mp. (1)</p> <p>39 “group or usual care”.mp. (156)</p> <p>40 “group or usual care”.mp. (156)</p> <p>41 “group care”.mp. (50)</p> <p>42 “peer led”.mp. (128)</p> <p>43 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 (4846)</p>

Concept	Search Strategy
False phrases	44 “study group”.mp. (10409) 45 “age group”.mp. (1455) 46 “research group”.mp. (752) 47 “working group”.mp. (210) 48 “group practice”.mp. (165) 49 “group home”.mp. (82) 50 “youth group”.mp. (5) 51 “group foster home”.mp. (0) 52 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 (12995)
	53 6 and 14 and 43 (175) 54 53 not 52 (167)

## APPENDIX B. INCLUSION AND EXCLUSION CRITERIA

This criteria is for use in screening full-text articles to address the following key questions:

KQ1. In adults with chronic medical conditions, how do group visits compared to usual care affect the following:

- (1) medication adherence, biophysical markers [laboratory markers of health states (e.g., HbA1c) or physiological measures (e.g., blood pressure)]
- (2) symptom status, functional status, disease-specific or all-cause mortality, patient satisfaction
- (3) utilization of medical resources, health care costs
- (4) adverse outcomes (e.g., patient confidentiality, participation/missed appointments)?

KQ2. For adults with chronic medical conditions, do the effects of group visits vary by patient characteristics? Characteristics of interest include medical diagnosis, severity of disease, and comorbidities.

KQ3. (Depending on the size and comparability of elements identified in the literature) Which components of group visits are associated with greater intervention effects?

1. Is the full text of the article in English? Yes..... Proceed to #2 No..... Code <b>X1</b> . STOP
2. Is the article a primary study that presents findings based on original data collection; or a systematic review of primary studies? Yes..... Proceed to #3 No..... Code <b>X2</b> . Go to #6
3. Does the study population include adults with chronic medical conditions, specifically DM, HTN, CHF, COPD, asthma, arthritis, pain management, or history of falls? Yes..... Proceed to #4 No..... Code <b>X3</b> . Go to #6
4. Does the study evaluate the effects of an intervention consisting of group visits led by non-prescribing facilitators (e.g., dietitians, nurses, social workers, peer educators, psychologists, pulmonary technicians, physical therapists)? Group visits may include prescribing practitioners (e.g., pharmacists, nurse practitioners, physician assistants, physicians) if they function in an advisory capacity only and do not provide individual care plans or medication management. Yes..... Proceed to #5 No, not a group visit intervention ..... Code <b>X4</b> . Go to #6 No, a group visit that includes individualized treatment by a prescribing provider ..... Code <b>X4-SMA</b> No, a group visit in the diabetes mellitus clinical area that was published prior to the 1998 UKPDS study ..... Code <b>X4-pre UKPDS</b>

<p>5. Is the study design one of the following:          An RCT or a systematic review/meta-analysis that includes RCTs..... Code <b>I</b>          An observational/quasi-experimental study..... Code <b>O</b>          None of the above .....Code <b>X5</b>. Proceed to #6</p> <p>6. Is the article potentially useful for background, discussion, or reference-mining?          Yes..... Add code <b>B</b>. STOP          No..... STOP</p>
---

Codes to use for abstract screening:

**X** = Exclude  
**B** = Background  
**I** = Include  
**O** = Observational quasi/experimental study  
**SMA** = Not relevant for Group Visits but may be useful for review of Shared Medical Appointments

PICOTS

**Patients** – Patients with DM, HTN, CHF, COPD, asthma, arthritis, pain management, history of falls.  
 Exclude comorbid serious mental illness such as schizophrenia. Studies with patients who have comorbid depression may be included.

**Intervention** – Group visits led by individuals who are non-prescribing health professionals and lay facilitators (e.g., dietitians, nurses, social workers, peer educators, psychologists, pulmonary technicians, physical therapists). Group visits may include prescribing providers (e.g., physicians, pharmacists, advanced practice nurses, physician assistants) if they function in an advisory capacity only (i.e., do not provide individual care plans or medication management).  
 Exclude the following:

- support groups with no education component
- multicomponent interventions for which a group visit is an optional but not required element
- multicomponent interventions that contain a required group visit but the independent effects of the group visit component cannot be evaluated separately
- interventions that focus on completion of established exercise or relaxation modalities (e.g. yoga, tai chi, meditation classes) with no education component. However, a group visit that teaches and/or demonstrates tailored exercises would be included.

**Comparator** – Usual care, non-group visit care

**Outcome** – Biophysical markers (HbA1c, lipids); physiological measures (BP); control of these markers/measures; rehospitalizations; medication adherence; ED visits; functional status; patient satisfaction; patient participation; attrition rates; utilization of medical resources, health care costs; and adverse outcomes.

**Timing** – To be determined. We may want to allow for sufficiently long group visit interventions to observe differences between groups

**Setting** – Any

## **APPENDIX C. QUALITY ASSESSMENT**

### **Definition of “good,” “fair,” and “poor” designations**

Studies rated “good” have the least risk of bias, and results are considered valid. Good-quality studies include clear descriptions of the population, setting, interventions, and comparison groups; a valid method for allocation of patients to treatment; low dropout rates and clear reporting of dropouts; appropriate means for preventing bias; and appropriate measurement of outcomes.

Studies rated “fair” are susceptible to some bias, but it is not sufficient to invalidate results. These studies do not meet all the criteria for a “good” quality rating, but there is no indication that study flaws are likely to cause major bias. The study may be missing information, making it difficult to assess limitations and potential problems. The “fair” quality category is broad, and studies in this category can vary in their strengths and limitations. The results from fair studies range from valid to probably valid.

Studies rated “poor” have substantial flaws that imply biases in various rated categories that may invalidate results. They have a serious or “fatal” flaw in design, analysis, or reporting, including: large amounts of missing information, discrepancies in reporting, or raise serious concerns about the delivery of the intervention. The results of these studies are as likely to reflect flaws in the study design as they are to reflect true differences between compared groups. We did not exclude studies rated poor quality a priori, but poor quality studies were considered to be less valid than higher-quality studies when synthesizing the evidence, particularly when discrepancies between studies were present.

Appendix Table C1. Quality assessment and methodological characteristics of individual studies in randomized controlled trials of group visits

Study	Selection: random sequence	Selection: allocation concealment	Blinding: participants	Blinding: personnel	Detection: assessors blinded	Attrition: address missing	Reporting: no selective reporting	Participation (% enrolled among eligible individuals)	Attrition (% loss to followup among N randomized)	Study quality (Good/Fair/Poor)
Abdulwadud, 1999 <sup>49</sup>	Unclear	Unclear	No	No	Unclear	Unclear	Unclear	71	38	Poor
Ackerman, 2012 <sup>31</sup>	Yes	Yes	No	No	No	Yes	Yes	25	22	Fair
Adolfsson, 2007 <sup>75</sup>	Unclear	Yes	Unclear	Unclear	Unclear	Yes	Yes	53	13	Fair
Allen, 1995 <sup>50</sup>	Unclear	Unclear	No	No	Unclear	Yes	Unclear	NA*	3	Poor
Anderson, 2005 <sup>76</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	NA*	6	Poor
Arnold, 2010 <sup>45</sup>	Yes	Yes	No	No	Yes	Yes	Yes	55	23	Fair
Baghianimoghadam, 2010 <sup>67</sup>	Unclear	No	No	No	No	NR	Yes	NR	NR	Poor
Balcazar, 2009 <sup>64</sup>	Yes	Unclear	No	No	Unclear	Yes	Yes	NR	0	Poor
Barlow, 2000 <sup>32</sup>	Yes	Yes	Unclear	Unclear	Unclear	Yes	Yes	NR	22	Fair
Bestall, 2003 <sup>54</sup>	Yes	Yes	Unclear	Unclear	Unclear	Yes	Yes	NR	16	Fair
Bolton, 1991 <sup>51</sup>	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes	45	7	Fair
Breedland, 2011 <sup>33</sup>	Yes	Yes	No	No	Yes	Yes	Yes	NR	6	Good
Brown, 2002 <sup>15</sup>	Unclear	Unclear	No	No	Unclear	No	No	NR	NR	Poor
Brown, 2005 <sup>16</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	NR	NR	Poor
Buszewicz, 2006 <sup>34</sup>	Yes	Yes	Unclear	Unclear	Unclear	Yes	Yes	30	24	Fair
Chang, 2005 <sup>59</sup>	Yes	Unclear	No	No	No	Yes	Yes	17	13	Fair
Clemson, 2004 <sup>24</sup>	Yes	Unclear	No	No	Yes	Yes	Yes	NA*	15	Good
Deakin, 2006 <sup>71</sup>	Yes	Yes	Yes	No	No	Yes	Yes	20	32	Fair
De Greef, 2011 <sup>73</sup>	Yes	Yes	No	No	Yes	Yes	Yes	78	5	Good
Dejesus, 2009 <sup>77</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	No	Yes	13	55	Poor
Effing, 2011 <sup>55</sup>	Yes	Unclear	No	No	Unclear	Yes	Yes	41	11	Fair
Elzen, 2007 <sup>89</sup>	Unclear	Unclear	Unclear	Unclear	N/A	Yes	Yes	26	10	Poor
Ersek, 2003 <sup>97</sup>	Unclear	Unclear	Unclear	No	Unclear	Yes	Yes	NA*	13	Fair
Ettinger, 1997 <sup>22</sup>	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	53	17	Fair
Figar, 2006 <sup>65</sup>	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	NR	17	Good
Freeman, 2002 <sup>36</sup>	Unclear	Unclear	Unclear	Unclear	Yes	Unclear	Yes	94	23	Fair
Fu, 2003 <sup>90</sup>	Yes	No	No	No	No	Yes	Yes	NA*	13	Fair

