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## Barriers and facilitators to implementation of shared medical appointments in primary care for the management of long-term conditions: a systematic review and synthesis of qualitative studies

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3 1 **Barriers and facilitators to implementation of shared**  
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5 2 **medical appointments in primary care for the management**  
6  
7 3 **of long-term conditions: a systematic review and**  
8  
9 4 **synthesis of qualitative studies**  
10  
11 5

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3 27 **ABSTRACT**

4  
5 28 **Objective:** To synthesise the published literature on  
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7 29 practitioner, patient and carer views and experiences of shared  
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9 30 medical appointments (SMAs) for the management of long-term  
10  
11 31 conditions in primary care.

12 32 **Design:** Systematic review of qualitative primary studies.

13 33 **Methods:** A systematic search was conducted using MEDLINE (Ovid),  
14 34 PsycINFO (Ovid), CINAHL (EBSCOhost), Web of Science, Social  
15 35 Science Premium Collection (Proquest) and Scopus (SciVerse) from  
16  
17 36 database starting dates to June 2019. Practitioner, patient and  
18  
19 37 carer perspectives were coded separately. Deductive coding using  
20  
21 38 a framework approach was followed by thematic analysis and  
22  
23 39 narrative synthesis. Quality assessment was conducted using the  
24  
25 40 Critical Appraisal Skills Programme for qualitative studies.

26  
27 41 **Results:** We identified 18 unique studies that reported  
28  
29 42 practitioner (n=11), patient (n=14) and/or carer perspectives  
30  
31 43 (n=3). Practitioners reported benefits of SMAs including scope  
32  
33 44 for comprehensive patient-led care, peer support, less  
34  
35 45 repetition and improved efficiency compared to 1:1 care.  
36  
37 46 Barriers included administrative challenges and resistance from  
38  
39 47 patients and colleagues, largely due to uncertainties and  
40  
41 48 unclear expectations. Skilled facilitators, tailoring of SMAs  
42  
43 49 to patient groups, leadership support and teamwork were reported  
44  
45 50 to be important for successful delivery. Patients' reported  
46  
47 51 experiences were largely positive with the SMAs considered a  
48  
49 52 supportive environment in which to share and learn about  
50  
51 53 selfcare, though the need for good facilitation was recognised.  
52  
53 54 Reports of carer experience were limited but included improved  
54  
55 55 communication between carer and patient.

52 56 **Conclusions:** There is insufficient evidence to indicate whether  
53  
54 57 views and experiences vary between staff, medical condition  
55  
56 58 and/or patient characteristics. Participant experiences may be  
57  
58 59 subject to reporting bias. Policies and guidance regarding best  
59  
60 60 practice need to be developed with consideration given to

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3 61 resource requirements. Further research is needed to capture  
4  
5 62 views about wider and co-occurring conditions, to hear from  
6  
7 63 those without SMA experience and to understand which groups of  
8  
9 64 patients and practitioners should be brought together in an SMA  
10  
11 65 for best effect.

12 66  
13 67 **Registration:** Prospero registration no. CRD42019141893.  
14  
15 68 [https://www.crd.york.ac.uk/prospero/display\\_record.php?RecordI](https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=141893)  
16  
17 69 [D=141893](https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=141893)

18 70  
19  
20 71 **Keywords:** Shared medical appointments, qualitative, chronic  
21  
22 72 disease, long-term condition, self-management, systematic  
23  
24 73 review

#### 25 74 26 27 75 **STRENGTHS AND LIMITATIONS OF THIS STUDY**

- 28  
29 76 • Focus on qualitative evidence provides rich insights into  
30  
31 77 barriers to implementation of SMAs in primary care from  
32  
33 78 the perspectives of practitioners, patients and carers.  
34  
35 79 • Robust search strategy, based on previous high-quality  
36  
37 80 reviews; refined to allow us to better identify  
38  
39 81 qualitative research  
40  
41 82 • The thematic synthesis approach has enabled the  
42  
43 83 identification of analytical themes that offer a new  
44  
45 84 interpretation practitioner and patient experiences of  
46  
47 85 SMAs beyond earlier reviews.  
48  
49 86 • Rapidly evolving area of practice and publications and  
50  
51 87 the most recent evidence may be missing  
52  
53 88 • Grey literature was excluded from the synthesis  
54

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12  
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14  
15 101 in the writing of the manuscript.  
16  
17 102

### 17 103 **Competing interests**

18 104 None to declare  
19  
20 105

### 22 106 **Checklist**

23 107 See supplementary material for ENTREQ checklist (Enhancing  
24  
25 108 transparency in reporting the synthesis of qualitative  
26  
27 109 research)  
28  
29 110

## 111 INTRODUCTION

112 Over 15 million people in England are living with one or more  
113 long-term conditions [1]. Such multimorbidity is more prevalent  
114 in those over 65 years, and in socio-economically deprived areas  
115 [2,3]. Long-term conditions require ongoing disease management  
116 and care, which consumes a significant amount of healthcare  
117 service delivery time [4]. Models of care that support patient  
118 self-management (or self-care) are at the centre of government  
119 policies worldwide [5] including NHS plans [6,7]. Shared medical  
120 appointments (SMAs), or group consultations, have been promoted  
121 as a new way of delivering primary care, to simultaneously  
122 improve patient self-management and resource use  
123 efficiency[8,9].

124  
125 SMAs typically involve a group of patients with the same long-  
126 term condition(s) meeting with one or more healthcare  
127 practitioners. In contrast to group education programmes, the  
128 SMA usually replaces a 1:1 appointment and may include physical  
129 examinations, medication adjustments or other clinical  
130 interventions[8,10]. It has been theorised that SMAs may improve  
131 patient self-efficacy by enabling participants to witness the  
132 consultation experiences of others and observe disease  
133 management strategies of peers who act as realistic role models  
134 for their own self-care [4,10]. Whilst there is some evidence  
135 that SMAs can support self-management of long-term conditions  
136 [4], it is important to understand the feasibility and  
137 acceptability of implementing SMAs from the perspectives of  
138 primary healthcare practitioners, patients and carers to  
139 ascertain if this model of care can meet their needs and reduce  
140 health inequalities.

141

142 It has been reported that practitioners enjoy SMAs, sighting  
143 benefits including development of team relationships, learning



1  
2  
3 144 from patients, more variety in work [4,10]. Patients attending  
4  
5 145 SMAs have also reported feelings of socialisation or  
6  
7 146 normalisation of a condition, increased trust with healthcare  
8  
9 147 practitioners and enhanced knowledge [4,11]. However, a small  
10 148 number of studies have reported patient concerns, including  
11 149 confidentiality and being unclear about the purpose of a session  
12  
13 150 [4]. Providers have reported concerns around insufficient  
14  
15 151 clinician and group facilitation training for SMAs and the need  
16  
17 152 for suitable premises [4,11,12]. Earlier reviews have focused  
18  
19 153 on secondary care [4] which is typically disease specific with  
20 154 time-limited follow-up after specialist treatment [11]. In  
21  
22 155 contrast, primary care has an emphasis on ongoing disease  
23  
24 156 management, often including multiple conditions, and care  
25 157 continuity. Hence this systematic review of qualitative research  
26  
27 158 aims to provide an in-depth insight into the experiences and  
28  
29 159 perceptions of SMAs for the management of long-term conditions  
30 160 in primary care including identifying barriers and facilitators  
31  
32 161 regarding implementation.  
33

34 162  
35 163 Review research questions:

- 37 164 1. What are patient and practitioner views and experiences of  
38 165 SMAs in primary care?
- 40 166 2. Do these views and experiences vary by long-term condition  
41 167 and/or other patient/ practitioner characteristics?
- 43 168 3. What does the literature tell us about potential barriers  
44 169 and facilitators to the delivery and uptake of SMAs in  
45 170 primary care?

## 50 171 51 172 **METHODS**

52 173 A systematic review and narrative synthesis of qualitative  
53 174 studies was conducted.  
54 175

### 55 176 **Search strategy and selection criteria**

1  
2  
3 177 We searched MEDLINE (Ovid), PsycINFO (Ovid), CINAHL (EBSCOhost),  
4  
5 178 Web of Science, Social Science Premium Collection (Proquest) and  
6  
7 179 Scopus (SciVerse) from database start dates to June 2019. A  
8  
9 180 combination of keywords and medical subject headings (MeSH) to  
10  
11 181 locate relevant qualitative studies were used. See Supplementary  
12  
13 182 File 1. Database searches were supplemented by forward and  
14  
15 183 backward citation searches of the included papers.  
16

17 185 Primary qualitative studies were included that: i) explored the  
18  
19 186 views of primary healthcare practitioners, staff, patients or  
20  
21 187 carers that had been involved in the delivery of/ or attended  
22  
23 188 SMAs within primary care, ii) met our criteria to be classed as  
24  
25 189 an SMA (group appointments that: were intended to replace  
26  
27 190 standard 1:1 appointments in general practice; were delivered  
28  
29 191 by primary care practitioners; and included clinical advice and  
30  
31 192 management as well as peer learning and support) iii) had a  
32  
33 193 patient population with at least one long-term condition. For  
34  
35 194 studies in which participants delivered/attended SMAs for both  
36  
37 195 long-term conditions and non-long-term conditions, only data  
38  
39 196 relating the former were extracted and synthesised. Papers were  
40  
41 197 excluded if i) the group session did not include an individual  
42  
43 198 assessment/examination/consultation with a primary healthcare  
44  
45 199 professional; ii) papers reporting survey data only, iii) it was  
46  
47 200 not possible to extract data collected from participants  
48  
49 201 attending SMAs for long-term conditions from those attending  
50  
51 202 SMAS for non-long-term conditions (e.g. antenatal care).

52 203 The title and abstracts of retrieved citations were double-  
53  
54 204 screened and where there were discrepancies, screeners met to  
55  
56 205 reach agreement. All studies at the full-text stage were  
57  
58 206 similarly double-screened with any uncertainties resolved by  
59  
60 207 discussion with a third member of the review team.

208

## 209 **Quality assessment**

1  
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3 210 Methodological quality of eligible studies was assessed by two  
4  
5 211 independent reviewers using the Critical Appraisal Skills  
6  
7 212 Programme checklist for qualitative studies [13]. This was done  
8  
9 213 to assess conduct (validity and robustness), transparency,  
10 214 content and utility of findings. Studies were not excluded on  
11  
12 215 the basis of this appraisal, as limited reporting is not  
13  
14 216 necessarily indicative of low quality research and risks the  
15  
16 217 exclusion of appropriate studies [14]. The strengths and  
17  
18 218 limitations of each included study were considered during the  
19  
20 219 analysis to ensure that findings from unreliable studies did not  
21  
22 220 unduly influence our results [15].  
23

### 24 222 **Data extraction and synthesis**

25 223 Key characteristics of the included studies and study  
26  
27 224 participants were recorded using a data extraction form, with  
28  
29 225 the extracted data double-checked by another team member. Full  
30  
31 226 text papers were then imported into NVivo (version 12). A  
32  
33 227 framework based on themes previously identified by reviews  
34  
35 228 [4,10] was used to deductively code participant quotes and  
36  
37 229 authors' interpretations in the results and discussion sections  
38  
39 230 of the studies. All data was coded by one reviewer then checked  
40  
41 231 by a second. Data reflecting the views of practitioner, patients  
42  
43 232 and carers were analysed separately.

44 233 Data excerpts were compared and contrasted and descriptive  
45  
46 234 themes were formed by merging codes and grouping them around  
47  
48 235 existing themes [4] and emerging themes. This included  
49  
50 236 condensing the existing themes into related /discordant  
51  
52 237 subthemes which were subsequently translated into higher-level  
53  
54 238 themes to better answer the research questions. Texts were re-  
55  
56 239 read and data re-coded according to newly structured thematic  
57  
58 240 framework through an iterative process to ensure these themes  
59  
60 241 best reflected the data. Data excerpts were then examined to  
242  
243 look for similarities and differences in the perspectives of  
practitioners or patients by characteristics (e.g. gender, age).

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3 2444  
5 245 **Patient and public involvement (PPI)**

6 246 The proposed programme of shared medical appointment research  
7 247 was presented to PPI panel who provided their views and opinions  
8 248 about what potential barriers and facilitators to attending an  
9 249 SMA might be from a patient perspective thus providing insights  
10 250 into potential findings of the review. Our affiliated PPI group  
11 251 read and commented on the draft of this manuscript and have  
12 252 identified several patient community groups through which to  
13 253 share a lay summary of the research findings.

14 254

15 255 **RESULTS**

16 256 Figure 1 outlines the screening and selection process resulting  
17 257 in the inclusion of 18 studies in the final synthesis.

18 258 **>Insert< Figure 1 Flow diagram of review search**

19 259

20 260 **Quality appraisal**

21 261 Quality of the included studies was generally high; most papers  
22 262 met the majority of the CASP checklist criteria (Supplementary  
23 263 File 2). Weaknesses commonly related to lack of information  
24 264 about participant recruitment [16-22] and researcher  
25 265 reflexivity, which was missing in all but two studies [23,24].