Study	Selection: random sequence	Selection: allocation concealment	Blinding: participants	Blinding: personnel	Detection: assessors blinded	Attrition: address missing	Reporting: no selective reporting	Participation (% enrolled among eligible individuals)	Attrition (% loss to followup among N randomized)	Study quality (Good/Fair/Poor)
Giraudet-Le Quintrec, 2007 <sup>37</sup>	Yes	Yes	Unclear	Unclear	Yes	Unclear	Yes	18	9	Fair
Gustavsson, 2010 <sup>98</sup>	Yes	Yes	No	Yes	Yes	Yes	Yes	84	20	Good
Hammond, 1999 <sup>23</sup>	Unclear	Unclear	No	No	Yes	Yes	Yes	NR	31	Fair
Hammond, 2008 <sup>47</sup>	Yes	Yes	No	No	Unclear	Yes	Yes	46	37	Fair
Haugli, 2000 <sup>28</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	NR	33	Poor
Haugli, 2003 <sup>95</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	NA*	30	Poor
Hewlett, 2011 <sup>38</sup>	Yes	Yes	No	No	Yes	Yes	Yes	15	24	Good
Hornsten, 2008 <sup>17</sup>	Unclear	Unclear	No	No	No	Yes	Yes	NR	14	Fair
Kaplan, 1981 <sup>39</sup>	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes	NR	35	Poor
Khunti, 2012 <sup>68</sup>	Yes	Yes	Unclear	Unclear	Unclear	Yes	Yes	NA*	11	Good
Kulzer, 2007 <sup>72</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	50	6	Fair
Kunik, 2008 <sup>57</sup>	Yes	Yes	No	No	Yes	Yes	Yes	19	55	Good
Lorig, 1985 <sup>40</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	NA*	16	Fair
Lorig, 1999 <sup>41</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	NR	17	Poor
Lorig, 2003 <sup>91</sup>	Unclear	Unclear	Unclear	Unclear	Yes	Unclear	Yes	NR	51	Fair
Lorig, 2004 <sup>29</sup>	Yes	Unclear	No	Yes	Yes	Yes	Yes	84	32	Good
Lorig, 2009 <sup>69</sup>	Unclear	Unclear	No	No	Unclear	Yes	Yes	NA*	15	Fair
Lujan, 2007 <sup>78</sup>	Unclear	Unclear	No	No	Yes	Yes	Yes	NR	6	Fair
Melkus, 2010 <sup>13</sup>	Yes	Unclear	Unclear	Unclear	Unclear	Yes	Yes	NA*	11	Fair
Miller, 2002 <sup>79</sup>	Yes	Unclear	No	No	Unclear	Yes	Yes	NA*	6	Fair
Moore, 2006 <sup>58</sup>	Yes	Yes	No	No	No	Yes	Yes	50	19	Fair
Nessman, 1980 <sup>62</sup>	Unclear	Unclear	No	No	Unclear	Yes	Yes	36	0	Poor
Ninot, 2011 <sup>56</sup>	Yes	Yes	No	No	Yes	Yes	Yes	NA*	16	Good
Patel, 2009 <sup>35</sup>	Yes	Yes	Unclear	Unclear	Unclear	Yes	Yes	30	24	Fair
Philis-Tsimikas, 2011 <sup>18</sup>	Yes	Yes	No	No	Probably	No	Yes	NR	25	Poor
Raji, 2002 <sup>80</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	33	NR	Poor
Rickheim, 2002 <sup>74</sup>	No	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	NR	46	Poor
Riemsma, 2003 <sup>42</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	26	17	Fair

Study	Selection: random sequence	Selection: allocation concealment	Blinding: participants	Blinding: personnel	Detection: assessors blinded	Attrition: address missing	Reporting: no selective reporting	Participation (% enrolled among eligible individuals)	Attrition (% loss to followup among N randomized)	Study quality (Good/Fair/Poor)
Rosal, 2011 <sup>19</sup>	Yes	Unclear	No	No	Yes	Unclear	Yes	57	16	Fair
Rujiwatthanakorn, 2011 <sup>63</sup>	Yes	Yes	No	No	No	Yes	Yes	70	12	Poor
Ryan, 1996 <sup>46</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	NR	NR	Poor
Rygg, 2012 <sup>21</sup>	Yes	Yes	No	No	No	Unclear	Yes	91	9	Fair
Sarkadi, 2004 <sup>81</sup>	Yes	Yes	No	No	No	Unclear	Yes	92	17	Fair
Scain, 2009 <sup>82</sup>	Unclear	Unclear	No	No	No	Unclear	Yes	86	0	Fair
Scala, 2008 <sup>66</sup>	Yes	Unclear	No	No	Unclear	No	Yes	NR	42	Poor
Schillinger, 2009 <sup>30</sup>	Yes	Unclear	No	No	Unclear	Yes	Yes	73	10	Fair
Sevick, 2009 <sup>43</sup>	Yes	Yes	No	No	Yes	Yes	Yes	NR	20	Good
Sharifirad, 2012 <sup>83</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	NR	3	Poor
Shumway-Cook, 2007 <sup>25</sup>	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	88	5	Fair
Smeulders, 2010 <sup>60</sup>	Yes	Yes	No	No	Yes	Yes	Yes	44	16	Good
Smeulders, 2010 <sup>27</sup>	Yes	Yes	No	No	Yes	Yes	Yes	44	16	Good
Snyder, 1987 <sup>52</sup>	Unclear	Unclear	No	No	Unclear	Unclear	Unclear	NR	5	Poor
Sperl-Hillen, 2011 <sup>84</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	82	2	Fair
Steed, 2005 <sup>85</sup>	No	No	Unclear	Unclear	Unclear	Yes	Yes	51	16	Poor
Surwit, 2002 <sup>20</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	NR	24	Poor
Svetkey, 2009 <sup>26</sup>	Yes	Yes	No	No	Yes	Unclear	Unclear	56	12	Good
Taal, 1993 <sup>44</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	No	Yes	54	24	Poor
Toobert, 2011 <sup>86</sup>	Yes	No	Unclear	Unclear	Yes	Yes	Yes	61	22	Fair
Vlaeyen, 1996 <sup>96</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	NR	20	Fair
Weinger, 2011 <sup>14</sup>	Yes	Unclear	Unclear	Unclear	Unclear	Yes	Yes	89	3	Fair
Wilson, 1993 <sup>48</sup>	Yes	Yes	No	Yes	Yes	No	Yes	56	14	Fair
Wilson, 2008 <sup>53</sup>	Yes	Yes	No	No	Unclear	Unclear	Yes	60	NR	Fair
Zapotoczky, 2001 <sup>88</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	100	0	Poor

Abbreviations: NA = not applicable; NR = not reported.

\* Participation among all potentially eligible participants could not be calculated because subjects were recruited via community advertisement.

**Table C2. Total number of outcome measures reported in studies of group visit interventions focusing on education for the management of chronic disease**

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Taal, 1993 <sup>44</sup>	Arthritis	Anxiety/Depression	VAS	anxiety	20
				depression	
		Functional status or disability	DUTCH-AIMS, M-HAQ	disability	
				dexterity	
				household activities	
				physical activities	
		Health status	HbA1c (marker disease activity)	N/A	
		Pain	joint tenderness score (Richie et al. 1968)	N/A	
			VAS	arthritis impact pain	
		Self-efficacy	activities (Lorig et al. 1989)	N/A	
			endurance (Lorig et al. 1989)	N/A	
			exercise (Lorig et al. 1989)	N/A	
			function (five-point scale)	N/A	
other symptoms (five-point scale)	N/A				
pain (Lorig et al. 1989)	N/A				
relaxation (Lorig et al. (1989)	N/A				
VAS	social activities				
Biophysical	ESR	blood samples			
	thrombocytes	N/A			
Lorig, 2004 <sup>29</sup>	Arthritis	Anxiety/Depression	CESD	N/A	8
		Functional status or disability	ALS (role function)	N/A	
			HAQ	disability	
		Pain	VAS	N/A	
		Quality of life	global severity arthritis	N/A	
		Self-efficacy	ASES	N/A	
		Utilization	total MD visits (last 6 mo)	N/A	
total rheumatology visits (last 6 mo)	N/A				
Lorig, 1985 <sup>40</sup>	Arthritis	Exercise tolerance	exercise (#/mo)	N/A	7
			relaxation (#/mo)	N/A	
		Functional status or disability	Stanford Health Assessment Questionnaire (0-3 scale) disability	N/A	
		Pain	pain (0-3 scale)		
			VAS	N/A	
		Self-efficacy	knowledge (0-10 scale)	N/A	
		Utilization	total MD visits (last 4 mo)	N/A	
Kaplan, 1981 <sup>39</sup>	Arthritis	Psychometric	Human service scale 1	N/A	4
			Tennessee self-concept scale 1	N/A	
		Self-efficacy	knowledge	N/A	
		Anxiety/Depression	depression	N/A	

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined		
Hewlett, 2011 <sup>38</sup>	Arthritis	Pain	VAS	pain	13		
		Quality of life	RAQol	quality of life			
		Self-efficacy	AHI	N/A			
			RASE	N/A			
			VAS	coping			
		Anxiety/Depression	HADS	anxiety depression			
		Disease severity	VAS	disease activity			
		Fatigue	MAF	fatigue impact			
			VAS	fatigue impact			
		Functional status or disability	HAQ	disability			
PIHAQ	impact disability						
VAS	severity						
Hammond, 2008 <sup>47</sup>	Arthritis	Anxiety/Depression	HAQ	anxiety	21		
				psychological distress			
				depression			
		Exercise tolerance	self-management exercise	N/A			
		Fatigue	VAS	fatigue			
		Functional status or disability	early morning stiffness	N/A			
			HAQ	functional ability			
		Pain	VAS	pain			
		Self-efficacy	cognitive symptom management	N/A			
				AHI		helplessness perceived control	
				ASCQ		action contemplation maintenance pre-contemplation	
						ASES	Pain + other symptoms
						perceived health (scale (0-100))	N/A
RASE	N/A						
Self-efficacy/ Functional status	fatigue management (scale 1-6)			N/A			
	joint protection (scale 1-6)	N/A					
Utilization	total MD visits (last 6-12 mo)	N/A					
Breedland, 2011 <sup>33</sup>	Arthritis	Exercise tolerance	physical performance	aerobic capacity	8		
				muscle strength LE			
				muscle strength UE			
		Health status	Dutch-AIMS2 – health status	physical health			
				psychological health social interaction			
		Self-efficacy/ Functional status and disability/pain	ASES – self efficacy	function			
pain + other symptoms							

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Riemsma, 2003 <sup>42</sup>	Arthritis	Disease severity	DAS28 (disease activity)	N/A	20
		Exercise tolerance	health behavior (7 items on 5-point scale)	endurance exercises	
				physical exercises	
				relaxation exercises	
				self-management	
		Fatigue	VAS (fatigue)	N/A	
		Functional status or disability/pain	AIMS2	physical function	
				pain	
		Pain/Self-efficacy	CORS	coping with pain	
		Quality of life	AIMS2	health status: affect	
		Self-efficacy	social interactions (Revenson)	emotional support	
esteem support					
informational support					
Self-efficacy/ Functional status and disability/ Pain	SES	overprotection			
		problematic support			
		tangible support			
	CORS	coping with limitations			
		self-efficacy: other symptoms (depression, fatigue, frustration)			
		self-efficacy: function			
		self-efficacy: pain			
Giraudet-Le Quintrec, 2007 <sup>37</sup>	Arthritis	Anxiety/Depression	HADS	anxiety	16
				depression	
		Disease severity	DAS28 (disease activity)	N/A	
		Exercise tolerance	Baecke questionnaire	physical activity	
		Fatigue	FACIT-F	N/A	
		Knowledge	rheumatoid arthritis knowledge (10-item)	N/A	
		Patient satisfaction	satisfaction with the program (Likert scale)	N/A	
		Quality of life	EMIR (AIMS2)	physical	
				psychological	
				social	
	HAQ	symptomatic			
		work			
		quality of life: unweighted			
		quality of life: with weighting			
Self-efficacy	AHI (coping)	N/A			
Utilization	EURIDISS	drug compliance			
Sevick, 2009 <sup>43</sup>	Arthritis	Biophysical	BMI	N/A	7
		Functional status, pain, disability	WOMAC	degree of difficulty	
				function	
				stiffness	
				pain	
Physical performance	6MWT	stair climb			
			N/A		

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined	
Barlow, 2000 <sup>32</sup>	Arthritis	Anxiety/Depression	HADS	anxiety	12	
				depression		
			HADS, PANAS	psychologic well-being		
		Fatigue; pain	VAS	fatigue		
				pain		
		Pain/Self-efficacy	ASE	pain		
		Quality of life	PANAS	negative affect		
				positive affect		
Self-efficacy	ASE	other symptoms				
	HAQ (dietary habit)	N/A				
Utilization	communication with physician	N/A				
Buszewicz, 2006 <sup>34</sup>	Arthritis	Pain	ASE	other	8	
				pain		
			WOMAC	pain		
		Quality of life	SF-36	mental health		
		Functional status or disability	WOMAC	physical function		
				stiffness		
		Quality of life	SF-36	physical health		
Anxiety/Depression	HADS	anxiety				
		depression				
Freeman, 2002 <sup>36</sup>	Arthritis	Functional status or disability	28 JC	N/A	12	
			EMS	N/A		
		Pain	ESR (duration of early morning stiffness)	N/A		
			VAS	N/A		
		Quality of life	AIMS2	affect		
				current health		
				physical functional ability		
				symptoms		
		Self-efficacy	ASES	N/A		
			RAI	helplessness		
	internality					
		TSES	N/A			
Ettinger, 1997 <sup>22</sup>	Arthritis	Exercise tolerance	aerobic capacity (0-3 Likert scale)	N/A	10	
			aerobic training	N/A		
			knee pain (1-6 Likert scale)	N/A		
			physical performance	endurance		
				distance (6MWT)		
				mobility		
				strength		
				resistance training		N/A
		Functional status or disability	self-reported disability (FAST, Likert scale)	N/A		
		Utilization	x-ray	N/A		

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Hammond, 1999 <sup>23</sup>	Arthritis	Functional status or disability	HAQ	functional ability	11
			HJAM (range of movement and joint deformity)	N/A	
		Pain	HAQ	hand pain	
			HJC (number of painful/tender hand joints)	N/A	
			VAS (hand pain)	N/A	
		Physical performance	grip strength	N/A	
		Self-efficacy	AHI	N/A	
			ASES	N/A	
			JP (self-reported homework)	N/A	
			JPBA (joint protection behavior)	N/A	
JPKA (knowledge)	N/A				
Lorig, 1999 <sup>41</sup>	Arthritis	Anxiety/Depression	CESD	depression	9
		Exercise tolerance	aerobic exercise	N/A	
			range of motion exercise	N/A	
		Functional status or disability	HAQ	disability	
		Pain	VNS (modified VAS)	pain	
		Quality of life	MOS	general health/self-rated health	
		Self-efficacy	HAQ	self-efficacy	
		Utilization	MD visits (last 6 mo)	N/A	
medication use (NSAIDs)	N/A				
Patel, 2009 <sup>35</sup>	Arthritis	Costs	VAS	costs to patient, family, friends	11
				indirect costs	
				social care costs	
				total costs, societal perspective	
				total health costs	
				Pain	
		Quality of life	EuroQol: VAS	quality of life	
			QALYs	quality adjusted life years	
			SF-36	mental health	
				physical health	
		cost effective on basis of QoL			

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Ackerman, 2012 <sup>31</sup>	Arthritis	Pain	WOMAC	pain	15
		Quality of life	AQoL	arthritis related quality of life	
			heiQ	acquisition	
				activity	
				attitudes/approaches	
				emotional distress	
		engagement			
		health service navigation			
self-monitoring					
social integration/support					
HRQOL	health related quality of life				
Health status	MAPT (arthritis disease severity)	N/A			
Functional status or disability	WOMAC	physical function			
		stiffness			
Anxiety/Depression	K10 (distress)	N/A			
Wilson, 1993 <sup>48</sup>	Asthma	Exercise tolerance	change in ph. activity (1 year)	N/A	8
			Health status	# symptomatic days (1 year)	
		asthma status (5 mo)		N/A	
		relative “bother” (1 year)		N/A	
		Self-management	improved MDI technique (1 year)	N/A	
			improvements bedr. environment (1 year)	N/A	
Utilization	acute visit rates	N/A			
	difference in acute visit rates	N/A			
Abdulwadud, 1999 <sup>49</sup>	Asthma	Quality of life	AQLQ	breathlessness	7
				concern for health	
				mood disturbance	
				social disruption	
		Self-efficacy	AGKQ	knowledge	
HAAS	self-mgmt: rapid onset				
		self-mgmt: slow onset			
Allen, 1995 <sup>50</sup>	Asthma	Biophysical	FEV/FVC	adequacy of medical treatment	4
				morbidity	
		Self-management	compliance with meds	N/A	
Self-efficacy	knowledge	N/A			
Bolton, 1991 <sup>51</sup>	Asthma	Functional status or disability	days of limited activity	N/A	4
				Utilization	
		hospitalization	N/A		
		physician visits	N/A		
Kritikos, 2007 <sup>101</sup>	Asthma	Disease Severity	asthma severity	N/A	6
		Quality of life	AQLQ	total quality of life	
		Self-management	MARS	medication adherence	
		Self-efficacy	CQ	knowledge	
			optimal DPI	N/A	
optimal MDI	N/A				

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Snyder, 1987 <sup>52</sup>	Asthma	Disease severity	symptom severity	N/A	4
		Self-efficacy	ASES	self-efficacy	
			attitudes about asthma (AASA 24-item)	N/A	
			BIQ (knowledge)		
Wilson, 2008 <sup>53</sup>	COPD	Quality of life	MRC (dyspnea)	N/A	4
		Self-efficacy	abstinence from smoking validation, self-report (IC)	N/A	
			HSI (addiction)	N/A	
			stages of change (5 categories: pre-contemplation, contemplation, preparation, action, ex-smoker)	N/A	
Kunik, 2008 <sup>57</sup>	COPD	Exercise tolerance	6MWT	N/A	18
		Quality of life	BAI	anxiety	
			BDI-II	depressive symptoms	
			CRQ	Qol: fatigue	
				Qol: mastery	
				Qol: dyspnoea	
				Qol: emotion	
			SF-36	emotional composite	
				general health	
				mental health	
				pain	
				physical composite	
				physical function	
role-emotionally					
role-physical					
social function					
vitality					
Utilization	use of health services	N/A			
Bestall, 2003 <sup>54</sup>	COPD	Anxiety/Depression	HADS	anxiety	12
			depression		
		Exercise tolerance	shuttle walking		
			walking distance		
		Quality of life	CRDQ (7-pt Likert scale)	emotional function	
				fatigue	
				mastery	
				dyspnoea	
			SGRQ	health status: activity	
				health status: impacts	
health status: symptoms					
Self-efficacy	EADL	N/A			

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Donesky-Cuenco, 2009 <sup>102</sup>	COPD	Biophysical	FEVI/FVC	N/A	16
		Quality of life	SF-36	mental component physical component	
		Quality of life/ Functional status or disability	FPI total	functional performance	
		Self-efficacy	CRQ	mastery	
		Anxiety	SSAI	N/A	
		Anxiety/Depression	CESD	N/A	
		Exercise tolerance	incremental cycle (ergometry)	N/A	
			hamstring flex tq/bw 180	N/A	
			hamstring flexion tq/bw 90	N/A	
			quads extension tq/bw 180	N/A	
			quads extension tq/bw 90	N/A	
		Fatigue	CRQ	fatigue	
		Quality of life	CRQ	emotional	
CRQ (Borg) dyspnea	N/A				
FEVI (lung function)	N/A				
Effing, 2011 <sup>55</sup>	COPD	Anxiety/Depression	HADS	anxiety depression	14
		Biophysical	FFM	N/A	
		Exercise tolerance	CRQ	dyspnoea	
			ESWT	distance	
			ISWT	distance	
			max exercise capacity	N/A	
			steps per day (pedometer)	N/A	
		Fatigue	CRQ	fatigue	
		Quality of life	CCQ	functional state mental state symptoms emotional function	
			Self-efficacy	CRQ	
Exercise tolerance	6MWD		N/A		
	daily physical activity (Voorrips)		N/A		
	Quality of life	HRQoL	N/A		
SGRQ		health status: impacts			
		health status: symptoms			
		health status: total			
		health status: activity			
utilization		N/A			
VAS		dyspnea			
NHP		physical mobility			
pulmonary function	N/A				
Quality of life/Pain	NHP	pain			
		sleep			
		energy			
		social isolation			
		emotional reaction			
Ninot, 2011 <sup>56</sup>	COPD	Exercise tolerance	6MWD	N/A	16
			daily physical activity (Voorrips)	N/A	
		Quality of life	HRQoL	N/A	
			SGRQ	health status: impacts	
				health status: symptoms	
				health status: total	
				health status: activity	
			utilization	N/A	
			VAS	dyspnea	
			NHP	physical mobility	
		pulmonary function	N/A		
		Quality of life/Pain	NHP	pain	
				sleep	
energy					
social isolation					
emotional reaction					