26 266

27 267 **Overview of included studies**

28 268 Studies were published between 2004 and 2018 and are summarised  
29 269 in Table 1. Studies report the views and experiences of a total  
30 270 of 262 practitioners, 306 patients, and 39 carers. The majority  
31 271 of studies were from North America, two were from Australia.  
32 272 Only two studies looked at the views of those healthcare  
33 273 professionals that were not delivering SMAs [22,25], the rest  
34 274 of the studies reported the views of individuals with experience  
35 275 of having delivered/ attended SMAs. One study [26] involved  
36 276 virtual SMAs, all others were face to face. One study focused  
37 277 on an SMA for children [16].

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Table 1 Overview of studies and participant characteristics

First author & date	Country	Study objective	Methodology & data collection methods	Participants: practitioners				Participants: patients				Participants: carers			
				N, occupation	Age range	% female	Ethnicity	N	Age, years	% female	Ethnicity	N	Age	% female	Ethnicity
Arney et al. 2018[23]	USA	To evaluate the implementation of an evidence-based, diabetes group intervention into routine primary care	Qualitative: interviews	35 (11 behavioural health staff, 18 AHP, 6 administrators)	35-64 years	80%	Varied: white / Caucasian 83%	0	N/A	N/A	N/A	0	N/A	N/A	N/A
Bauer et al. 2017[16]	USA	To assess the acceptability of group visits for ADHD in paediatric clinics.	Qualitative: interviews and verbal feedback session	9 (5 paediatricians, 3 AHP, 1 NP)	NR	NR	100% white / Caucasian	41	6-14	24%	Varied: 32% black, 34% Hispanic/Latino, 18% white	34	53% <40 years, 23% ≥40 years	97	Varied: 33% black, 47% Hispanic/Latino, 20% white
Cornelio-Flores et al. 2018[17]	USA	To assess the feasibility of an adapted Integrative Medical Group Visit curriculum for a Spanish-speaking Latino chronic pain population.	Mixed methods: focus groups and interviews	0	N/A	N/A	N/A	11	Mean 51.6	89%	100% Hispanic	0	N/A	N/A	N/A

1 2 3 4 5 6 7 8 9 10	Drake et al.201 8[18]	USA	To assess the feasibility of implementing personalized health planning within SMAs for patients with type 2 diabetes mellitus.	Mixed methods: focus groups and interviews	6 (physician, nurse, AHP, administrators)	NR	NR	NR	8	NR*	NR*	NR*	0	N/A	N/A	N/A
11 12 13 14 15 16 17 18 19 20	Egger et al. 2015[1 9]	Austr alia	To measure patients' and providers' attitude and satisfaction with SMAs, and consider the most appropriate form of SMA suited to Australian conditions	Mixed methods: interviews	8 GPs	NR	NR	NR	NR*	NR*	NR*	NR*	0	N/A	N/A	N/A
21 22 23 24 25 26	Housde n et al. 2016 [25]	Canad a	To explore GMVs with nurse practitioners and describe why some are not using GMVs to deliver primary care.	Qualitati ve: interview s	7 NP	NR	86%	NR	0	N/A	N/A	N/A	0	N/A	N/A	N/A
27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Housde n et al. 2017[2 7]	Canad a	To examine NP-led GMVs for patients with chronic conditions and consider the barriers and enablers to implementing GMVs in one Canadian province, British Columbia.	Qualitati ve: interview s and observati ons	12 NP	NR	NR	NR	12	40- 79	58%	Varied: 83% Euro- Canadia n	0	N/A	N/A	N/A

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Kowalski et al. 2018[28]	USA	To illustrate the role and importance of pre-implementation (early) interviews for guiding ongoing adaptations to improve implementation of a clinical program, achieve optimal change, and avoid type III errors.	Qualitative: interviews	28 (physicians, nurses, AHPs, facilitators and researchers)	NR	NR	NR	0	N/A	N/A	N/A	0	N/A	N/A	N/A
**Lavoie et al. 2013[29]	Canada	Explore dimensions identified as key in the patient-centred literature in the context of primary health care services delivered in a group setting.	Qualitative: interviews	34 (10 physicians, 7 NP, 2 nurses, 4 administrators, 11 AHPs)	NR	NR	NR	29	Mean 62	66%	Varied: 55% white, 45% Aboriginal	0	N/A	N/A	N/A
Miller et al. 2004[30]	USA	The feasibility of implementing a GMV model with low-income women in an inner-city clinic setting.	Mixed methods: interviews	0	N/A	N/A	N/A	26	NR*	NR*	NR*	0	N/A	N/A	N/A
Siple et al. 2015[20]	USA	To understand the experiences of veterans and to learn about the tools and methods they perceive to be most useful in improving patient education and motivation for	Qualitative: focus groups	0	N/A	N/A	N/A	18	30-80	6%	NR	3	NR	100	NR

		self-management of diabetes														
Steven s et al. 2014[2 1]	Austr alia	The aim was to qualitatively assess patient and provider interest in and attitudes towards SMAs in the Australian primary care context before extending the concept to further testing.	Qualitati ve: focus groups	46 (GP, nurse, AHP, administrat ors	NR	67%	NR	49	30- 70	43%	Varied: 90% non- indigen ous	0	N/A	N/A	N/A	
Stowel l et al. 2015[2 2]	USA	To provide clinicians with actionable education regarding innovative approaches to delivering care to patients with type 2 diabetes and to evaluate the effect of promoting the adoption of SMVs in clinical practice	Mixed methods: interview s	13 medical students	NR	NR	NR	4	NR*	NR*	NR*	0	N/A	N/A	N/A	
Stults et al. 2016[3 1]	USA	To examine the patient's perspective on participation in SMAs	Qualitati ve: focus groups	0	N/A	N/A	N/A	30	52- 93	33%	Varied: 87% white, 7% Hispani c/Latin o, 3% Asian/P	0	N/A	N/A	N/A	



											Pacific Islander				
Thompson <i>et al.</i> 2014[24]	Canada	To generate insights that could be used to guide the development of an inner-city community health centre's group medical visits (GMV) services.	Qualitative: semi-structured interviews	0	N/A	N/A	N/A	9	46-62	0%	Varied: 'predominantly' white	0	N/A	N/A	N/A
Tokuda <i>et al.</i> 2016[26]	USA	To explore whether video-shared medical appointments would improve diabetes outcomes in remote rural settings	Mixed methods: focus groups and interviews	2, NP, AHP	NR	NR	NR	15	NR*	NR*	NR*	2	NR	NR	NR
Thompson-Lastad (2018) [32]	USA	Study of how group medical visits and integrative medicine are combined and implemented for low-income people with chronic conditions.	Ethnographic observations interviews conducted in English and Spanish	28 (13 doctors, 1 NP, 5 AHPs, 8 administrators)	NR	79%	Varied: 54% White / Caucasian	25	Mean 58	72%	Varied: 60% Black / African American	0	N/A	N/A	N/A

**Wong et al. 2015[33]	Canada	To report whether GMVs have tangible benefits for providers and patients.	Qualitative: interviews	34 (10 physicians, 7 NP, 2 nurses, 4 administrators, 11 AHPs)	NR	NR	NR	29	Mean 62	66%	Varied: 55% white, 45% Aboriginal	0	N/A	N/A	N/A
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280 \* Data given for SMA attendees but not separately for study participants  
 281 \*\* Same study participants, different data analysis  
 282 NA- not applicable, NR = not recorded. Occupations; GP = general practitioner, NP = nurse practitioner, AHP = Allied  
 283 Health Professional, including pharmacists, dieticians, psychologists, social worker, substance abuse counsellor,  
 284 nutritionist. Administrators included healthcare/programme managers, primary care/group visit coordinators. Carers  
 285 included parents/guardians, wives and social support.  
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3 287 The healthcare practitioner views most commonly reported were  
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5 288 General Practitioners (GPs), family physicians, practice nurses  
6  
7 289 and nurse practitioners [16,18,33,19,21,24,25,27-29,32]. Fewer  
8  
9 290 studies captured the views of healthcare managers,  
10 291 programme/research coordinators and administrators  
11 292 [18,21,23,28,29,32,33].  
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13 293  
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15 294 The SMAs varied in terms of content, duration, numbers of  
16  
17 295 attendees and frequency of sessions. The majority of studies  
18  
19 296 focused on single condition SMAs (n=12), three reported on both  
20 297 single condition and mixed condition SMAs [29,31,33] and two on  
21  
22 298 mixed condition SMAs only[27,30], and one gave no details [25].  
23  
24 299 'Mixed condition' SMAs were for patients with one or more of a  
25  
26 300 number of different conditions, thus included those with one  
27 301 condition and those with multimorbidity. Studies of SMAs for  
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29 302 diabetes were most common (n = 15). A summary of the SMAs is  
30 303 given in Table 2.  
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304 Table 2 Characteristics of SMAs delivered in reviewed studies

First author & date	Description of SMAs						
	Duration (minutes)	No. attendees	No. of sessions	Frequency	Long-term condition(s) upon which SMA(s) focused	Attendees	Setting
Arney <i>et al.</i> 2018[23]	NR	5 - 7	4	NR	Diabetes (type 1)	Veterans	Hospital and community
Bauer <i>et al.</i> 2017[16]	60 - 75	NR	5	Monthly	ADHD	School age children	Academic centre and community
Cornelio-Flores <i>et al.</i> 2018[17]	NR	NR	9	Weekly	Chronic pain	Adults, Spanish-speaking Latino population, average age 51.6 years, 89% female	Hospital and community
Drake <i>et al.</i> 2018[18]	120	NR	8	Monthly	Diabetes (type 2)	Adults, varied ethnicity (74% Black/African-American), average age 55.1, 72% female	Medical Home providing primary care services.
Egger <i>et al.</i> 2015[19]	90	3 - 15	3	Monthly	Multiple single condition SMAs: diabetes (type 2), chronic pain, weight loss, general long-term conditions	Adults, 5% Aboriginal/Torres Strait Islander, aged between 24 - 86 years	Health centres
Housden <i>et al.</i> 2016[25]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Housden <i>et al.</i> 2017[27]	N/A	N/A	N/A	N/A	Healthy living and nutrition focused mixed SMA for patients with diabetes, obesity, heart disease and/or arthritis	Adults incl. individuals with concurrent disorders, refugees, those with addiction or other mental health conditions, young adults, women, and individuals from First Nations.	Community and primary care
Kowalski <i>et al.</i> 2018[28]	120	8 - 10	NR	NR	Diabetes	Veterans	Veterans Affairs health systems
*Lavoie <i>et al.</i> 2013[29]	average 90	12 - 20	NR	NR	Single condition SMAs for chronic pain or diabetes and mixed SMAs for	Adults, living in rural communities	Primary health care services

						multimorbidities including, diabetes, hypertension, and arthritis		
Miller <i>et al.</i> 2004[30]	90 (+30 1:1)	7	6	Monthly	Mixed SMAs for one or mixed morbidity including cardiovascular disease, diabetes, and osteoarthritis	Adults, varied ethnicity (71% Hispanic/Latino), aged 40-64 years (mean 50), 100% female	Community health centres.	
Siple <i>et al.</i> 2015[20]	NR	NR	4	NR	Diabetes (type 2)	Veterans	Veteran Association Health Care System	
Stevens <i>et al.</i> 2014[21]	NR	NR	NR	NR	Diabetes or pre-diabetes (type 2)	Adults with diabetes or pre-diabetes	Regional medical centres	
Stowell <i>et al.</i> 2015[22]	NR	NR	NR	NR	Diabetes	Adults with type 2 diabetes	Not specified	
^Stults <i>et al.</i> 2016[31]	NR	NR	NR	NR	Single condition SMAs (1) prediabetes management, (2) type 2 diabetes management, (3) Successful Aging that covered issues of concern for seniors (memory, falls, and depression), (4) mind-body management, and (5) men's physicals.	Not specified	Primary care practices	
Thompson <i>et al.</i> 2014[24]	NR	NR	24	Monthly	Diabetes (or at risk of)	Not specified	Community health centre that serves marginalised and vulnerable patients.	
Thompson-Lastad (2018) [32]	60 - 120	NR	NR	Weekly	Single condition SMAs: Hypertension, mental health condition, chronic back pain, pre-diabetes, and diabetes*^	Low-income adults	Community health centres	
Tokuda <i>et al.</i> 2016[26]	120	3 - 5	6	Weekly-bimonthly	Diabetes for > 10 years	Adults, varied ethnicity (55% Asian/Pacific Islander) mean age 60.4 years, 0% female	video-SMA to community-based outpatient clinic	

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*Wong et al. 2015[33]	60 - 90	9 - 15	NR	Weekl y- quart erly	Single condition SMAs for chronic pain or diabetes and mixed SMAs for mixed diagnosis including, diabetes, hypertension, and arthritis	Adults living in rural communities	Community and primary care
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8 305 \* Same study, two papers

9 306 ^ Study include SMAs run for non-chronic health conditions. Data extracted for long-term conditions.