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Fu, 2003 <sup>90</sup>	COPD, multiple morbidity	Fatigue	fatigue	N/A	13
		Functional status or disability	disability	N/A	
		Health behavior	aerobic exercise	N/A	
		Health status	depression	N/A	
			health distress	N/A	
			pain	N/A	
			self-rated health	N/A	
			shortness of breath	N/A	
		social and role activity limitations	N/A		
Self-management	cognitive symptom management	N/A			
Self-efficacy	Self-efficacy in self-management	managing symptoms managing disease in general			
Utilization	hospital stays	N/A			
Dejesus, 2009 <sup>77</sup>	Diabetes	Biophysical	DBP	N/A	3
			SBP	N/A	
		Utilization	# of MD and RN visits	N/A	
Elzen, 2007 <sup>89</sup>	Diabetes, multiple morbidity	Exercise tolerance	self-management behavior: frequency of exercise	N/A	12
		Quality of life	RAND-36	general health	
				physical functioning	
				role limitations (physical problem)	
				physical component: pain	
				mental health	
				role limitations (emotional problem)	
social functioning					
vitality					
Self-efficacy	GSES-16	self-efficacy			
	self-management behavior: cognitive symptom mgmt	N/A			
Utilization	communication with physician	N/A			
Lorig, 2003 <sup>91</sup>	Diabetes, multiple morbidity	Anxiety/Depression	health status: health distress	N/A	13
		Exercise tolerance	behavior: exercise (total min per week)	N/A	
		Fatigue	health status: fatigue	N/A	
		Functional status or disability	health status: role function	N/A	
		Health status	health status: self-reported health	N/A	
		Pain	health status: pain?	N/A	
		Self-efficacy	behavior: current use tobacco	N/A	
			behavior: mental stress mgmt	N/A	
			self-efficacy (4-item scale)	N/A	
		Utilization	communication with physician (4-item scale)	N/A	
ER visits	N/A				
hospital days	N/A				
physician visits	N/A				

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined	
Weinger, 2011 <sup>14</sup>	Diabetes	Anxiety/Depression	Depression (Brief Symptom Inventory-18)	N/A	12	
			diabetes-related distress (5-point Likert scale)	N/A		
		Biophysical	BMI	N/A		
			HbA1c	N/A		
			HDL cholesterol	N/A		
			LDL cholesterol	N/A		
		Exercise tolerance	mean 3-day pedometer	N/A		
		Quality of life	diabetes (100-point scale)	N/A		
		Self-management	glucose meter checks	N/A		
		Self-efficacy	controlled coping styles	N/A		
self-care inventory (5-point Likert scale)	N/A					
self-efficacy (5-point Likert scale)	N/A					
Khunti, 2012 <sup>68</sup>	Diabetes	Anxiety/Depression	HADS	N/A	27	
		Biophysical	blood pressure	N/A		
			BMI	N/A		
			diastolic BP	N/A		
			HbA1c	N/A		
			HDL cholesterol	N/A		
			LDL cholesterol	N/A		
			systolic BP	N/A		
			total cholesterol	N/A		
			triglycerides	N/A		
			UKPDS 10 yr CHD risk	N/A		
			Waist circumference	N/A		
			Health behavior	physical activity		N/A
		smoking status		N/A		
		Health status	Problem areas in diabetes questionnaire (emotional distress)	N/A		
		Quality of life	WHO QOL-BREF	main scale		
				health satisfaction		
				physical QOL		
				psychological QOL		
				social QOL		
		Self-efficacy	IPQ-R	perceived knowledge (coherence)		
				perceived illness duration (timeline)		
				perceived self control		
				perceived seriousness		
				perceived impact		

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Adolfsson, 2007 <sup>75</sup>	Diabetes	Biophysical	BMI	N/A	6
			HbA1c	N/A	
			weight	N/A	
		Knowledge	VAS scale (confidence in DM knowledge)	N/A	
		Quality of life	Satisfaction with daily life (adapted WHO QOL)	N/A	
		Self-efficacy	10-item questionnaire	N/A	
Anderson, 2005 <sup>76</sup>	Diabetes	Attitudes	seriousness of diabetes (Diabetes Attitude Scale-3)	N/A	10
		Biophysical	diastolic BP	N/A	
			HbA1c	N/A	
			serum cholesterol	N/A	
			systolic BP	N/A	
			weight	N/A	
		Knowledge	perceived understanding of diabetes	N/A	
Self-efficacy	DES-SF (psychosocial self-efficacy)	N/A			
Social and psychological factors	Diabetes Care Profile (DCP)	negative attitude positive attitude			
Brown, 2005 <sup>16</sup>	Diabetes	Biophysical	FBG (fasting blood glucose)	N/A	3
			HbA1c	N/A	
		Knowledge	diabetes knowledge	N/A	
Brown, 2002 <sup>15</sup>	Diabetes	Biophysical	BMI	N/A	13
			cholesterol	N/A	
			FBG	N/A	
			HbA1c	N/A	
			height	N/A	
			triglycerides	N/A	
			weight	N/A	
		Knowledge	diabetes knowledge	N/A	
		Self-efficacy	health beliefs: barriers	N/A	
			health beliefs: benefits	N/A	
			health beliefs: control	N/A	
health beliefs: impact of job	N/A				
		health beliefs: social support	N/A		
Davies, 2008 <sup>70</sup>	Diabetes	Biophysical	BMI	N/A	11
			DBP	N/A	
			HbA1c	N/A	
			HDL	N/A	
			LDL	N/A	
			SBP	N/A	
			total cholesterol	N/A	
			triglycerides	N/A	
		waist circumference	N/A		
		Health behavior	physical activity	N/A	
smoking status	N/A				

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined			
De Greef, 2011 <sup>73</sup>	Diabetes	Biophysical	BMI	N/A	10			
			FBG	N/A				
			HbA1c	N/A				
			tape measure cm (narrowest part of the torso)	N/A				
			total cholesterol	N/A				
		Health behavior	IPAQ (self-reported PA)	min/day housekeeping and gardening		min/day housekeeping and gardening min/day moderate-to-vigorous PA min/day total PA min/day walking during leisure time steps/day		
				min/day moderate-to-vigorous PA				
				min/day total PA				
				min/day walking during leisure time				
D'Eramo Melkus, 2010 <sup>13</sup>	Diabetes	Anxiety	psychosocial	PAID	25			
		Biophysical	DSP	N/A				
			physiological	HbA1c		N/A		
				FBG				
				weight				
				LDL cholesterol				
			HDL cholesterol					
		SBP	N/A					
		TG	N/A					
		Health behavior	physiological	Current smoker				
		Pain	psychosocial	pain				
		Psychosocial	role-physical	N/A				
		Quality of life	psychosocial	QOL				
		Self-efficacy	psychosocial	diabetes self-efficacy				
		Functional status or disability	physical function	N/A				
		Health status	general health	N/A				
			vitality	N/A				
			mental health	somatic anxiety				
		Psychosocial	social function	N/A				
			role-emotional	N/A				
		Support	provider support	diet				
				exercise				
				knowledge				
				support				
		Hornsten, 2008 <sup>17</sup>	Diabetes	Biophysical		BMI	N/A	8
						DBP	N/A	
						HbA1c	N/A	
						HDL	N/A	
LDL	N/A							
SBP	N/A							
total cholesterol	N/A							
triglycerides	N/A							

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Kulzer, 2007 <sup>72</sup>	Diabetes	Anxiety	trait-anxiety symptoms	N/A	16
		Biophysical	BMI	N/A	
			cholesterol	N/A	
			FBG	N/A	
			HbA1c	N/A	
			HDL cholesterol	N/A	
			triglycerides	N/A	
			weight	weight	
		Health behavior	exercise	N/A	
			Three Factor Eating Questionnaire	cognitive restraint of eating	
				hunger inhibition	
		Knowledge	diabetes knowledge	N/A	
Self-efficacy	foot care	N/A			
	negative well-being	N/A			
	self care: urine or blood glucose self-test	N/A			
Lorig, 2009 <sup>69</sup>	Diabetes	Anxiety/Depression	PHQ-9	N/A	17
		Biophysical	HbA1c	N/A	
			weight	N/A	
		Health behavior	aerobic exercise	N/A	
			communication with physician	N/A	
			glucose monitoring	N/A	
			healthy eating	N/A	
		Health status	read food labels	N/A	
			fatigue (VNS)	N/A	
			self-reported global health (NHS)	N/A	
		Self efficacy	symptoms of hyperglycemia	N/A	
			PAM	N/A	
		Utilization	diabetes self-efficacy scale	N/A	
			days in hospital	N/A	
			emergency visits	N/A	
physician visits	N/A				
Lujan, 2007 <sup>78</sup>	Diabetes	Biophysical	HbA1c (Bayer 2000 analyzer)	N/A	3
		Knowledge	DKQ (diabetes knowledge)	N/A	
		Self-efficacy	DHBM (diabetes health belief)	N/A	
Philis-Tsimikas, 2011 <sup>18</sup>	Diabetes	Biophysical	BMI	N/A	8
			DBP	N/A	
			HbA1c	N/A	
			HDL	N/A	
			LDL	N/A	
			SBP	N/A	
			total cholesterol	N/A	
			triglycerides	N/A	
Raji, 2002 <sup>80</sup>	Diabetes	Biophysical	BMI	N/A	2
			HbA1c	N/A	

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined	
Rickheim, 2002 <sup>74</sup>	Diabetes	Attitudes	ATT-19 (psychosocial adjustment and attitudes towards diabetes)	N/A	10	
		Biophysical	BMI	N/A		
			HbA1c	N/A		
			weight	N/A		
		Health behavior	exercise duration	N/A		
			exercise frequency	N/A		
		Knowledge	knowledge	N/A		
Quality of life	SF-36	mental health				
		physical health				
Self-efficacy	goal achieved	N/A				
Rosal, 2011 <sup>19</sup>	Diabetes	Biophysical	BMI	N/A	19	
			DBP	N/A		
			HbA1c	N/A		
			HDL cholesterol	N/A		
			LDL cholesterol	N/A		
			SBP	N/A		
			triglycerides	N/A		
			waist circumference	N/A		
		Health behavior	Alternative healthy eating index	N/A		
			sitting	N/A		
			total kcal	% fat		
				% SFA		
				% carbohydrates		
			total physical activity	N/A		
		walking	N/A			
		Health status	Diabetes medication intensity score	N/A		
		Knowledge	Audit of Diabetes Knowledge	N/A		
Self-efficacy	Study specific scale	diet and physical activity change				

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Rygg, 2012 <sup>21</sup>	Diabetes	Biophysical	BMI	N/A	22
			Creatinine	N/A	
			DBP	N/A	
			HbA1c	N/A	
			HDL	N/A	
			SBP	N/A	
			total cholesterol	N/A	
			triglycerides	N/A	
			weight	N/A	
			Knowledge	diabetes knowledge test	
		Psychosocial	PAID - problem areas in diabetes	N/A	
		Quality of life	EQ-5D (VAS)	N/A	
			SF-36	physical mental health	
		Self-efficacy	PAM	N/A	
		Self-management	avoidance fatty foods	N/A	
			blood glucose monitoring	N/A	
foot care	N/A				
high vegetable intake	N/A				
Treatment satisfaction	DTSQ	N/A			
Utilization	medication (oral glucose lowering agents/insulin)	N/A			
	Utilization	N/A			
Sarkadi, 2004 <sup>81</sup>	Diabetes	Biophysical	BMI	N/A	2
			HbA1c	N/A	
Scain, 2009 <sup>82</sup>	Diabetes	Biophysical	BMI	N/A	10
			DBP	N/A	
			FBG	N/A	
			HbA1c	N/A	
			HDL cholesterol	N/A	
			SBP	N/A	
			total cholesterol	N/A	
			triglycerides	N/A	
			waist-hip ratio	N/A	
			Knowledge	knowledge	
Schillinger, 2009 <sup>30</sup>	Diabetes	Biophysical	BMI	N/A	14
			DBP		
			HbA1c	NA	
			SBP		
		Functional status or disability	bed days	N/A	
			restricted activity	N/A	
		Health behavior	moderate physical activity	N/A	
			vigorous exercise	N/A	
		Quality of life	SF-12	physical health	
				mental health	
		Self-efficacy	behavioral	self-management	
DQIP (diabetes self-efficacy)	NA				
interpersonal processes of care	summary scale				
Treatment satisfaction	patient assessment of chronic illness care	summary scale			

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined	
Sharifirad, 2012 <sup>83</sup>	Diabetes	Biophysical	BMI	N/A	9	
			DBP	N/A		
			HbA1C	N/A		
			HDL - cholesterol	N/A		
			LDL - cholesterol	N/A		
			SBP	N/A		
			triglycerides	N/A		
			weight	N/A		
			WHR	N/A		
Sperl-Hillen, 2011 <sup>84</sup>	Diabetes	Anxiety/Depression	PAID (diabetes distress)	N/A	17	
		Quality of life	SF-12	mental health		
				physical health		
		Biophysical	DBP	N/A		
				HbA1c		N/A
				SBP		N/A
				weight		N/A
		Health behavior	BRFSS	physical activity score		
		Self-efficacy	RFS (food summary score)	N/A		
				DCP		care ability
						importance of care
negative attitude						
positive attitude						
support attitudes						
support received						
understanding						
DES-SF	N/A					
Steed, 2005 <sup>85</sup>	Diabetes	Biophysical	HbA1c	N/A	20	
		Health beliefs	beliefs	seriousness		
				treatment effectiveness		
				personal control		
		Knowledge	Knowledge	N/A		
		Mental health	HADS	mood		
				PANAS		negative affect
						positive affect
		Quality of life	ADDQOL	N/A		
			SF-36	N/A		
		Self-efficacy	MDS: multidimensional diabetes scale	total		
				diet		
				HBGM		
exercise						
Self-management	Revised summary of self care diabetes activities measure	N/A				
		diet				
		HBGM				
		foot care				
smoking						

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Toobert, 2011 <sup>86</sup>	Diabetes	Biophysical	HbA1c	N/A	12
			Health behavior	% calories saturated fat	
		Chronic illness resources survey total score		N/A	
		physical activity (IPAQ)		N/A	
		smoking prevalence		N/A	
		stress management daily practice		N/A	
		Health status		UKPDS CHD	
		Problem solving ability	diabetes problem solving interview	N/A	
		Quality of life	CDC Healthy Days measure	physical health mental health	
		Self-efficacy	COCS	N/A	
Social support	UCLA social support inventory	N/A			
Toobert, 2011 <sup>87</sup>	Diabetes	Biophysical	HbA1c	N/A	10
			Health behavior	Chronic illness resources survey total score	
		stress management daily practice		N/A	
		% calories saturated fat		N/A	
		Physical activity (IPAQ)		N/A	
		Health status	UKPDS CHD	N/A	
		Problem solving ability	diabetes problem solving interview	N/A	
		Self-efficacy	COCS	N/A	
Social support	UCLA social support inventory	N/A			
Zapotozky, 2001 <sup>88</sup>	Diabetes	Biophysical	Cholesterol	N/A	7
			DBP	N/A	
			HbA1c	N/A	
			HDL cholesterol	N/A	
			LDL cholesterol	N/A	
			SBP	N/A	
			triglycerides	N/A	
Surwit, 2002 <sup>20</sup>	Diabetes	Anxiety	STAI	trait state	8
		Anxiety/Depression	PSS	N/A	
		Biophysical	BMI	N/A	
			HbA1c	N/A	
		Health behavior	Dietary intake	N/A	
		Health status	DASI	N/A	
GHQ	N/A				
Miller, 2002 <sup>79</sup>	Diabetes	Biophysical	Fasting plasma glucose	N/A	6
			HbA1c	N/A	
			HDL cholesterol	N/A	
			LDL cholesterol	N/A	
			total cholesterol	N/A	
			triglycerides	N/A	

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Smeulders, 2009 <sup>103</sup> and 2010 <sup>27,60</sup>	Heart failure	Anxiety/Depression	HADS	anxiety	21
				depression	
		Quality of life	RAND-36 and KCCQ RAND-36 KCCQ (cardiac-specific)	C-QoL sum score	
				G-QoL mental	
				G-QoL physical	
				N/A	
		Self-efficacy	cognitive symptom management (Lorig et al. 1996) EHFScBS perceived control (mastery scale by Pearlin and Schooler 1978) VAS GSES two sub-scales CSEQ health behavior: drinking health behavior: smoking	N/A	
				self-care behavior	
				N/A	
				perceived autonomy	
				general self-efficacy	
				cardiac self-efficacy	
				N/A	
				N/A	
Functional status or disability	TICS (cognitive status)	N/A			
Biophysical	BMI	N/A			
Exercise tolerance	bicycling other swimming walking	N/A			
		N/A			
		N/A			
		N/A			
Utilization	number of MD and RN contacts	N/A			
Andryukhin, 2010 <sup>104</sup>	Heart failure	Anxiety/Depression	HADS	anxiety	16
				depression	
		Biophysical	blood glucose BMI CRP LASI LDL LVDVI LVMI NT-proBNP total cholesterol	N/A	
				N/A	
		Exercise tolerance	6MWT waist circumference	N/A	
				N/A	
		Quality of life	MLHFQ	emotional health	
physical health					
total level					
Chang, 2005 <sup>59</sup>	Heart failure	Exercise tolerance	VO2max	N/A	5
		Quality of life	MLwHF	emotional health	
				physical health	
				peace and faith	
strength (spiritual)	N/A				

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Moore, 2006 <sup>58</sup>	Heart failure	Anxiety/Depression	Depression/Dejection Scale	N/A	18
			Exercise tolerance	exercise amount	
		exercise frequency		N/A	
		exercise maintenance		N/A	
		6MWT		N/A	
		Functional status or disability	cardiac functional status	N/A	
			NYHA (cardiac functional status)	N/A	
		Pain	pain	N/A	
		Self-efficacy	benefits barriers: benefits	N/A	
			benefits barriers: barriers	N/A	
			benefits barriers: total	N/A	
			problem-solving inventory	N/A	
			total problem solving	N/A	
self-efficacy: barriers	N/A				
ASES (adherence)	N/A				
ISR	N/A				
SSES - social support	friends				
	family				
Nessman, 1980 <sup>62</sup>	Hypertension	Self-efficacy	attendance	N/A	5
			pill count	N/A	
			test questions	N/A	
		Utilization	communications	N/A	
Biophysical	blood pressure	N/A			
Rujiwatthanakorn, 2011 <sup>63</sup>	Hypertension	Biophysical	BP diastolic	N/A	9
			BP systolic (Mate) (oscillometrics)	N/A	
		Exercise tolerance	SCABPCQ	self-care ability: aerobic exercise	
			Self-efficacy	KSCDQ	
		SCABPCQ - self-care ability		dietary control	
				medication taking	
risk behavior avoidance					
self-monitoring					
stress mgmt					
Baghiani-moghadam, 2010 <sup>67</sup>	Hypertension	Self-efficacy	Beliefs, Attitude, Subjective Norms, Enabling Factors (BASNEF) model	Attitude	5
				Subjective norms	
				Intention	
				Enabling factors	
				Self-monitoring	