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For peer review only

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3 308 **Narrative synthesis**

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5 309 Tables 3 and Table 4 present the findings of the analysis of  
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7 310 practitioner and patient perspectives, respectively. Each table  
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9 311 outlines examples of codes that were used to group the data into  
10 312 subthemes, which were subsequently translated into higher level  
11 313 themes. Practitioner themes were: 'advantages and benefits',  
12 314 'barriers and challenges' and 'implementation success and  
13 315 sustainability'.  
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Table 3 Views and experiences of practitioners and staff

Themes	Subthemes	Exemplar codes	Exemplar quotes and data
Advantages and benefits	<ul style="list-style-type: none"> <li>Comprehensive patient led care</li> <li>Peer support and accountability</li> <li>Efficiency and lower cost</li> </ul>	<ul style="list-style-type: none"> <li>Multi-disciplinary care, patient-led, increase patient understanding, increase practitioner understanding</li> <li>Normalise condition, offer support, share experiences, encourage accountability, increases motivation</li> <li>More efficient, less repetition, improved access, costs</li> </ul>	<p>...“one person’s worried about hyperglycemia and another person’s worried about nocturia, and another person’s worried about their vision you get information that can be both preventative and curative all in the same visit.” NP[25]</p> <p>“The biggest part is just that they [the patients] get to kind of feed off of each other and they talk about what works and what doesn’t... I think that the fact that they can help teach each other is most important.” Dietician [23]</p>
	Barriers and challenges to adoption and implementation	<ul style="list-style-type: none"> <li>Patient resistance and suitability</li> <li>Role adjustment and uncertainties</li> <li>Administrative &amp; resource challenges</li> </ul>	<ul style="list-style-type: none"> <li>Accustomed to 1:1 appointment, not for all patients, attached to physician, confidentiality</li> <li>Colleague resistance, self-efficacy/new skills, power relationships, managing peer interaction</li> <li>Coordinating schedules, patient reminders, funding and billing, lack of space/rooms, staff shortage, busy staff</li> </ul> <p>“I’ve got to tell you, it’s a hard sell with physicians. Even now, I don’t have a champion for the diabetes SMA. They see it as extra work. They don’t see the added value. It troubles me a lot that it’s so hard to get the docs involved.” Nurse [28]</p> <p>Author interpretation: NPs described how physical space, administrative time, and buy-in were major barriers to the diffusion of GMVs. Many NPs described the challenges of lacking regular office space or having limited administrative time, which required them to engage in clinical organization during personal or unpaid time.[25]</p>



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Implementa  
tion  
success  
and  
sustainabi  
lity

- Skilled facilitator
- Tailored to patient groups
- Leadership, teamwork and communication

- Facilitator- important, group management
- Patient background, disease stage
- Leadership, teamwork, communication, collegiality

"...critical that we [the video-SMA providers] were sensitive and expressed a value for diversity; that we were conscious of the dynamics inherent to the participant's cultures especially in the group interaction and demonstrated that we [the video-SMA providers] had knowledge regarding these differences and were willing to adapt our service delivery". Provider [26]

"It cannot be one person because the key word is 'sustainability.' If that person ever leaves or something ever happens, everything falls apart," Administrator [18]

"I think speaking to the importance of research and teamwork, getting people together for the betterment of patient care and the collegial approach to doing the kind of thing that brings people from different disciplines together, particularly nursing and the primary care providers. I think that's where we've got to wear that cap to get the right people engaging and working together" Administrator and primary care physician, [23]

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3 319 Advantages and benefits

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5 320 *Comprehensive patient led care*

6 321 Practitioners viewed the care delivered via SMA to be more  
7  
8 322 comprehensive [25,29,33] and better suited to supporting self-  
9  
10 323 management than 1:1 appointments [18]. Longer appointment times  
11  
12 324 enabled a range of issues and concerns to be covered in the one  
13  
14 325 session [18,22,25] and provided the opportunity for patients and  
15  
16 326 practitioners to develop a care plan together [18,29,33].  
17  
18 327 Practitioners reflected that the group sessions had improved  
19  
20 328 their own practice as they were able to gain further insights  
21  
22 329 into patient circumstances, their conditions and the challenges  
23  
24 330 to self-management that patients face in their daily lives  
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26 331 [16,25,27-29]. Practitioners believed the presence of multiple  
27  
28 332 clinicians with complementary expertise in the SMAs enabled more  
29  
30 333 holistic care [23].

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32 334  
33 335 *Peer support and accountability*

34 336 Practitioners valued the peer support afforded to patients by  
35  
36 337 group appointments [19,23,28,32,33], believing patients  
37  
38 338 benefitted from listening to the experiences of their peers and  
39  
40 339 from hearing responses to other participants' questions [22].  
41  
42 340 This in turn helped them to understand their condition better  
43  
44 341 and how best to manage it [19,23]. Practitioners said patients  
45  
46 342 were able to relate to each other which helped to normalise  
47  
48 343 their conditions [16], and provide confidence in self-management  
49  
50 344 [17]. Some clinicians explained there was '*cathartic value*' or  
51  
52 345 '*therapeutic effect*' from patients sharing with others in the  
53  
54 346 group their personal story of disease management [16,21,29]. The  
55  
56 347 group format also enabled collective problem solving with  
57  
58 348 clinicians and peers [33]. Two studies also reported that  
59  
60 349 practitioners believed that patients felt accountable to other  
350  
351 group members which increased their motivation to reach their  
352  
353 self-set goals [28,29]. However, a clinician in another study  
354  
355 reported that the peer-to-peer support element of the SMA,

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3 353 'didn't work very well' when two patients were paired together  
4 354 who were both 'non-compliant' and 'didn't give off the best  
5 355 information' [28].  
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10 357 *Efficiency and lower cost*

11 358 Clinicians reported that they found the sessions enjoyable and  
12 359 made their work less repetitive [21,22,28] less rushed, and more  
13 360 relaxed [21]. GPs and other managerial staff perceived SMAs to  
14 361 be more time efficient and cost-effective than usual 1:1  
15 362 appointments [19,28,33] and improved patient access to  
16 363 healthcare [28,33]. The multidisciplinary nature enabled them  
17 364 to get 'a lot of work done' [23] and meet evidence-based  
18 365 guidelines [33].  
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25 366  
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27 367 *Barriers and challenges to adoption and implementation*

28 368 *Patient resistance and suitability*

29 369 Nurse practitioners without SMA experience had concerns about  
30 370 recruitment and attendance, as patients were 'historically' and  
31 371 'culturally' accustomed to receiving 1:1 care [25]. They also  
32 372 expressed concerns over the appropriateness of group sessions  
33 373 for some patient population groups, particularly those with  
34 374 'concurrent disorders' that 'can't keep to the time line or sit  
35 375 long enough' [25]. Lack of motivation to improve health [21] and  
36 376 reluctance to share information in a group setting were  
37 377 perceived reasons why patients may not attend SMAs. Concerns  
38 378 about the ability to maintain patient confidentiality during the  
39 379 group session were raised, but 'lessened when it was explained  
40 380 that this is dealt with through a signed confidentiality  
41 381 agreement' [21,22].  
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53 382  
54 383 Practitioners with SMA experience reported that the top barrier  
55 384 to implementing SMAs was "convincing the patients to show up"  
56 385 [28]. Patients were reported to be reluctant to take part in a  
57 386 group because they did not want to disclose medical history and  
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3 387 health complaints to peers [23] and in one case this was thought  
4  
5 388 to contribute to SMAs being a short-lived and unsuccessful  
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7 389 innovation [27]. Some providers described how they spent time  
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9 390 identifying patients they thought might be '*willing to attend*'  
10 391 and did not invite those whom they felt were '*less suited*' to  
11 392 SMAs such as those who were hard of hearing, who had limited  
12 393 English speaking skills or who were uncomfortable in a group  
13 394 [33].  
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#### 396 *Role adjustment and uncertainties*

397 Nurse practitioners experienced difficulties encouraging other  
398 staff within the practice to '*buy-in*' and support the SMAs  
399 [23,28], reporting it being a '*hard sell*' to doctors who  
400 perceived them as '*extra work*' [28] . There was uncertainty and  
401 hesitancy amongst practitioners about SMAs, what was expected  
402 of them. Some practitioners reported how SMAs changed the  
403 dynamics between patients and provider, with practitioners  
404 tending to step back or keep quiet and allow patients to explore  
405 and discuss and problem solve between themselves [29,32] but  
406 intervene if misinformation was shared [32]. A clinician with  
407 no previous experience of group care was initially concerned,  
408 recognising that different skills were needed for SMAs. Yet,  
409 with minimal coaching, she was '*surprised at how easy*' it was  
410 to sit back, observe and listen rather than having the burden  
411 of needing to '*always know the answers*' [16]. One study [27]  
412 reported that there were changes in the power dynamics between  
413 professionals particularly between NPs and GPs, as the former  
414 often take the lead in delivery of SMAs. One NP reported being  
415 irritated when the physician had minimal input during the SMA  
416 yet '*billed for the ten people that were in the group even though*  
417 *the NP had done all of the work, teaching, counselling and the*  
418 *prescriptions.*' [25]  
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#### 420 *Administrative & resource challenges*

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3 421 The most commonly cited challenge to implementing SMAs was the  
4  
5 422 large number of administrative tasks involved in setting them  
6  
7 423 up [16,19,21-23,25,28,33] clinicians reporting they can be  
8  
9 424 particularly burdensome for 'non-medical staff' [22]. This  
10  
11 425 included: the coordination of schedules for multi-disciplinary  
12  
13 426 teamwork [16,21-23,28], access to the technological systems and  
14  
15 427 support staff required to organise SMAs [25,26], identification  
16  
17 428 of participants suitable for SMAs [28,33], difficulties in  
18  
19 429 reminding patients of appointment times, and the preparation of  
20  
21 430 clinical notes and documentation for each SMA. In the context  
22  
23 431 of the US healthcare system, providers also expressed concerns  
24  
25 432 over funding and billing for SMAs [16,18,19,22,27,28,33], with  
26  
27 433 insurance reimbursement issues perceived as a barrier to  
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29 434 providing SMAs. Lack of physical space to hold the SMAs was  
30  
31 435 reported as key limitation [16,23,27,28,33] as well as  
32  
33 436 insufficient staff to support the adoption, implementation and  
34  
35 437 maintenance of SMAs [16,23,28] with some clinicians giving  
36  
37 438 competing demands on their time as a key challenge to  
38  
39 439 implementation [23,28].

440

441 Implementation success and sustainability

442 *Skilled facilitator*

443 Practitioners deemed the role of a facilitator to be crucial to  
444 success of SMAs [19,21,28,32,33]. They had an important role in  
445 making the atmosphere in the group session relaxed and conducive  
446 to sharing [33]. However, not all clinicians were equipped with  
447 group facilitation skills, as one dietician reported having  
448 difficulties in managing patients in the group who were 'over-  
449 bearing' and 'offensive' rather than supportive of other group  
450 members [28]. Nurses reported that clinicians who could be  
451 flexible and were 'willing to take a back seat' were most suited  
452 to the SMA model of working [28].