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Balcazar, 2009 <sup>64</sup>	Hypertension	Anxiety	acculturative stress	N/A	14
			stress due to migration	N/A	
		Biophysical	BMI	N/A	
			waist circumference (inches)	N/A	
		Self-efficacy	family cohesiveness	N/A	
			Glindex score/acculturation	N/A	
			cholesterol and fat healthy habits	N/A	
			perceived barriers	N/A	
			perceived benefits	N/A	
			perceived severity	N/A	
			perceived susceptibility	N/A	
			salt and sodium healthy habits	N/A	
			self-efficacy	N/A	
weight control healthy habits	N/A				
Burke, 2008 <sup>105</sup>	Hypertension	Biophysical	blood lipids	N/A	26
			BMI	N/A	
			BP ambulatory	N/A	
			diastolic BP	N/A	
			glucose	N/A	
			HDL cholesterol	N/A	
			HOMA-IR (insulin)	N/A	
			insulin	N/A	
			systolic BP	N/A	
			total cholesterol	N/A	
			triglycerides	N/A	
			Exercise tolerance	physical activity	
		Self-efficacy	alcohol intake	N/A	
			calcium	N/A	
			diet	N/A	
			energy	N/A	
			fiber	N/A	
			magnesium	N/A	
			mono fat	N/A	
			poly fat	N/A	
			potassium	N/A	
			protein	N/A	
			sat fat intake	N/A	
sodium	N/A				
total fat	N/A				

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Figar, 2006 <sup>65</sup>	Hypertension	Biophysical	ABPM	day-time diastolic BP	11
				diastolic BP at program office	
				night-time diastolic BP	
				total diastolic BP	
			change in systolic BP	N/A	
			day-time systolic BP (6am-8pm)	N/A	
			night-time systolic BP (8:01 pm- 5:59am)	N/A	
			potassium excretion	N/A	
			sodium excretion	N/A	
			systolic BP at program office	N/A	
total systolic BP	N/A				
Pierce, 1984 <sup>106</sup>	Hypertension	Biophysical	BP reduction diastolic	N/A	6
			BP reduction systolic	N/A	
		Health status	clinician assessment	medication strength	
			clinician assessment	BP severity	
		Self-efficacy	daily monitoring	N/A	
			health education	N/A	
Scala, 2008 <sup>66</sup>	Hypertension	Biophysical	DBP	N/A	7
			SBP	N/A	
		Exercise tolerance	daily physical activity	N/A	
		Self-efficacy	drug/alcohol/consumption	N/A	
			quantity of natural water consumption	N/A	
			salt intake	N/A	
			weight control	N/A	
Svetkey, 2009 <sup>26</sup>	Hypertension	Biophysical	change in DBP	N/A	10
			change in SBP	N/A	
			FBG and lipids	N/A	
			urinary sodium	N/A	
			weight	N/A	
		Exercise tolerance	physical activity	N/A	
		Self-efficacy	dairy (servings/day)	N/A	
			dietary pattern	N/A	
			sat fat	N/A	
			total fat	N/A	
Clemson, 2004 <sup>24</sup>	History of falls	Anxiety	Worry scale	N/A	7
		Functional status or disability	PASE (physical activity)	N/A	
		Quality of life	SF-36	mental health	
				physical health	
		Self-efficacy	mobility efficacy scale (MES)	falls	
			modified falls efficacy scale (MFES)	falls	
FaB scale (behaviors fall prevention)	N/A				

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Arnold, 2008 <sup>107</sup>	History of falls	Falls	falls-efficacy	N/A	9
		Physical performance	(hip abduction strength)	N/A	
			6MWT (gait)	N/A	
			BBSm (balance)	N/A	
			lower body strength	N/A	
			max step length	N/A	
			MCTSIB (balance function)	N/A	
			ROM (hip flexion range of motion)	N/A	
TUG (mobility)	N/A				
Shumway-Cook, 2007 <sup>25</sup>	History of falls	Falls	fall incidence rates	N/A	4
		Functional status or disability	mobility	N/A	
		Physical performance	balance	N/A	
strength	N/A				
Arnold, 2010 <sup>45</sup>	History of falls	Falls efficacy	ABC (balance)	N/A	7
		Functional status or disability	AIMS-2 (daily function)	N/A	
			PASE (physical activity)	N/A	
		Physical performance	6MWT	N/A	
			BBS (balance)	N/A	
			chair stands	N/A	
TUG (mobility)	N/A				
Ryan, 1996 <sup>46</sup>	History of falls	Falls	N fall events including descriptions	N/A	3
			N fall prevention changes implemented	N/A	
			type of fall prevention changes made	N/A	
Ersek, 2003 <sup>97</sup>	Pain	Anxiety/Depression	GDS	N/A	8
		Functional status or disability	SF-36	physical functioning	
				role-physical	
		Pain	GCPS	pain intensity	
				related activity interference	
SOPA	pain-related beliefs-SOPA control				
	pain-related beliefs-SOPA harm				
	pain-related beliefs-SOPA medical care				
Vlaeyen, 1996 <sup>96</sup>	Pain	Anxiety	FSS-III-R (fear)	N/A	12
			PCL, CSQ (catastrophizing)	N/A	
		Anxiety/Depression	BDI	N/A	
		Health status	MOCI (obsessive-compulsive)	N/A	
		Pain	BAT (activity)	N/A	
			CSQ	relaxation	
				pain coping	
			CSQ, MPLC	pain control	
			MPQ (pain intensity)	N/A	
		UAB, CHIP, BAT (pain behavior)	N/A		
Quality of life/Pain	tension	N/A			
Self-efficacy	knowledge	N/A			

Study	Clinical area	Category	Outcomes/Measures	Subscale	Total outcomes examined
Gustavsson, 2010 <sup>98</sup>	Pain	Anxiety	CSQ	catastrophizing	14
			FABQ fear (work place)	N/A	
			HADS	anxiety	
		Anxiety/Depression	HADS	depression	
		Functional status or disability	NDI (neck disability)	N/A	
		Pain	NDI (analgesics due to neck pain)	N/A	
			VAS	average (pain scale)	
				present (pain scale)	
				worst (pain scale)	
		Self-efficacy	CSQ	ability to control pain	
				ability to reduce pain	
N/A					
	SES	N/A			
Utilization	satisfaction with care/treatment (5-pt scale)	N/A			
Haugli, 2003 <sup>95</sup>	Pain	Anxiety/Depression	General Health Questionnaire (GHQ)	psychological distress	4
		Health status	GHQ	group status	
				sick leave	
			days absent due to pain (last 6 mo)	N/A	
		Pain	VAS	pain	
				pain coping	
Self-efficacy	VAS	management of daily life			

## APPENDIX D. PEER REVIEW COMMENTS AND RESPONSES

Reviewer	Comment	Response
<b><i>Q1. Are the objectives, scope, and methods for this review clearly described?</i></b>		
1	Yes. (No comment)	Noted.
2	Yes. (No comment)	Noted.
3	Yes. (No comment)	Noted.
4	Yes. (No comment)	Noted.
5	Yes. Detailed table of contents. Objectives are listed in the Executive Summary under the background information.	Noted.
6	Yes. (No comment)	Noted.
7	Yes. There was not really enough evidence but perhaps a weakness is that the groups run by peers and professionals could not be separated	Noted.
8	Yes. (No comment)	Noted.
9	Yes. Absolutely, very inclusive	Noted.
10	Yes. (No comment)	Noted.
<b><i>Q2. Is there any indication of bias in our synthesis of the evidence?</i></b>		
1	No. No evidence for bias.	Noted.
2	No. (No comment)	Noted.
3	No. (No comment)	Noted.
4	No. (No comment)	Noted.
5	No. I felt that the review utilized a variety of databases to obtain a large number of articles related to group visits. Some of the studies looked at were done within the VA but in my opinion, the review did not provide any type of bias.	Noted.
6	No. (No comment)	Noted.
7	No. (No comment)	Noted.
8	No. (No comment)	Noted.
9	No, it was excellent	Noted.
10	No. (No comment)	Noted.
<b><i>Q3. Are the objectives, scope, and methods for this review clearly described?</i></b>		
1	No. I am not aware of overlooked data sources.	Noted.
2	No. (No comment)	Noted.

Reviewer	Comment	Response
3	<p>Yes. Much of my focus has been intervention on blood pressure control in the group session, so some of the studies mentioned below have a slant towards treating hypertension.</p> <p>Appel, L.J., Chanpagne,C.M., Harsha, D.W., Cooper, L.S., Obarzanek, E., Elmer, P.J., Stevens, V.J., W.M., P. H., Svetkey, L.P., Stedman, S.W., Young, D.R., and Writing Group of the Premier Collaborative Research Group. 2003. Effects of comprehensive lifestyle modification on blood pressure control: main results of the Premier clinical trial. JAMA. 289:2083-2093</p> <p>Baghianimoghadam, M.H., Rahae, Z., Morowatisharifabad, M.A., Sharifirad, G., Andishmand, A., and Azadbakht, L. 2010. Effects of education on self monitoring of blood pressure based on BASNEF model in hypertensive patients. J RES MED SCI. 15:70-77</p> <p>Cakir, H., and Pinar, R. 2006. Randomized controlled trial on lifestyle modification in hypertensive patients...including commentary by: Clark AM and response by Pinar and Cakir. West.J.Nurs.Res.28: 190-215</p> <p>Palomaki, A., Miilunpalo, S., Holm, P., Makinen, E., and Malminiem, L. 2002 Effects of preventive group education on the resistance of LDL against oxidation and risk factors for coronary heart disease in bypass surgery patients. ANN.Med. 34:272-283</p> <p>Saounatsou, M., Patsi, O., Fasoi, G., Stylianou, M., Kavga, A., Economou, O., Mandi, P., and Nicolaou, M. 2001. The influence of the hypertensive patient’s education in compliance with their medication. Public Health Nurs. 18:436-442</p>	<p>Two of the suggested papers (Cakir, Saounatsu) were a combination of group and individual visits, and it was impossible to separate out the effects of these respective intervention components. We examined the Palomaki study and decided against including it because the study design was not a randomized controlled trial.</p> <p>We agree that the Baghianimoghadam study should be included, which we have done, and have amended our results accordingly.</p> <p>We cited the Appel paper in the Limitation section as an example of a good quality study that combined group and individual visits without analyzing the group visit component separately, and clarified that we did not include these studies.</p>
4	No. (No comment)	Noted.
5	No. Not that I am aware of.	Noted.
6	No. (No comment)	Noted.
7	Yes. Kearns, J.W. et al (2012) Group diabetes education administered through telemedicine: Tools used and lessons learned. Telemedicine and EHealth, 18, p347.	We examined the suggested study and decided against including it because the study design was not a randomized controlled trial.
8	None of which I am aware	Noted.
9	No. Have you looked at the shared medical appointment esp or the realist review of evidence synthesis for shared medical appointments	We thank the reviewer for the suggestion. Yes, we have examined the shared medical appointment (SMA) ESP report and have noted that these reports are complementary reviews of group appointments. In addition, we developed our library in collaboration with the SMA group to ensure that there was no overlap in the included literature.
10	No. (No comment)	Noted.

Reviewer	Comment	Response
<i>Q4. Please write additional suggestions or comments below. If applicable, please indicate the page and line numbers from the draft report.</i>		
2	Page 10, last sentence-examples given of “non-prescribing providers only include “nurses and nurse educators” Although other disciplines are listed later, expanding the variety of disciplines in this sentence may more clearly show that it is not just a nurse-run group visit.	We have expanded the list of examples given on pg. 10, per the reviewer’s suggestion.
3	I must say I was disappointed that the great majority of studies fail to show a preponderance of evidence for the efficacy of the group medical experience versus standard treatment options in primary care, at least in the short-term. It appears that many studies showed some improvement in certain aspects such as blood pressure readings or a reduction in LDL numbers, but not very much evidence for long-term gains in overall physical health. It doesn’t appear that there are enough studies done in a longitudinal fashion that would lend themselves to basing any conclusions of long-term gains. Being someone who believes in the group experience for patients, and who is continuing to use them in the form of drop in group medical appointments, or shared medical appointments under a heading of hypertension or diabetes, I was hoping for more evidence that would point to increasing the use of these types of clinic experiences.	We thank the reviewer for the thoughtful comments. We agree that there is a need for trials that evaluate outcomes over longer periods of time, and the utility of booster sessions. We have noted these gaps in the evidence base in the Future Research section.
6	The review is very well written, including the Generalizability and Limitations sections. Page 60, last sentence, remove “the”, ...to attend a multi-week course”...	We thank the reviewer for the feedback on the readability of the report, and have made the suggested change.
8	In the last sentence on page 10 (Introduction Section), the report states, “This review . . .focuses exclusively on literature that tests the effectiveness of group visits that have an emphasis on health education and are led by <b>non-prescribing providers</b> such as nurses and nurse educators.” It is my understanding that the intent of the report is to review studies in which the group visits are led by non-prescribing health professionals (e.g., nurses, dietitians). Given this, should those studies described in the “Multiple Chronic Conditions” section (page 59) be included in this review since all but the Elzen (2007) study were led by peer leaders and not health care professionals?	We have included trials of group visits led by peer educators as well as social workers, and believe this is an important aspect to many group visit interventions that ought to be represented in the report. As a complement to the shared medical appointment report, this review was intended to expand the purview of group appointment interventions to include those led by personnel that are non-physicians. We have clarified that we include group visit facilitators that exclude prescribing providers and may include health professionals (e.g., nurses, dietitians, physical therapists).
8	The recently released report on Shared Medical Appointments included a table in the “Future Research Section” that identified evidence gaps and suggested types of studies to close those gaps. Would it be possible to include a similar table in this report?	Yes, we agree that the Future Research section in table form, similar to the one used in the shared medical appointments report, is a useful way to display gaps in the research done in this area. We have made this change.

Reviewer	Comment	Response
9	<p>This is definitely a contribution. I hope that in the discussion that you may add that areas that demonstrate some benefit but the studies are not strong, may be areas for further pilot testing in the field with more data collecting. I don't personally believe that the only answer is more rigorous studies, but more practice with the evidence we have. Patients' self efficacy and satisfaction with chronic disease care is critical for VA in the future when veterans can choose where they get their healthcare. Low cost options that may improve even short term outcomes may be worth investing in, especially when led by peers and in the community. I don't want to discourage that type of clinical care. Happy to talk further. Would be happy to be involved in writing a paper about this and comparing to sma ESP and sma realist review.</p>	<p>We thank the reviewer for the thoughtful comments. We have added suggestions for further pilot testing in the field and more efforts for data collection to the Future Research section.</p>
10	<p>Here are some minor modifications.</p> <ol style="list-style-type: none"> <li>1) Changes to Group Visits Draft: Use of "dietitian" on pages 12, 47, 49, 86 – please spell with a "t" instead of a "c" in dietician</li> <li>2) In Generalizability section, last sentence- p. , suggest use of terminology "who demonstrated motivation " instead of "who have enough motivation" which appears vague</li> <li>3) Limitations p. 71- "Knowledge improvement outcomes" instead of "knowledge outcomes" even if knowledge was not studied, the use of knowledge does not indicate any qualitative or quantitative changes</li> </ol>	<p>Noted. We have made these changes.</p>
<p><b><i>Q5. Are there any VA clinical performance measures, programs, quality improvement measures, patient care services, or conferences that will be directly affected by this report? If so, please provide detail.</i></b></p>		
1	<p>Yes. Current primary care clinical performance is evaluated on percentage of encounters that are done in group setting, including educational and self management groups offered by nursing and other staff. I expect this will impact what conditions are treated in this fashion, with self-management preferred over didactic methods.</p>	<p>Noted.</p>
2	<p>Not directly by this report but this report in conjunction with the SMA report from Durham may have an impact on SMAs in PACT. Could influence targets in Compass related to non-single provider face-to-face visits in PACT.</p>	<p>Noted.</p>
3	<p>Yes—there is certainly a "push" within the VA for expansion of the use of group medical appointments and shared medical appointments. Some of the focus in PACT (Patient Aligned Care Teams) within the VA is the use by the care team in fashioning unique and "out of the box" alternatives to the usual one patient-one provider-one visit model. There has also been a focus on applying evidence based practice measures to our daily practice in hopes of improving patient care. The VA will have to continue to look at group medical experiences, and the research that is available to determine how much emphasis is placed on the utilization of these particular experiences, as well as looking at the long term effects of these types of encounters to ascertain long-term benefit.</p>	<p>Noted.</p>

<b>Reviewer</b>	<b>Comment</b>	<b>Response</b>
5	Group visits are listed under Access in the 2012 Compass Goals for VISN 12. Currently, groups are available for diabetes, lipids, CHF, and weight management. To meet access goals, groups allow more veterans to be seen in a timely manner. Individual appointment are also available, groups are not exclusive.	Noted.
6	Not aware.	Noted.
7	Many sites are implementing group education to meet performance measures for DM	Noted.
8	Given that VHA has prioritized group visits as part of the new primary care model, staff who are members of PACT teams will be directly affected by this report. There are currently VA facilities where nurses are involved in group visits. In the next couple of weeks, the Office of Nursing Services, through the ONS liaisons to PACT and Specialty Care, will attempt to obtain a list of the sites that currently conduct group visits along with the target population for those group visits. Additionally, the national Diabetes Program, the national Pain Program, and the National Center for Patient Safety (falls) would likely be interested in this report.	Noted.
9	This is a part of PACT and NCP. We can disseminate findings through them at a national level. Michael Goldstein and Margaret Dundon.	Noted.
<b><i>Q6. Please provide any recommendations on how this report can be revised to more directly address or assist implementation needs.</i></b>		
1	It would be helpful to have data about what VA's are currently offering in relation to these conditions.	We agree that it would be helpful to discuss implementation of group visits and shared medical appointments within the context of what the VA currently offers for Veterans with chronic conditions. Although these considerations are important, this discussion this extends beyond the scope of this review.
2	It would be helpful to not only know whether group visits affects the usage/frequency of traditional care but whether the traditional visit is altered when patients also attend group visits. For example, is the focus of the single provider face-to-face visit changed when patients also attend group visits (ie. patients that attend pain SMAs may still see their provider on the same schedule but they may be able to address more issues unrelated to pain whereas in the past the majority of the visit focused on pain-related issues).	This is a very interesting point. It would be an interesting premise for additional qualitative studies examining the quality of care provided in GVs as a complement to traditional individual clinical visits. We included studies of comparative effectiveness of head-to-head individual visits versus group visits. Unfortunately, there were few of these studies and we have identified this as a gap in the research base in the Future Research section.

Reviewer	Comment	Response
3	<p>Happily the research does not seem to be saying that there is not benefit to the group experiences, but it does seem to point to the issue of perhaps longer studies being necessary. Also, how a patient perceives benefit from a group experience whether the data seems to show an actual “health benefit “is a much more nebulous and decidedly more difficult factor to measure. The VA will have to be prudent in using group experiences so that the focus continues to be looking to research to guide implementation of these appointments versus using these because of fiscal concerns.</p>	<p>We agree with the reviewer and have made these points in the Future Research and Discussion sections.</p>
5	<p>Cost and specifically Medicare reimbursement have been the driving forces for group education in the private sector. In the VA, however, group education has been a means to improving better access—see more veterans in a timely manner. I am curious to know if length of class time (60, 90, 120min) or number of group visits(3-12 sessions) negatively influenced the group findings related to the 3 key questions? Individual visits might have been shorter (30-60 minutes) and only required 1 or 2 visits. Ultimately giving patients a choice in how they receive education—individual vs. group—is patient centric. A synthesized review showing that the results appear to be similar whether they receive individual or group education seem to support this new health care philosophy. I would encourage more research in the area of secured messaging and how that use of technology might affect patient outcomes in the management of chronic diseases. I would also encourage research in the area of MOVE! Groups and how they compare to individual visits.</p>	<p>We abstracted length and duration of group visits in the expectation that we would be able to compare trials based on these important elements. However, heterogeneity between trials was significant and precluded examination of these important questions. We agree that further research is needed and have identified various gaps in the Future Research section that the reviewer also identifies.</p>
6	<p>As a geriatrician, my concern is that somewhat positive findings from RCTs of group appointments may not necessarily translate into improved outcomes in real life situation, given the selection bias inherent to characteristics of research participants in general (usually more motivated and concerned about their health). I just read a study from Netherlands that looked at older individuals’ preferences for educational programs on falls and found that the majority (62.7%) had no interest to participate in any format; in addition, poor perceived health and age over 80 were associated with less preference for a group program format. (Dorresteyn, TA, Rixt Zijlstra GA, Van Eijs YJ, Vlaeyen JW, Kempen GI. Older people’s preferences regarding programme formats for managing concerns about falls. <i>Age Aging</i> . 2012;41(4):474-81).</p> <p>It seems that given the weak evidence and the heterogeneity of intervention content and outcomes, the implementation of group appointments, especially in Geri PACTs, should not be rushed, because having to come in for a group appointment may not be the “most patient centered care” for a frail older individual. Also, additional evaluations should be incorporated early on, in this VHA implementation effort, so that meaningful conclusions could be made in the future on the value of group appointments in the VA.</p>	<p>The reviewer brings up some very important and interesting considerations. Although we did not find any direct harms, the VA should be cautious given the lack of robust findings that GV improve health outcomes. In addition, there is potential for downsides to GV implementation. For example, travel time involved to get to and participate in GVs, which as the reviewer points out, may be a salient and prohibitive factor for frail, older participants. Given the relatively low benefits in health outcomes and the risk of inconvenience, we need to be careful about making blanket recommendations of group visits, particularly for patient populations with specific health needs. We have included these points in the Discussion section.</p>
9	<p>National PACT calls or community of practice</p>	<p>Noted.</p>