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454 *Tailored to patient groups*

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3 455 Several SMA studies were designed to target specific patient  
4 456 groups, for example veterans with low health literacy [23] and  
5 457 underserved Spanish speakers [17]. Practitioners reported having  
6 458 spent time identifying and designing the SMAs for these specific  
7 459 groups [33] and the need to be sensitive to the cultural  
8 460 diversity of group participants [26]. For disease specific SMAs  
9 461 clinicians acknowledged it was important to take into account  
10 462 the disease stage of the SMA participant, as patients with more  
11 463 disease experience may '*more adequately influence*' those with  
12 464 less experience [21]. Most studies in this review did not  
13 465 describe the process by which patients were selected and invited  
14 466 to attend. A NP believed that the SMAs they tried to implement  
15 467 were unsuccessful because they weren't organised and designed  
16 468 in a person-centred way, rather the incentive for the practice  
17 469 was '*to see a bunch of people all at once and sign off*' [25].  
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#### 471 *Leadership, teamwork and communication*

472 Two studies described the importance of having leadership  
473 support in order to adopt and implement the innovation [23,28]  
474 to ensure sufficient time and resources were allocated to the  
475 SMAs. A team-based approach and effective communication between  
476 members healthcare practitioners and practice staff was reported  
477 to be important for effective implementation, maintenance and  
478 sustainability [18]. The delivery of care by multidisciplinary  
479 teams was also considered a key strength of group appointments  
480 [23].  
481

481

#### 482 **Patient and carer view and experiences**

483 A number of subthemes emerged from the patient and carers'  
484 perspectives within overarching themes of '*benefits of SMAs*'  
485 and '*barriers to SMA attendance and success*', see Table 4.  
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486 Table 4 Views and experiences of patients and carers

Themes	Subthemes	Exemplar codes	Exemplar quotes and data
Benefits of SMAs	<ul style="list-style-type: none"> <li>Peer support</li> <li>Vicarious learning and collective problem solving</li> <li>Motivation for self-management</li> <li>Safe environment to share</li> </ul>	<ul style="list-style-type: none"> <li>Feeling supported, reassurance</li> <li>surrogate questioning and answers, listening and discussion, learning from peers' experience</li> <li>learn self-management strategies, improved self-management, accountability</li> <li>inviting and comfortable atmosphere, honesty, anonymity in group, enjoyment, more time</li> </ul>	<ul style="list-style-type: none"> <li>'I wasn't the only one who had ADHD. It's like there's more people to know how it feels... I really don't talk to anybody about my stuff I have to go through, so it was fun to tell people about it" Patient ADHD[16]</li> <li>"I didn't even want to go on the medication. To me it was no you know. But hearing it from her [another group member], how it worked for her, I decided to try it. And I'm glad I have, because it has helped me control it." Patient, diabetes [24]</li> <li>" ... you come out of the group feeling much more self-confident ... you've got your batteries recharged and you can really go till the next group ... it's [Gmv] more motivating ... you want to do more yourself and rely less on others ... but then you always realize there's others out there to help you if needed." Patient[33]</li> <li>"I just noticed that, listening to the other people, they brought up some things that may have related to me that I felt were my weaknesses or things that I did that I wouldn't wanna disclose because I might feel a bit of shame or embarrassment, but after hearing other people be open and honest, I think it gives me—or just allows you to be more honest yourself because you've already heard other people expose themselves or be honest. (Male, approximately 60 years old, type 2 diabetes SMA) [31]</li> </ul>
Barriers to SMA attendance and success	<ul style="list-style-type: none"> <li>Cultural barriers</li> <li>Physical barriers</li> </ul>	<ul style="list-style-type: none"> <li>Dislike group work, confidentiality and privacy concerns, can't relate to others, dislike divided time and attention, lacking motivation/ interest in health, sessions too long</li> </ul>	<ul style="list-style-type: none"> <li>Author interpretation: One male stated he was 'too busy' to be sitting around in a doctor's surgery for 90 minutes, although agreed that the total time taken for a consultation, with waiting time, etc, may equal this.[21]</li> <li>Author interpretation: While some initially thought sharing information in the group situation was a problem, a concern over privacy tended to drop away</li> </ul>

- Accessibility of venue, transportation costs

*after talking about this. 'I suppose you don't have to disclose what you don't want to.'* (Female) [21]

- *"I'm on a fixed income, I'm a retiree, and sometimes it gets a little expensive when you're charting out what you can spend each month ... maybe if they could throw a little something in each month, like maybe \$10 for transportation or something. Don't you think that would help?"* Patient, diabetes [18]

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3 488 Benefits of SMAs

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5 489 *Peer support*

6 490 Most patients described feeling supported by others in the group  
7  
8 491 [16,19,21,22,27-29], feeling that '*they were not the only one*'  
9  
10 492 with their condition and enjoyed having a safe environment in  
11  
12 493 which to share their experiences and feelings [16]. Carers  
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14 494 valued the group sessions reporting the additional support they  
15  
16 495 received from being able to share with others in their situation  
17  
18 496 [16].

19 497

20 498 *Vicarious learning and collective problem solving*

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22 499 Patients described learning more about their condition, disease  
23  
24 500 progression and treatment options by listening to the lived  
25  
26 501 experiences of others and observing and engaging with other  
27  
28 502 individuals at different stages of their disease [17,27]. Being  
29  
30 503 able to ask multiple questions and hearing answers to questions  
31  
32 504 they had not thought to ask was very beneficial [19,25,27]. They  
33  
34 505 more readily absorbed/listened more closely to health-related  
35  
36 506 information from peers than from the clinician [20,24,32]  
37  
38 507 because they knew they had experienced it themselves. Hearing  
39  
40 508 the experiences of others helped overcome feelings of isolation  
41  
42 509 and provided patients with reassurance in their ability to self-  
43  
44 510 manage [19]. Support for SMAs was particularly strong from those  
45  
46 511 with previous health-related group experience [21]. Conversely,  
47  
48 512 however, it was reported that some patients did not want to  
49  
50 513 attend any further SMAs because they did not want to talk about  
51  
52 514 their health concerns or listen to other people's concerns in a  
53  
54 515 group [33].

51 516

52 517 *Motivation for self-management*

53  
54 518 Patients reported feeling more motivated to self-manage their  
55  
56 519 condition(s) [17,18,20] and accountable to others in the group  
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58 520 to adhere to medication [26] and achieve goals that they set  
59  
60 521 themselves [18,28,29,31]. Veterans reported that they were using

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3 522 less medication following the group session and were better able  
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5 523 to self-manage their condition [20]. Similarly, carers reported  
6  
7 524 that their children had learned skills to manage their ADHD  
8  
9 525 better [16].

10 526

11 527 *Safe environment to share*

12  
13 528 Some patients reported feeling anxious prior to attending SMAs  
14  
15 529 and ashamed of how they had been controlling their condition.

16  
17 530 However, once they had attended the SMA, they found the  
18  
19 531 session a safe environment in which to share and face their  
20  
21 532 fears and they had developed greater trust in their health  
22  
23 533 practitioner [29,31]. Another study reported that some  
24  
25 534 patients felt the group environment was more relaxed and  
26  
27 535 enjoyable than one to one appointments, as 'there is a certain  
28  
29 536 level of anonymity in a group setting' [29]. It was widely  
30  
31 537 reported that patients were satisfied with the care they  
32  
33 538 received during the group sessions [16,19,22,24,26,29,31].

34 539

35 540 *Barriers to SMA attendance and success*

36  
37 541 Some studies reported that patients expressed dislike or lack  
38  
39 542 of interest in group appointments [19,23]. Some patients also  
40  
41 543 expressed reservations about sharing personal information and  
42  
43 544 about confidentiality prior to attending [19,21,23,30],  
44  
45 545 especially in smaller communities [21]; however this was not a  
46  
47 546 concern after attending the group session [19]. In the study of  
48  
49 547 virtual SMAs [26] some patients reported negative experiences  
50  
51 548 including that the SMA was too big (even though there were only  
52  
53 549 4 - 6 patients per SMA), and there was poor control of group  
54  
55 550 dynamics, but this might have been specific to the remote  
56  
57 551 delivery. It was recognised that a skilled facilitator improved  
58  
59 552 enjoyment and engagement [24] and how providers communicate and  
60  
553 interact with patients during the appointment can affect their  
554  
555 experience[20]. Others found it difficult to relate to other  
group members [30] or did not want to talk about their issues,

1  
2  
3 556 nor hear other patients' issues in a group [33]. Some patients  
4  
5 557 reported they would have liked more individual time with the  
6  
7 558 clinician [26,30] or to have seen their own doctor [21,31].  
8  
9 559 Barriers to attendance included scheduling conflicts with other  
10 560 commitments [18]and transportation or parking issues [28].  
11  
12 561

## 13 562 **DISCUSSION**

15 563 This systematic review has identified a detailed literature,  
16  
17 564 primarily from North America, that provide rich accounts of  
18  
19 565 practitioners involved in the delivery SMAs. Whilst most studies  
20 566 included patient perspectives, the richness of the supporting  
21  
22 567 data was lower compared with practitioner perspectives. There  
23  
24 568 was notably less comparable evidence examining carer  
25  
26 569 perspectives. The experiences of some minority ethnic and  
27  
28 570 indigenous groups were represented thus offering insights into  
29  
30 571 the acceptability of SMAs for these patient groups. The  
31  
32 572 systematic search and selection measures enabled the  
33  
34 573 identification and synthesis of data which has brought to light  
35  
36 574 several additional challenges to implementation.

37 575  
37 576 Most practitioners and patients with experience of SMAs regarded  
38  
39 577 them positively, and reported several advantages compared to  
40  
41 578 one-to-one appointments. GPs and nurse practitioners with SMA  
42  
43 579 experience, reported that they enjoyed the sessions, with  
44  
45 580 several reporting they helped overcome the repetition fatigue  
46  
47 581 often associated with traditional consultations. Practitioners  
48  
49 582 also perceived SMAs could be a more efficient and effective way  
50  
51 583 of delivering care. Most patients valued the provision of peer  
52  
53 584 support and reported that being able to share and learn from  
54  
55 585 each other helped improve their self-confidence and provided  
56  
57 586 motivation to reach their goals. However, this experience was  
58  
59 587 not shared by all patients, with some reporting that they were  
60  
588 unable to relate to others in their group or that they felt  
589  
590 589 others in the group talked too much. This highlights the need

1  
2  
3 590 for effective facilitation and careful patient selection in  
4  
5 591 order for SMAs to be successful.

6 592  
7  
8 593 Some practitioners reported difficulties in recruiting patients  
9  
10 594 and garnering support for the delivery of SMAs from other  
11  
12 595 practice colleagues. Notable barriers to SMA implementation  
13  
14 596 included insufficient staff, time and resources to set up and  
15  
16 597 run SMAs. Practitioners were concerned that patients would be  
17  
18 598 reluctant to participate in a group appointment due to low  
19  
20 599 motivation, confidentiality concerns and preference for 1:1  
21  
22 600 appointments. Some patients also expressed reservations about  
23  
24 601 the group setting due to confidentiality concerns and desire for  
25  
26 602 more time to discuss individual needs.

27 603  
28 604 The positive experiences and perceived benefits of SMAs reported  
29  
30 605 by practitioners and patients in this review corroborate those  
31  
32 606 reported previously [4,10], which suggests SMAs may offer  
33  
34 607 advantages in primary care similar to those in other healthcare  
35  
36 608 settings. However, studies included in this review may be  
37  
38 609 subject to reporting bias due to a focus on attendees rather  
39  
40 610 than those who declined SMAs [4,10,11]. Staff and facilities  
41  
42 611 inadequacies, patient participation and attendance, group  
43  
44 612 dynamic incompatibilities and cost-benefit concerns have been  
45  
46 613 listed as barriers to implementation previously [9,11]. Our  
47  
48 614 review of qualitative evidence provides additional, deeper  
49  
50 615 insights into barriers linked to organisational culture. We  
51  
52 616 found practitioner reports of difficulties in gaining support  
53  
54 617 from colleagues in the wider practice, including managerial  
55  
56 618 staff, some of whom expressed negative attitudes towards SMAs.  
57  
58 619 Furthermore, SMAs involving multidisciplinary teams appear to  
59  
60 620 challenge the traditional hierarchal role of practitioners in  
61  
62 621 primary care which leads to improved collegiality in some cases,  
63  
64 622 and frustration in others. This suggests that clear guidance and  
65  
66 623 expectations around SMAs may not have been effectively

1  
2  
3 624 communicated within practices. Our review has also highlighted  
4  
5 625 that SMAs appear to be most successful when practitioners have  
6  
7 626 designed and prepared SMAs for particular patient groups, and  
8  
9 627 this work is reported to be resource and time intensive.  
10 628 Practitioners report mixed views about the efficiency of SMAs  
11  
12 629 compared to 1:1 appointments, which requires further  
13  
14 630 exploration.

15 631

### 16 632 **Limitations**

17  
18 633 Although the quality of included studies was generally good,  
19  
20 634 most of the healthcare professionals were GPs and nurse  
21  
22 635 practitioners which may limit the generalisability of our  
23  
24 636 findings to other healthcare professionals in primary care such  
25  
26 637 as pharmacists, physiotherapists and dieticians etc. Few studies  
27  
28 638 provided rich detailed accounts of patient and carers, thus  
29  
30 639 insights offered from the literature are limited. Given that  
31  
32 640 many of the patients were recruited immediately after the SMAs,  
33  
34 641 it is possible that patients with negative SMA experiences or  
35  
36 642 those who declined to participate may be missed, therefore the  
37  
38 643 sample may be biased [4,10,11]. Similarly, only two studies  
39  
40 644 included the perspectives of practitioners not implementing  
41  
42 645 SMAs, therefore other perceived barriers may not have been  
43  
44 646 captured. Furthermore, the lack of researcher reflexivity  
45  
46 647 reported in the studies highlighting a potential source of bias,  
47  
48 648 those involved in developing or delivering SMAs could have  
49  
50 649 influenced participants' responses. This may help explain the  
51  
52 650 discrepancy between providers telling researchers that patients  
53  
54 651 were hesitant to attend SMAs whilst the latter reported a great  
55  
56 652 deal of enthusiasm. As most studies are from North America, it  
57  
58 653 is unclear whether some barriers, such as payment/ insurance  
59  
60 654 reimbursement concerns, are applicable in other global  
655  
656 healthcare systems. Limited and inconsistent reporting of study  
657  
658 participant demographic information limited our understanding  
659  
660 as to whether patient experiences and perspectives differ by