<b>Reviewer</b>	<b>Comment</b>	<b>Response</b>
<b><i>Q7. Please provide us with contact details of any additional individuals/stakeholders who should be made aware of this report.</i></b>		
1	Primary Care leadership, Mental Health leadership	Noted.
2	Susan Kirsh, Sharon Watts	Noted.
6	VACO GEC	Noted.
7	PACT and Specialty care clinical teams will benefit HRSD should be aware of this as there is a gap in knowledge	Noted.
8	As soon as the ESP program knows the date of the CyberSeminar when this report will be released, could you please send this information to Bev Priefer in the Office of Nursing Services so that we can do some advance notification of the various nursing groups that will be interested in this report.	Noted.
9	Dr stark, dr schectman, me, dr kinsinger, dr Goldstein, ONS, Anthony morreale in pharmacy	Noted.
10	Additional stakeholders include Primary Care Leaders to share with PACT teamlets and teams, and MOVE! Coordinators. The PACT and ACCESS goals promote the use of group education to manage chronic diseases. Additionally, individual visits are still available, offering Veteran's a choice.	Noted.

## **APPENDIX E. GLOSSARY FOR OUTCOMES USED IN INCLUDED STUDIES**

<b>Acronym</b>	<b>Measure/Outcome</b>
28 JC	28 Joint Count
AAMP	Australian Asthma Management Plan
AASA	Asthma Attitude Survey for Adults (24-item)
ABC	Activities-specific Balance Confidence
ABPM	Ambulatory Blood Pressure Monitoring
ADAPT	Arthritis, diet and physical activity promotion trial
ADDQOL	Audit of Diabetes-Dependent Quality of Life
AGKQ	Asthma General Knowledge Questionnaire
AHI	Arthritis Helplessness Index
AIMS2/Dutch-AIMS2	Arthritis Impact Measurement Scales version 2
AIMS2: AS	Arthritis Impact Measurement Scales version 2: Affect Subscale
AIMS2: CHS	Arthritis Impact Measurement Scales version 2: Current Health Subscale
AIMS2: PFS	Arthritis Impact Measurement Scales version 2: Physical Function Subscale
AIMS2: SS	Arthritis Impact Measurement Scales version 2: Symptom Subscale
ANCOVA	Analysis of Covariance
AQLQ	Asthma Quality of Life Questionnaire
AQOL	Assessment of Quality of Life
ASCQ	Arthritis Stages of Change
ASES	Asthma or Arthritis Self-efficacy Scale
ASMP	Arthritis Self-Management Program
BAI	Beck Anxiety Inventory
BASNEF	Belief, Attitude, Subjective Norm, Enabling Factors educational model
BAT	Behavioral Approach Test
BDI and BDI-II	Beck Depression Inventory
BIQ	Basic Information Quiz (51-item)
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor Surveillance System
CBT	Cognitive Behavioral Therapy
CCQ	Clinical COPD Questionnaire
CES-D	Center for Epidemiologic Studies Depression Scale
CHANGE	Change Habits by Applying New Goals and Experiences
CHIP	Checklist for Interpersonal Pain Behavior
COCS	Confidence in Overcoming Challenges to Self-Care instrument
COPE	Community-based physiotherapeutic exercise program
CORS	Coping With Rheumatoid Stressors
CQ	Asthma Knowledge Questionnaire (12-item)
CRDQ (aka CRQ)	Chronic Respiratory Disease Questionnaire
CRQ-SAS	Chronic Respiratory Questionnaire Standardised

<b>Acronym</b>	<b>Measure/Outcome</b>
CSEQ	Cardiac Self-efficacy Questionnaire (two sub-scales)
DAS28	Disease Activity Score using 28 joint counts
DASI	Duke Activity Status Index
DCP	Diabetes Care Profile
DES-SF	Diabetes Empowerment Scale, Short Form
DHBM	Diabetes Health Belief Measure
DKQ	Diabetes Knowledge Questionnaire
DQIP	Diabetes Quality Improvement Program
DSMP	Diabetes Self-management Program
DTSQ	Diabetes Treatment Satisfaction Questionnaire
EADL	Extended Activities of Daily Living
EMIR	French Quality of Life of RA (using short version of AIMS2-SF)
EMS	Early Morning Joint Stiffness
EQ-5D: VAS	Five Dimensional Health State Description of EuroQol
ESR	Erythrocyte Sedimentation Rate
ESWT	Endurance Shuttle Walk Test
EURIDISS	EUropean Research on Incapacitating Diseases and Social Support
EuroQol	Euro Quality of Life
FaB scale	Falls Behavioural Scale (behaviors protective of falls)
FABQ	Fear Avoidance Belief Questionnaire
FACIT-F	Functional Assessment of Chronic Illness Therapy-Fatigue
FAST	Fitness Arthritis and Senior Trial
FBG	Fasting Blood Glucose
FEV	Forced Expiratory Volume
FFM	Percentage of Fat Free Mass
FIT	Educational and physical training program
FPI	Functional Performance Inventory
FSS-III-R	Distinguishes 5 types of fears/phobias
GCPS	Chronic Pain Scale
GDS	Geriatric Depression Scale
GHQ	General Health Questionnaire
GSES-16	General Self-Efficacy Scale
GV	Group visit
HAAS	Hypothetical Asthma Attack Scenarios
HADS	Hospital Anxiety and Depression Scale
HAQ	Health Assessment Questionnaire
heiQ	Health Education Impact Questionnaire
HJAM	Hand Joint Alignment and Motion Scale
HJC	Hand Joint Count
HOMA-IR	Homeostasis Model Assessment of Insulin Resistance

<b>Acronym</b>	<b>Measure/Outcome</b>
HRQOL	Health-related Quality of Life
HSI	Heaviness of Smoking Index
IDEA	Interactive Dialogue to Educate and Activate
IDEALL	Improving Diabetes Efforts Across Language and Literacy
IPAQ	International Physical Activity Questionnaire
IPQ-R	Revised Illness Perceptions Questionnaire
ISR	Index of Self-Religion
ISWT	Incremental Shuttle Walk Test
JP	Joint Protection
JPBA	Joint Protection Behavior Assessment
JPKA	Joint Protection Knowledge Assessment
K10	Kessler Psychological Distress Scale
KCCQ	Kansas City Cardiomyopathy Questionnaire
KSCDQ	Knowledge of Self-Care Demands Questionnaire
LASI	Left Atrial Size Index
LMAP	Lifestyle management for arthritis programme
LVDVI	LV Diastolic Volume Index
LVMI	Left Ventricular Mass Index
MAF	Multidimensional Assessment of Fatigue Scale
MAPT	Multi-Attribute Prioritisation Tool
MARS	Medication Adherence Report Scale (5-item)
mCTSIB	Modified Clinical Test of Sensory Interaction on Balance
MDS	Multidimensional Diabetes Scale
M-HAQ	Mobility-Health Assessment Questionnaire
MLHFQ (aka MLwHF)	Minnesota Living With Heart Failure
MOCI	Maudsley Obsessive-Compulsive Inventory
MOS	Medical Outcomes Survey (measures of quality of life core survey)
MPLC	Multidimensional Pain Locus of Control Scale
MPQ	McGill Pain Questionnaire
MRC	Medical Research Council
NDI	Neck Disability Index
NHP	Nottingham Health Profile
NT-proBNP	N-terminal pro-brain natriuretic peptide
NYHA	New York Heart Association Classification
OT	Occupational therapist
PAID	Problem Areas in Diabetes Survey
PAM	Patient Activation Measure
PANAS	Positive and Negative Affect Schedule
PASE	Physical Activity Scale for the Elderly
PASS	Pain and stress self-management program

<b>Acronym</b>	<b>Measure/Outcome</b>
PCL	Pain Cognition List
PEF	Peak Expiratory Flow
PEM	Self-management empowerment education model
PIHAQ	Personal Impact Health Assessment Questionnaire
PSS	Perceived Stress Scale
PT	Physical therapist
QALYs	Stanford Health Assessment Questionnaire
QOL	Quality of life
RAI: AHS	Rheumatology Attitudes Index: Arthritis Helplessness Subscale
RAI: AIS	Rheumatology Attitudes Index: Arthritis Internality Subscale
RAND-36	RAND 36-Item Health Survey
RAQol	Rheumatoid Arthritis Quality of Life
RASE	RA Self-efficacy
RFS	Food Summary Score
ROM	Range of Motion
SCABPCQ	Self-Care Ability for Blood Pressure Control Questionnaire
SES	Self-efficacy Scale
SF-12	The 12-Item Short Form Health Survey
SF-36	Short Form Health Survey
SGRQ	St. George's Respiratory Questionnaire
SMART	Self-management arthritis relief therapy
SOPA	Survey of Pain Attitudes
SPSMQ	Short Portable Mental Status Questionnaire
SSAI	State Anxiety Inventory
SSES	Strengths Self-Efficacy Scale
STAI	Spielberger State-Trait Anxiety Inventory
TFEQ	Three Factor Eating Questionnaire
TICS	Telephone Interview for Cognitive Status
TSES	Total Self-efficacy Scale
TUG	Timed Up and Go
UAB	Pain Behavior Scale
UCL-DSMP	University College London-Diabetes Self-management Program
VAS	Visual Analog Scale
VNS	Visual Numeric Scale for pain (modified VAS)
VO2max	Maximal Oxygen Uptake
WHOQOL-BREF	World Health Organization quality of life instrument, short version
WOMAC	Western Ontario and McMaster Universities Osteoarthritis