1  
2  
3 658 long-term condition or other personal characteristics. None of  
4  
5 659 the studies reported differences in patient perspectives based  
6  
7 660 on gender, age ethnicity or cultural group. Similarly, the  
8  
9 661 amount of detail reported about the SMA itself in terms of  
10 662 format, staffing, duration and mode of delivery was limited. It  
11 663 is possible that this underpins some of the differences in  
12 664 experiences of patients and practitioners reported in the  
13 665 studies. In addition, it is unclear whether patient willingness  
14  
15 666 to attend SMAs is sustainable over time, due to limited study  
16  
17 667 period and follow ups.  
18  
19  
20 668

21  
22 669 Most studies in this review reported SMAs designed to support  
23 670 patients with diabetes. Only a limited number of studies  
24 671 reported on other long-term conditions, yet the perceived  
25 672 benefits and experiences reported in mixed-condition studies  
26 673 were similar, and do not appear to be condition specific.  
27 674 Furthermore, only five studies explicitly stated that some SMA  
28 675 participants had multimorbidity. Thus, there was insufficient  
29 676 information reported to understand the acceptability of  
30 677 attending group appointments with individuals who have different  
31 678 combinations of conditions. Further exploration of the use and  
32 679 experience of SMAs for patients with multimorbidity is needed.  
33  
34 680

## 681 **CONCLUSION**

682 Practitioner, patient and carer experiences of SMAs delivered  
683 in primary care have generally been positive, with benefits to  
684 both practice and patients reported. However, there is not  
685 enough evidence to show if views and experiences vary by staff  
686 involved, medical condition and / or patient characteristics.  
687 Further research is needed to better understand which groups of  
688 patients and practitioners should be brought together in an SMA  
689 for best effect. Whether SMAs for single conditions, adequately  
690 meet the care needs of patients with multimorbidity also needs  
691 further exploration. This will help to inform guidance for

1  
2  
3 692 practitioners on how best to identify and recruit patients to  
4  
5 693 SMAs, rather than identifying and inviting patients based on  
6  
7 694 personal judgements, which could have implications for health  
8  
9 695 inequalities. Having identified a number of barriers and  
10 696 facilitators, policies and guidance need to be developed and  
11 697 effectively communicated across and within practices on how best  
12 698 to implement and evaluate SMAs in practice. This in turn may  
13 699 help to improve staff expectations and overcome the hesitancy  
14  
15 700 regarding SMA approaches. Additional resources may be needed to  
16  
17 701 deliver SMAs such as additional administrative support, further  
18 702 training, compatible IT systems and physical space; a needs  
19  
20 703 assessment may be required at practice level. The views of  
21  
22 704 healthcare practitioners not currently delivering SMAs are  
23  
24 705 required to ensure all barriers have been comprehensively  
25  
26 706 explored. This is important to fully understand what  
27  
28 707 interventions might be necessary to support the widespread  
29  
30 708 adoption and implementation of SMAs in primary care. In  
31  
32 709 addition, given the increased use of virtual consultations due  
33  
34 710 to the outbreak of Covid-19, further exploration as to the  
35  
36 711 acceptability and feasibility of SMAs delivered via  
37 712 videoconference is warranted.

38  
39 713

#### 40 714 **AUTHOR CONTRIBUTIONS**

41  
42 715 EK, KJ, HM designed the study. MYT and KJ undertook the  
43  
44 716 searches. FG, MYT, KJ, DO, EK and AOD carried out the  
45  
46 717 screening. FG, MYT, KJ and HM carried out the data extraction  
47  
48 718 and analysis. All authors contributed to the interpretation.  
49 719 FG wrote the manuscript that all authors contributed to and  
50  
51 720 approved.

52 721

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55  
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57  
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59  
60

1  
2  
3 725 on the manuscript prior to submission. Professor Kaner is  
4 supported via an NIHR Senior Investigator award.

5 726  
6 727

#### 7 728 **AVAILABILITY OF DATA**

8  
9  
10 729 Datasets available from the Open Science Framework repository,  
11 [unique persistent identifier- to be added].

12 730  
13 731

#### 14 732 **SUPPLEMENTARY MATERIAL**

15 733 ENTREQ checklist (Enhancing transparency in reporting the  
16 synthesis of qualitative research)

17 734  
18 735 Supplementary File 1- Search strategy example

19 736 Supplementary File 2- Quality appraisal of primary studies

20 737

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56 758 5 Department of Health and Social Care. *Advancing our*  
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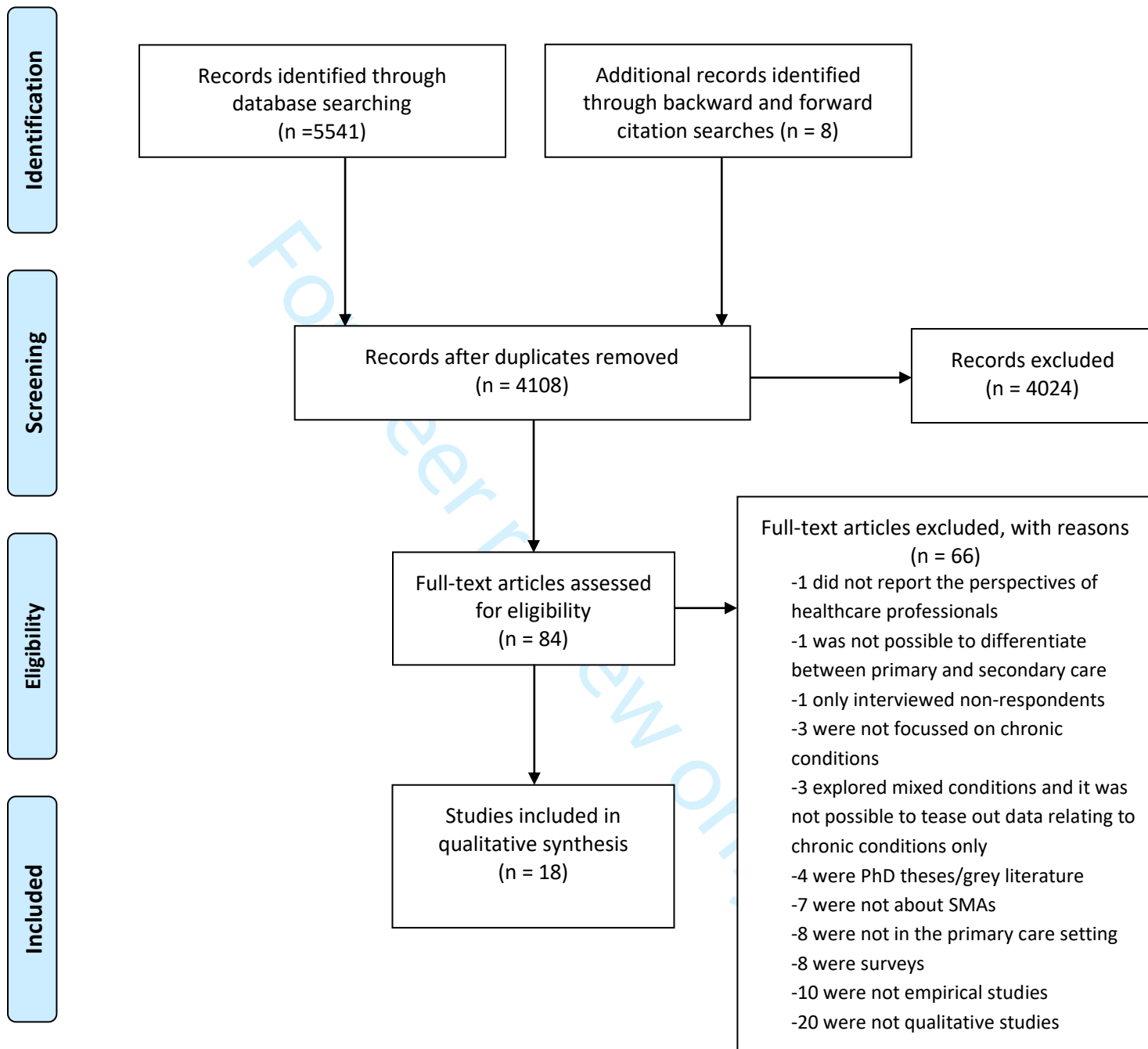
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#### FIGURE LEGEND

##### Figure 1-Flow diagram of review search

**Caption: Figure 1** Our search resulted in the retrieval of 84 papers for full-text review. Of these, 66 were ineligible for inclusion. Three additional studies were identified following forward and backward citation searches. This resulted in the inclusion of 18 studies in the final synthesis.



### Supplementary File 1- Example search strategy

Medline Search (OVID MEDLINE(R) 1946 to June Week 4 2019)

Shared medical appointment\$

OR shared medical visit\$

OR cluster visit\$

OR group visit\$

OR group clinic\$

OR group appointment\$

OR group care\$

OR group meeting\$

OR group medical visit\$

OR group medical appointment\$

OR group medical clinic\$

OR group consultation\$

OR group medical care\$

OR group medical meeting\$

OR gmV

OR gma

OR co-operative health care clinic\$

AND (((("semi-structured" OR "semistructured" OR "unstructured" OR "informal" OR "in-depth"  
OR "indepth" OR "face-to-face" OR "structured" OR "guide") adj3 (interview\$ OR discussion\$ OR  
questionnaire\$)) OR (focus group\$ OR qualitative OR ethnograph\$ OR fieldwork OR "field work"  
OR "key informant")).ti,ab.

Supplementary File 2 Quality appraisal of studies included in review

First author & date	CASP criteria										Overview of limitations and richness of data	
	Statement of aims	Appropriate methodology	Appropriate design	Recruitment	Data collection	Reflexivity	Ethical issues	Data analysis	Statement of findings	Valuable		
Arney <i>et al.</i> 2018[23]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Reasons for declining invitation to participate were not reported. Potential researcher bias not discussed.</li> <li>Many quotations (with participant occupation) provided to support themes.</li> </ul>
Bauer <i>et al.</i> 2017[16]	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Can't tell	Yes	Yes	Yes	Moderately	<ul style="list-style-type: none"> <li>Recruitment strategy not reported. Unclear whether anyone declined to participate. Unclear how research was explained to participants. Potential researcher bias not discussed.</li> <li>Many quotations (without participant characteristics) provided that support findings.</li> </ul>
Cornelio-Flores <i>et al.</i> 2018[17]	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Unclear how participants were invited to participate in focus groups and whether any declined. Focus groups held during last GMV session by facilitator external to the research team.</li> <li>Many quotes included without participant characteristics. Data relatively rich.</li> </ul>
Drake <i>et al.</i> 2018[18]	Yes	Yes	Yes	Can't tell	Yes	No	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Unclear how participants were invited to participate in focus groups and whether any declined. Unclear who facilitated the focus groups and what role/relationship they had with study participants, no discussion of author biases.</li> <li>Some quotes (without participant characteristics) included though not very rich. Very few patient accounts reported.</li> </ul>
Egger <i>et al.</i> 2015[19]	Yes	Yes	Yes	Can't tell	Yes	No	Yes	Can't tell	Yes	Yes	Moderately	<ul style="list-style-type: none"> <li>Recruitment strategy not reported. Research team involved in delivering SMAs, no discussion of potential researcher bias. Acknowledged potential bias in self-selection of participants.</li> <li>Fairly thin qualitative data about satisfaction/enjoyment. Quotations provided without participant characteristics.</li> </ul>
Housden <i>et al.</i> 2016[25]	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>No reflection on potential bias in data collection or analysis by authors.</li> <li>Good illustrative quotes. In-depth accounts provided.</li> </ul>
Housden <i>et al.</i> 2017[29]	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>No reflection on potential bias in data collection or analysis by authors.</li> <li>In-depth analysis. Rich illustrative quotes both HCP and patients.</li> </ul>
Kowalski <i>et al.</i> 2018[28]	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Relationship between authors and study participants unclear. Authors appear to be involved data collection, analysis and subsequent SMA implementation. This source of potential bias not discussed.</li> <li>Rich quotes included in narrative with participant occupation reported. Lots of thin quotes covering lots of aspects mapped onto CFIR framework. Difficult to untangle SMAs from SMA-with peer 2 peer support.</li> </ul>
*Lavoie <i>et al.</i> 2013[30]	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Unclear how providers were identified, how many were invited and how many declined or for what reason. Potential researcher bias not discussed</li> <li>Rich data with illustrative quotes presented without reporting patient practitioner characteristics.</li> </ul>

1	Miller <i>et al.</i> 2004[33]	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Yes	Yes	Yes	Moderately	<ul style="list-style-type: none"> <li>Unclear if any participants declined to participate in an interview or why. Potential researcher bias not discussed.</li> <li>Qualitative data very thin, no quotations provided.</li> </ul>
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4	Siple <i>et al.</i> 2015[20]	Yes	Yes	Yes	Can't tell	Yes	No	Can't tell	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Participant recruitment not described. Reasons for declining invitation not reported. Focused on views of diabetes self-management (which so happened to be via SMA) so less of SMA experience.</li> <li>Quotes are available but themes linked with factors influencing their self-care/motivation and less about SMA experience. Views of wives/carers not presented.</li> </ul>
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8	Stevens <i>et al.</i> 2014[21]	Yes	Yes	Yes	Can't tell	Yes	Can't Tell	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Recruitment strategy not reported. Not clear if any participants declined to participate in an interview. Potential researcher bias not discussed.</li> <li>Quotes from HCP and patents included with participant characteristics. Qualitative data thin.</li> </ul>
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12	Stowell <i>et al.</i> 2015[22]	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Can't tell	Can't tell	Yes	Low	<ul style="list-style-type: none"> <li>Recruitment procedure not reported. No reflection on researcher bias. Unclear if ethical approval or informed consent required and/or obtained. No description of qualitative data analysis given.</li> <li>No qualitative data reported - no quotations. Interview findings combined with survey findings and authors narrative does not contain quotes.</li> </ul>
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16	Stults <i>et al.</i> 2016[32]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Reasons for declining study invitation not reported. Potential researcher bias not discussed.</li> <li>Provides rich data. Quotes together with participant characteristics reported-age, gender SMA attended, Only data from patients attending SMAs for chronic condition extracted.</li> </ul>
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20	Thompson <i>et al.</i> 2014[24]	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Unclear how participants were selected and contacted. Whether any declined to take part.</li> <li>Some quotes (without participant characteristics) provided in a table with themes and key findings, thin data.</li> </ul>
21												
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24	Thompson-Lastad (2018)[31]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Reflection on potential researcher bias and influence on group dynamics not discussed.</li> <li>Limitation: some SMAs were run for non-long-term conditions therefore coding of only experiences/data that refers to long-term condition SMAs. Lots of rich qualitative data (quotes).</li> </ul>
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29	Tokuda <i>et al.</i> 2016[26]	Yes	Yes	Yes	Yes	Yes	No	Yes	Can't tell	Yes	Very	<ul style="list-style-type: none"> <li>Qualitative data analysis process not reported. Potential researcher bias not discussed.</li> <li>Quotations (without patient characteristics) included to support findings, rich data.</li> </ul>
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33	*Wong <i>et al.</i> 2015[27]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Relationship between researcher and participants unclear. Potential researcher bias not discussed.</li> <li>Rich data. Quotes (without participant characteristics) provided to support key findings.</li> </ul>
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HCP= healthcare practitioner



# The ENTREQ Checklist

Enhancing transparency in reporting the synthesis of qualitative research

Item	Guide and description	Reported on page
Aim	State the research question the synthesis addresses.	5
Synthesis methodology	Identify the synthesis methodology or theoretical framework which underpins the synthesis, and describe the rationale for choice of methodology (e.g. <i>meta-ethnography, thematic synthesis, critical interpretive synthesis, grounded theory synthesis, realist synthesis, meta-aggregation, meta-study, framework synthesis</i> ).	5 & 6
Approach to searching	Indicate whether the search was pre-planned ( <i>comprehensive search strategies to seek all available studies</i> ) or iterative ( <i>to seek all available concepts until they theoretical saturation is achieved</i> ).	5
Inclusion criteria	Specify the inclusion/exclusion criteria (e.g. <i>in terms of population, language, year limits, type of publication, study type</i> ).	5
Data sources	Describe the information sources used (e.g. <i>electronic databases (MEDLINE, EMBASE, CINAHL, psycINFO, Econlit), grey literature databases (digital thesis, policy reports), relevant organisational websites, experts, information specialists, generic web searches (Google Scholar) hand searching, reference lists</i> ) and when the searches conducted; provide the rationale for using the data sources.	5
Electronic Search strategy	Describe the literature search (e.g. <i>provide electronic search strategies with population terms, clinical or health topic terms, experiential or social phenomena related terms, filters for qualitative research, and search limits</i> ).	5 and Supplementary file 1
Study screening methods	Describe the process of study screening and sifting (e.g. <i>title, abstract and full text review, number of independent reviewers who screened studies</i> ).	6
Study characteristics	Present the characteristics of the included studies (e.g. <i>year of publication, country, population, number of participants, data collection, methodology, analysis, research questions</i> ).	97, Table 1- p8, Table 2 p13
Study selection results	Identify the number of studies screened and provide reasons for study exclusion (e.g. <i>for comprehensive searching, provide numbers of studies screened and reasons for exclusion indicated in a figure/flowchart; for iterative searching describe reasons for study exclusion and inclusion based on modifications to the research question and/or contribution to theory development</i> ).	Figure 1, p7

## The ENTREQ Checklist

Enhancing transparency in reporting the synthesis of qualitative research

Rationale for appraisal	Describe the rationale and approach used to appraise the included studies or selected findings ( <i>e.g. assessment of conduct (validity and robustness), assessment of reporting (transparency), assessment of content and utility of the findings</i> ).	P6
Appraisal items	State the tools, frameworks and criteria used to appraise the studies or selected findings ( <i>e.g. Existing tools: CASP, QARI, COREQ, Mays and Pope [25]; reviewer developed tools; describe the domains assessed: research team, study design, data analysis and interpretations, reporting</i> ).	P6
Appraisal process	Indicate whether the appraisal was conducted independently by more than one reviewer and if consensus was required.	P6
Appraisal results	Present results of the quality assessment and indicate which articles, if any, were weighted/excluded based on the assessment and give the rationale.	P7 Supplementary File 2,
Data extraction	Indicate which sections of the primary studies were analysed and how were the data extracted from the primary studies? ( <i>e.g. all text under the headings "results /conclusions" were extracted electronically and entered into a computer software</i> ).	P6
Software	State the computer software used, if any.	P6
Number of reviewers	Identify who was involved in coding and analysis.	P6
Coding	Describe the process for coding of data ( <i>e.g. line by line coding to search for concepts</i> ).	P6
Study comparison	Describe how were comparisons made within and across studies ( <i>e.g. subsequent studies were coded into pre-existing concepts, and new concepts were created when deemed necessary</i> ).	P6
Derivation of themes	Explain whether the process of deriving the themes or constructs was inductive or deductive.	P6
Quotations	Provide quotations from the primary studies to illustrate themes/constructs, and identify whether the quotations were participant quotations of the author's interpretation.	Table 3, - p16 and Table 4- p21
Synthesis output	Present rich, compelling and useful results that go beyond a summary of the primary studies ( <i>e.g. new interpretation, models of evidence, conceptual models, analytical framework, development of a new theory or construct</i> ).	P23-26

# BMJ Open

## Barriers and facilitators to implementation of shared medical appointments in primary care for the management of long-term conditions: a systematic review and synthesis of qualitative studies

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<b>Primary Subject Heading</b>:	General practice / Family practice
Secondary Subject Heading:	General practice / Family practice, Health services research, Health policy
Keywords:	GENERAL MEDICINE (see Internal Medicine), HEALTH SERVICES ADMINISTRATION & MANAGEMENT, PRIMARY CARE, QUALITATIVE RESEARCH

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4 1 **Barriers and facilitators to implementation of shared medical appointments in**  
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7 2 **primary care for the management of long-term conditions: a systematic review**  
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10 3 **and synthesis of qualitative studies**  
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For peer review only

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4 24 **ABSTRACT**

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6 25 **Objective:** To synthesise the published literature on practitioner, patient and carer views and  
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8 26 experiences of shared medical appointments (SMAs) for the management of long-term  
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11 27 conditions in primary care.

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13 28 **Design:** Systematic review of qualitative primary studies.

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16 29 **Methods:** A systematic search was conducted using MEDLINE (Ovid), PsycINFO (Ovid),  
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18 30 CINAHL (EBSCOhost), Web of Science, Social Science Premium Collection (Proquest) and  
19  
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21 31 Scopus (SciVerse) from database starting dates to June 2019. Practitioner, patient and carer  
22  
23 32 perspectives were coded separately. Deductive coding using a framework approach was  
24  
25 33 followed by thematic analysis and narrative synthesis. Quality assessment was conducted using  
26  
27 34 the Critical Appraisal Skills Programme for qualitative studies.

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29 35 **Results:** We identified 18 unique studies that reported practitioner (n=11), patient (n=14)  
30  
31 36 and/or carer perspectives (n=3). Practitioners reported benefits of SMAs including scope for  
32  
33 37 comprehensive patient-led care, peer support, less repetition and improved efficiency  
34  
35 38 compared to 1:1 care. Barriers included administrative challenges and resistance from patients  
36  
37 39 and colleagues, largely due to uncertainties and unclear expectations. Skilled facilitators,  
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39 40 tailoring of SMAs to patient groups, leadership support and teamwork were reported to be  
40  
41 41 important for successful delivery. Patients' reported experiences were largely positive with the  
42  
43 42 SMAs considered a supportive environment in which to share and learn about selfcare, though  
44  
45 43 the need for good facilitation was recognised. Reports of carer experience were limited but  
46  
47 44 included improved communication between carer and patient.

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49 45 **Conclusions:** There is insufficient evidence to indicate whether views and experiences vary  
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51 46 between staff, medical condition and/or patient characteristics. Participant experiences may be  
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4 47 subject to reporting bias. Policies and guidance regarding best practice need to be developed  
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6 48 with consideration given to resource requirements. Further research is needed to capture views  
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8 49 about wider and co-occurring conditions, to hear from those without SMA experience and to  
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11 50 understand which groups of patients and practitioners should be brought together in an SMA  
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13 51 for best effect.  
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18 53 **Registration:** Prospero registration no. CRD42019141893.

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21 54 [https://www.crd.york.ac.uk/prospero/display\\_record.php?RecordID=141893](https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=141893)  
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26 56 **Keywords:** Shared medical appointments, qualitative, chronic disease, long-term condition,  
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28 57 self-management, systematic review  
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### 32 33 34 59 **STRENGTHS AND LIMITATIONS OF THIS STUDY**

- 35  
36 60 • Focus on qualitative evidence provides rich insights into barriers to implementation of  
37  
38 61 SMAs in primary care from the perspectives of practitioners, patients and carers.  
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41 62 • Robust search strategy, based on previous high-quality reviews; refined to allow us to  
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43 63 better identify qualitative research  
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46 64 • The thematic synthesis approach has enabled the identification of analytical themes  
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48 65 that offer a new interpretation practitioner and patient experiences of SMAs beyond  
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50 66 earlier reviews.  
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53 67 • Rapidly evolving area of practice and publications and the most recent evidence may  
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55 68 be missing  
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58 69 • Grey literature was excluded from the synthesis  
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22 79 analysis or interpretation of data or in the writing of the manuscript.  
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30 **81 Competing interests**31  
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33 82 None to declare34  
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38 **84 Checklist**

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40 85 See supplementary material for ENTREQ checklist (Enhancing transparency in reporting the  
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42 86 synthesis of qualitative research)  
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## 88 INTRODUCTION

89 Over 15 million people in England are living with one or more long-term conditions [1]. Such  
90 multimorbidity is more prevalent in those over 65 years, and in socio-economically deprived  
91 areas [2,3]. Long-term conditions require ongoing disease management and care, which  
92 consumes a significant amount of healthcare service delivery time [4]. Models of care that  
93 support patient self-management (or self-care) are at the centre of government policies  
94 worldwide [5] including NHS plans [6,7]. Shared medical appointments (SMAs), or group  
95 consultations, have been promoted as a new way of delivering primary care, to simultaneously  
96 improve patient self-management and resource use efficiency[8,9].

98 SMAs typically involve a group of patients with the same long-term condition(s) meeting with  
99 one or more healthcare practitioners. In contrast to group education programmes, the SMA  
100 usually replaces a 1:1 appointment and may include physical examinations, medication  
101 adjustments or other clinical interventions[8,10]. It has been theorised that SMAs may improve  
102 patient self-efficacy by enabling participants to witness the consultation experiences of others  
103 and observe disease management strategies of peers who act as realistic role models for their  
104 own self-care [4,10]. Whilst there is some evidence that SMAs can support self-management  
105 of long-term conditions [4], it is important to understand the feasibility and acceptability of  
106 implementing SMAs from the perspectives of primary healthcare practitioners, patients and  
107 carers to ascertain if this model of care can meet their needs and reduce health inequalities.

109 It has been reported that practitioners enjoy SMAs, sighting benefits including development of  
110 team relationships, learning from patients, more variety in work [4,10]. Patients attending

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4 111 SMAs have also reported feelings of socialisation or normalisation of a condition, increased  
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6 112 trust with healthcare practitioners and enhanced knowledge [4,11]. However, a small number  
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8 113 of studies have reported patient concerns, including confidentiality and being unclear about the  
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10 114 purpose of a session [4]. Providers have reported concerns around insufficient clinician and  
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12 115 group facilitation training for SMAs and the need for suitable premises [4,11,12]. Earlier  
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14 116 reviews have focused on secondary care [4] which is typically disease specific with time-  
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16 117 limited follow-up after specialist treatment [11]. In contrast, primary care has an emphasis on  
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18 118 ongoing disease management, often including multiple conditions, and care continuity. Hence  
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20 119 this systematic review of qualitative research aims to provide an in-depth insight into the  
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22 120 experiences and perceptions of SMAs for the management of long-term conditions in primary  
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24 121 care including identifying barriers and facilitators regarding implementation.  
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34 123 Review research questions:

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36 124 1. What are patient and practitioner views and experiences of SMAs in primary care?  
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38 125 2. Do these views and experiences vary by long-term condition and/or other patient/  
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40 126 practitioner characteristics?  
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42 127 3. What does the literature tell us about potential barriers and facilitators to the delivery  
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44 128 and uptake of SMAs in primary care?  
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## 51 52 130 **METHODS**

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54 131 A systematic review and narrative synthesis of qualitative studies was conducted.  
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### 58 59 133 **Search strategy and selection criteria**

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4 134 We searched MEDLINE (Ovid), PsycINFO (Ovid), CINAHL (EBSCOhost), Web of Science,  
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6 135 Social Science Premium Collection (Proquest) and Scopus (SciVerse) from database start dates  
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8 136 to June 2019. A combination of keywords and medical subject headings (MeSH) to locate  
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11 137 relevant qualitative studies were used. See Supplementary File 1. Database searches were  
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14 138 supplemented by forward and backward citation searches of the included papers.  
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18 140 Primary qualitative studies were included that: i) explored the views of primary healthcare  
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21 141 practitioners, staff, patients or carers that had been involved in the delivery of/ or attended  
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24 142 SMAs within primary care, ii) met our criteria to be classed as an SMA (group appointments  
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26 143 that: were intended to replace standard 1:1 appointments in general practice; were delivered by  
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29 144 primary care practitioners; and included clinical advice and management as well as peer  
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31 145 learning and support) iii) had a patient population with at least one long-term condition. For  
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34 146 studies in which participants delivered/attended SMAs for both long-term conditions and non-  
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36 147 long-term conditions, only data relating the former were extracted and synthesised. Papers were  
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39 148 excluded if i) the group session did not include an individual  
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41 149 assessment/examination/consultation with a primary healthcare professional; ii) papers  
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44 150 reporting survey data only, iii) it was not possible to extract data collected from participants  
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46 151 attending SMAs for long-term conditions from those attending SMAS for non-long-term  
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49 152 conditions (e.g. antenatal care).

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51 153 The title and abstracts of retrieved citations were double-screened and where there were  
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54 154 discrepancies, screeners met to reach agreement. All studies at the full-text stage were similarly  
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56 155 double-screened with any uncertainties resolved by discussion with a third member of the  
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59 156 review team.  
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6 158 **Quality assessment**

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8 159 Methodological quality of eligible studies was assessed by two independent reviewers using  
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11 160 the Critical Appraisal Skills Programme checklist for qualitative studies [13]. This was done  
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13  
14 161 to assess conduct (validity and robustness), transparency, content and utility of findings.  
15  
16 162 Studies were not excluded on the basis of this appraisal, as limited reporting is not necessarily  
17  
18 163 indicative of low quality research and risks the exclusion of appropriate studies [14]. The  
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21 164 strengths and limitations of each included study were considered during the analysis to ensure  
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23  
24 165 that findings from unreliable studies did not unduly influence our results [15].

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26 16627  
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29 167 **Data extraction and synthesis**

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31 168 Key characteristics of the included studies and study participants were recorded using a data  
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33  
34 169 extraction form, with the extracted data double-checked by another team member. Full text  
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36  
37 170 papers were then imported into NVivo (version 12). A framework based on themes previously  
38  
39 171 identified by reviews [4,10] was used to deductively code participant quotes and authors'  
40  
41 172 interpretations in the results and discussion sections of the studies. All data was coded by one  
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43  
44 173 reviewer then checked by a second. Data reflecting the views of practitioner, patients and carers  
45  
46 174 were analysed separately.

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48  
49 175 Data excerpts were compared and contrasted and descriptive themes were formed by merging  
50  
51 176 codes and grouping them around existing themes [4] and emerging themes. This included  
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53  
54 177 condensing the existing themes into related /discordant subthemes which were subsequently  
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56  
57 178 translated into higher-level themes to better answer the research questions. Texts were re-read  
58  
59 179 and data re-coded according to newly structured thematic framework through an iterative  
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4 180 process to ensure these themes best reflected the data. Data excerpts were then examined to  
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6 181 look for similarities and differences in the perspectives of practitioners or patients by  
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8 182 characteristics (e.g. gender, age).

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10  
11 183 The ENTREQ (Enhancing transparency in reporting the synthesis of qualitative research)  
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13 184 checklist was used for reporting this review, see supplementary material.

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### 17 18 186 **Patient and public involvement (PPI)**

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20  
21 187 The proposed programme of shared medical appointment research was presented to a PPI panel  
22  
23 188 who provided their views and opinions about what potential barriers and facilitators to  
24  
25 189 attending an SMA might be from a patient perspective thus providing insights into potential  
26  
27 190 findings of the review. Our affiliated PPI group read and commented on the draft of this  
28  
29 191 manuscript and have identified several patient community groups through which to share a lay  
30  
31 192 summary of the research findings.

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## 35 36 194 **RESULTS**

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39 195 Figure 1 outlines the screening and selection process resulting in the inclusion of 18 studies in  
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41 196 the final synthesis.

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44 197 **>Insert< Figure 1 Flow diagram of review search**

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46  
47 198

### 48 49 199 **Quality appraisal**

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52 200 Quality of the included studies was generally high; most papers met the majority of the CASP  
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54 201 checklist criteria (Supplementary File 2). Weaknesses commonly related to lack of information

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4 202 about participant recruitment [16–22] and researcher reflexivity, which was missing in all but  
5  
6 203 two studies [23,24].  
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### 10 11 205 **Overview of included studies**

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13 206 Studies were published between 2004 and 2018 and are summarised in Table 1. Studies report  
14  
15  
16 207 the views and experiences of a total of 262 practitioners, 306 patients, and 39 carers. The  
17  
18 208 majority of studies were from North America, two were from Australia. Only two studies  
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20  
21 209 looked at the views of those healthcare professionals that were not delivering SMAs [22,25],  
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23  
24 210 the rest of the studies reported the views of individuals with experience of having delivered/  
25  
26 211 attended SMAs. One study [26] involved virtual SMAs, all others were face to face. One study  
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29 212 focused on an SMA for children [16].  
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Table 1 Overview of studies and participant characteristics

First author & date	Country	Methodology & data collection method	Participants: practitioners				Participants: patients				Participants: carers			
			N, job	Age range	% female	Ethnicity	N	Age, years	% female	Ethnicity	N	Age	% female	Ethnicity
Arney <i>et al.</i> 2018[23]	USA	Qualitative: interviews	35 (11 behavioural health staff, 18 AHP, 6 admin)	35–64 years	80	Varied: White 83%	0	N/A	N/A	N/A	0	N/A	N/A	N/A
Bauer <i>et al.</i> 2017[16]	USA	Qualitative: interviews and verbal feedback session	9 (5 paediatricians, 3 AHP, 1 NP)	NR	NR	100% White	41	6–14	24	Varied: 32% Black, 34% Hispanic/Latino, 18% White	34	53% <40 years, 23% ≥40 years	97	Varied: 33% Black, 47% Hispanic/Latino, 20% White
Cornelio-Flores <i>et al.</i> 2018[17]	USA	Mixed methods: focus groups and interviews	0	N/A	N/A	N/A	11	Mean 51.6	89	100% Hispanic	0	N/A	N/A	N/A
Drake <i>et al.</i> 2018[18]	USA	Mixed methods: focus groups and interviews	6 (physician, nurse, AHP, admin)	NR	NR	NR	8	NR*	NR*	NR*	0	N/A	N/A	N/A
Egger <i>et al.</i> 2015[19]	Australia	Mixed methods: interviews	8 GPs	NR	NR	NR	NR*	NR*	NR*	NR*	0	N/A	N/A	N/A
Housden <i>et al.</i> 2016 [25]	Canada	Qualitative: interviews	7 NP	NR	86	NR	0	N/A	N/A	N/A	0	N/A	N/A	N/A
Housden <i>et al.</i>	Canada	Qualitative:	12 NP	NR	NR	NR	12	40–79	58	Varied: 83%	0	N/A	N/A	N/A



							Euro-Canadian								
2017[27]		interviews and observations													
Kowalski <i>et al.</i> 2018[28]	USA	Qualitative: interviews	28 (physicians, nurses, AHPs, facilitators and researchers)	NR	NR	NR	0	N/A	N/A	N/A	0	N/A	N/A	N/A	
**Lavoie <i>et al.</i> 2013[29]	Canada	Qualitative: interviews	34 (10 physicians, 7 NP, 2 nurses, 4 admin, 11 AHPs)	NR	NR	NR	29	Mean 62	66	Varied: 55% White, 45% Aboriginal	0	N/A	N/A	N/A	
Miller <i>et al.</i> 2004[30]	USA	Mixed methods: interviews	0	N/A	N/A	N/A	26	NR*	NR*	NR*	0	N/A	N/A	N/A	
Siple <i>et al.</i> 2015[20]	USA	Qualitative: focus groups	0	N/A	N/A	N/A	18	30-80	6	NR	3	NR	100	NR	
Stevens <i>et al.</i> 2014[21]	Australia	Qualitative: focus groups	46 (GP, nurse, AHP, admin)	NR	67	NR	49	30-70	43	Varied: 90% non-indigenous	0	N/A	N/A	N/A	
Stowell <i>et al.</i> 2015[22]	USA	Mixed methods: interviews	13 medical students	NR	NR	NR	4	NR*	NR*	NR*	0	N/A	N/A	N/A	
Stults <i>et al.</i> 2016[31]	USA	Qualitative: focus groups	0	N/A	N/A	N/A	30	52-93	33	Varied: 87% White, 7% Hispanic/Latino, 3% Asian/Pacific Islander	0	N/A	N/A	N/A	
Thompson <i>et al.</i>	Canada	Qualitative:	0	N/A	N/A	N/A	9	46-62	0	Varied:	0	N/A	N/A	N/A	

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4	<i>al.</i> 2014[24]		semi-structured interviews								'predominantly' White				
5															
6	Tokuda <i>et al.</i> 2016[26]	USA	Mixed methods: focus groups and interviews	2, NP, AHP	NR	NR	NR	15	NR*	NR*	NR*	2	NR	NR	NR
7															
8															
9															
10	Thompson-Lastad (2018)[32]	USA	Ethnography: ethnographic observations interviews conducted in English and Spanish	28 (13 doctors, 1 NP, 5 AHPs, 8 admin)	NR	79	Varied: 54% White	25	Mean 58	72	Varied: 60% Back / African American	0	N/A	N/A	N/A
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19	**Wong <i>et al.</i> 2015[33]	Canada	Qualitative: interviews	34 (10 physicians, 7 NP, 2 nurses, 4 admin, 11 AHPs)	NR	NR	NR	29	Mean 62	66	Varied: 55% White, 45% Aboriginal	0	N/A	N/A	N/A
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215 \* Data given for SMA attendees but not separately for study participants

216 \*\* Same study participants, different data analysis

217 NA- not applicable, NR = not recorded. Occupations; GP = general practitioner, NP = nurse practitioner, AHP = Allied Health Professional, including pharmacists, dieticians, psychologists, social worker, substance abuse counsellor, nutritionist. Admin=Administrators included healthcare/programme managers, primary care/group visit coordinators. Carers included parents/guardians, wives and social support.

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4 221 The healthcare practitioner views most commonly reported were General Practitioners (GPs),  
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6 222 family physicians, practice nurses and nurse practitioners [16,18,33,19,21,24,25,27–29,32].  
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8 223 Fewer studies captured the views of healthcare managers, programme/research coordinators  
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11 224 and administrators [18,21,23,28,29,32,33].  
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14 225  
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16 226 The SMAs varied in terms of content, duration, numbers of attendees and frequency of  
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18 227 sessions. The majority of studies focused on single condition SMAs (n=12), three reported on  
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20  
21 228 both single condition and mixed condition SMAs [29,31,33] and two on mixed condition  
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24 229 SMAs only[27,30], and one gave no details [25]. ‘Mixed condition’ SMAs were for patients  
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26 230 with one or more of a number of different conditions, thus included those with one condition  
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29 231 and those with multimorbidity. Studies of SMAs for diabetes were most common (n = 15). A  
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31 232 summary of the SMAs is given in Table 2.  
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233 Table 2 Characteristics of SMAs delivered in reviewed studies

First author & date	Description of SMAs						
	Duration (minutes)	No. attendees	No. of sessions	Frequency	Long-term condition(s) upon which SMA(s) focused	Attendees	Setting
Arney <i>et al.</i> 2018[23]	NR	5 – 7	4	NR	Diabetes (type 1)	Veterans	Hospital and community
Bauer <i>et al.</i> 2017[16]	60 - 75	NR	5	Monthly	ADHD	School age children	Academic centre and community
Cornelio-Flores <i>et al.</i> 2018[17]	NR	NR	9	Weekly	Chronic pain	Adults, Spanish-speaking Latino population, average age 51.6 years, 89% female	Hospital and community
Drake <i>et al.</i> 2018[18]	120	NR	8	Monthly	Diabetes (type 2)	Adults, varied ethnicity (74% Black/African- American), average age 55.1, 72% female	Medical Home providing primary care services.
Egger <i>et al.</i> 2015[19]	90	3 – 15	3	Monthly	Multiple single condition SMAs: diabetes (type 2), chronic pain, weight loss, general long-term conditions	Adults, 5% Aboriginal/Torres Strait Islander, aged between 24 – 86 years	Health centres
Housden <i>et al.</i> 2016[25]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Housden <i>et al.</i> 2017[27]	N/A	N/A	N/A	N/A	Healthy living and nutrition focused mixed SMA for patients with diabetes, obesity, heart disease and/or arthritis	Adults incl. individuals with concurrent disorders, refugees, those with addiction or other mental health conditions, young adults, women, and individuals from First Nations.	Community and primary care
Kowalski <i>et al.</i> 2018[28]	120	8 – 10	NR	NR	Diabetes	Veterans	Veterans Affairs health systems
*Lavoie <i>et al.</i> 2013[29]	average 90	12 – 20	NR	NR	Single condition SMAs for chronic pain or diabetes and mixed SMAs for	Adults, living in rural communities	Primary health care services

					multimorbidities including, diabetes, hypertension, and arthritis		
Miller <i>et al.</i> 2004[30]	90 (+30 1:1)	7	6	Monthly	Mixed SMAs for one or mixed morbidity including cardiovascular disease, diabetes, and osteoarthritis	Adults, varied ethnicity (71% Hispanic/Latino), aged 40-64 years (mean 50), 100% female	Community health centres.
Siple <i>et al.</i> 2015[20]	NR	NR	4	NR	Diabetes (type 2)	Veterans	Veteran Association Health Care System
Stevens <i>et al.</i> 2014[21]	NR	NR	NR	NR	Diabetes or pre-diabetes (type 2)	Adults with diabetes or pre-diabetes	Regional medical centres
Stowell <i>et al.</i> 2015[22]	NR	NR	NR	NR	Diabetes	Adults with type 2 diabetes	Not specified
^Stults <i>et al.</i> 2016[31]	NR	NR	NR	NR	Single condition SMAs (1) prediabetes management, (2) type 2 diabetes management, (3) Successful Aging that covered issues of concern for seniors (memory, falls, and depression), (4) mind-body management, and (5) men's physicals.	Not specified	Primary care practices
Thompson <i>et al.</i> 2014[24]	NR	NR	24	Monthly	Diabetes (or at risk of)	Not specified	Community health centre that serves marginalised and vulnerable patients.
Thompson-Lastad (2018)[32]	60 - 120	NR	NR	Weekly	Single condition SMAs: Hypertension, mental health condition, chronic back pain, pre-diabetes, and diabetes*^	Low-income adults	Community health centres
Tokuda <i>et al.</i> 2016[26]	120	3 - 5	6	Weekly-bimonthly	Diabetes for > 10 years	Adults, varied ethnicity (55% Asian/Pacific Islander) mean age 60.4 years, 0% female	video-SMA to community-based outpatient clinic

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						Single condition SMAs for chronic pain or diabetes and mixed SMAs for mixed diagnosis including, diabetes, hypertension, and arthritis	Adults living in rural communities	Community and primary care
	*Wong <i>et al.</i> 2015[33]	60 – 90	9 – 15	NR	Weekly- quarterly			

234 \* Same study, two papers

235 ^ Study include SMAs run for non-chronic health conditions. Data extracted for long-term conditions.

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For peer review only

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4 237 **Narrative synthesis**

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6 238 Tables 3 and Table 4 present the findings of the analysis of practitioner and patient  
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8 239 perspectives, respectively. Each table outlines examples of codes that were used to group the  
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11 240 data into subthemes, which were subsequently translated into higher level themes. Practitioner  
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13 241 themes were: ‘advantages and benefits’, ‘barriers and challenges’ and ‘implementation success  
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16 242 and sustainability’.

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Table 3 Views and experiences of practitioners and staff

Themes	Subthemes	Exemplar codes	Exemplar quotes and data
Advantages and benefits	Comprehensive patient led care	Multi-disciplinary care, patient-led, increase patient understanding, increase practitioner understanding	<i>... "one person's worried about hyperglycemia and another person's worried about nocturia, and another person's worried about their vision you get information that can be both preventative and curative all in the same visit."</i> NP [25]
	Peer support and accountability	Normalise condition, offer support, share experiences, encourage accountability, increases motivation	<i>"The biggest part is just that they [the patients] get to kind of feed off of each other and they talk about what works and what doesn't... I think that the fact that they can help teach each other is most important."</i> Dietician [23]
	Efficiency and lower cost	More efficient, less repetition, improved access, costs	<i>"It's [Gmvs] kind of a win all around because when you increase your productivity you increase access for patients, your waiting times go down... we're better able to meet evidence-based guidelines because there's a team taking care of patients rather than a single provider."</i> (Provider #1) [33]
Barriers and challenges to adoption and implementation	Patient resistance and suitability	Accustomed to 1:1 appointment, not for all patients, attached to physician, confidentiality	<i>"Definitely the top barrier will be convincing the patients to show up. We invite an average of 10 people and we usually have between 4 and 7 who come and continue to show up. I think patient buy-in is definitely a barrier."</i> Primary care physician [28]
	Role adjustment and uncertainties	Colleague resistance, self-efficacy/new skills, power relationships, managing peer interaction	<i>"I've got to tell you, it's a hard sell with physicians. Even now, I don't have a champion for the diabetes SMA. They see it as extra work. They don't see the added value. It troubles me a lot that it's so hard to get the docs involved."</i> Nurse [28]



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	Administrative & resource challenges	Coordinating schedules, patient reminders, funding and billing, lack of space/rooms, staff shortage, busy staff	Author interpretation: <i>NPs described how physical space, administrative time, and buy-in were major barriers to the diffusion of GMVs. Many NPs described the challenges of lacking regular office space or having limited administrative time, which required them to engage in clinical organization during personal or unpaid time.</i> [25]
	Skilled facilitator	Facilitator- important, group management	Author interpretation: <i>The role of the facilitator was thought to be crucial to the successful operation of the group, and selection and training for the facilitator was seen as crucial to success.</i> [21]
Implementation success and sustainability	Tailored to patient groups	Patient background, disease stage	“...critical that we [the video-SMA providers] were sensitive and expressed a value for diversity; that we were conscious of the dynamics inherent to the participant’s cultures especially in the group interaction and demonstrated that we [the video-SMA providers] had knowledge regarding these differences and were willing to adapt our service delivery”. Provider [26]
	Leadership, teamwork and communication	Leadership, teamwork, communication, collegiality	“It cannot be one person because the key word is ‘sustainability.’ If that person ever leaves or something ever happens, everything falls apart,” Administrator [18]  “I think speaking to the importance of research and teamwork, getting people together for the betterment of patient care and the collegial approach to doing the kind of thing that brings people from different disciplines together, particularly nursing and the primary care providers. I think that’s where we’ve got to wear that cap to get the right people engaging and working together” Administrator and primary care physician [23]

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4 246 Advantages and benefits

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6 247 *Comprehensive patient led care*

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8 248 Practitioners viewed the care delivered via SMA to be more comprehensive [25,29,33] and  
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11 249 better suited to supporting self-management than 1:1 appointments [18]. Longer appointment  
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13 250 times enabled a range of issues and concerns to be covered in the one session [18,22,25] and  
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16 251 provided the opportunity for patients and practitioners to develop a care plan together  
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18 252 [18,29,33]. Practitioners reflected that the group sessions had improved their own practice as  
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21 253 they were able to gain further insights into patient circumstances, their conditions and the  
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24 254 challenges to self-management that patients face in their daily lives [16,25,27–29].  
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26 255 Practitioners believed the presence of multiple clinicians with complementary expertise in the  
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29 256 SMAs enabled more holistic care [23].

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34 258 *Peer support and accountability*

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36 259 Practitioners valued the peer support afforded to patients by group appointments  
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39 260 [19,23,28,32,33], believing patients benefitted from listening to the experiences of their peers  
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42 261 and from hearing responses to other participants' questions [22]. This in turn helped them to  
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44 262 understand their condition better and how best to manage it [19,23]. Practitioners said patients  
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47 263 were able to relate to each other which helped to normalise their conditions [16], and provide  
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49 264 confidence in self-management [17]. Some clinicians explained there was '*cathartic value*' or  
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52 265 '*therapeutic effect*' from patients sharing with others in the group their personal story of disease  
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54 266 management [16,21,29]. The group format also enabled collective problem solving with  
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57 267 clinicians and peers [33]. Two studies also reported that practitioners believed that patients felt  
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59 268 accountable to other group members which increased their motivation to reach their self-set  
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4 269 goals [28,29]. However, a clinician in another study reported that the peer-to-peer support  
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6 270 element of the SMA, *'didn't work very well'* when two patients were paired together who were  
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8 271 both *'non-compliant'* and *'didn't give off the best information'* [28].  
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### 12 13 273 *Efficiency and lower cost*

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16 274 Clinicians reported that they found the sessions enjoyable and made their work less repetitive  
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18 275 [21,22,28] less rushed, and more relaxed [21]. GPs and other managerial staff perceived SMAs  
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20 276 to be more time efficient and cost-effective than usual 1:1 appointments [19,28,33] and  
21  
22 277 improved patient access to healthcare [28,33]. The multidisciplinary nature enabled them to  
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24 278 get *'a lot of work done'* [23] and meet evidence-based guidelines [33]. However, nursing staff  
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26 279 did not report time and cost efficiencies, rather they described the additional time and resources  
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28 280 involved in setting-up the SMAs.  
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### 35 36 282 Barriers and challenges to adoption and implementation

#### 37 38 283 *Patient resistance and suitability*

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41 284 Nurse practitioners without SMA experience had concerns about recruitment and attendance,  
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43 285 as patients were *'historically'* and *'culturally'* accustomed to receiving 1:1 care [25]. They also  
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45 286 expressed concerns over the appropriateness of group sessions for some patient population  
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47 287 groups, particularly those with *'concurrent disorders'* that *'can't keep to the time line or sit*  
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49 288 *long enough'* [25]. Lack of motivation to improve health [21] and reluctance to share  
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51 289 information in a group setting were perceived reasons why patients may not attend SMAs.  
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54 290 Concerns about the ability to maintain patient confidentiality during the group session were  
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4 291 raised, but *'lessened when it was explained that this is dealt with through a signed*  
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6 292 *confidentiality agreement'* [21,22].  
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11 294 Practitioners with SMA experience reported that the top barrier to implementing SMAs was  
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13 295 *"convincing the patients to show up"* [28]. Patients were reported to be reluctant to take part in  
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16 296 a group because they did not want to disclose medical history and health complaints to peers  
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18 297 [23] and in one case this was thought to contribute to SMAs being a short-lived and  
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21 298 unsuccessful innovation [27]. Some providers described how they spent time identifying  
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24 299 patients they thought might be *'willing to attend'* and did not invite those whom they felt were  
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26 300 *'less suited'* to SMAs such as those who were hard of hearing, who had limited English  
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29 301 speaking skills or who were uncomfortable in a group [33].  
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### 32 33 303 *Role adjustment and uncertainties*

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36 304 Nurse practitioners experienced difficulties encouraging other staff within the practice to *'buy-*  
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38 305 *in'* and support the SMAs [23,28], reporting it being a *'hard sell'* to doctors who perceived  
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41 306 them as *'extra work'* [28]. There was uncertainty and hesitancy amongst practitioners about  
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44 307 SMAs, what was expected of them. Some practitioners reported how SMAs changed the  
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46 308 dynamics between patients and provider, with practitioners tending to step back or keep quiet  
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49 309 and allow patients to explore and discuss and problem solve between themselves [29,32] but  
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51 310 intervene if misinformation was shared [32]. A clinician with no previous experience of group  
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54 311 care was initially concerned, recognising that different skills were needed for SMAs. Yet, with  
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56 312 minimal coaching, she was *'surprised at how easy'* it was to sit back, observe and listen rather  
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59 313 than having the burden of needing to *'always know the answers'* [16]. One study [27] reported  
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4 314 that there were changes in the power dynamics between professionals particularly between NPs  
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6 315 and GPs, as the former often take the lead in delivery of SMAs. One NP reported being irritated  
7  
8 316 when the physician had minimal input during the SMA yet *'billed for the ten people that were*  
9  
10  
11 317 *in the group even though the NP had done all of the work, teaching, counselling and the*  
12  
13 318 *prescriptions.* [25]

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16 319

### 18 320 *Administrative & resource challenges*

21 321 The most commonly cited challenge to implementing SMAs was the large number of  
22  
23 322 administrative tasks involved in setting them up [16,19,21–23,25,28,33] clinicians reporting  
24  
25 323 they can be particularly burdensome for 'non-medical staff' [22]. This included: the  
26  
27 324 coordination of schedules for multi-disciplinary teamwork [16,21–23,28], access to the  
28  
29 325 technological systems and support staff required to organise SMAs [25,26], identification of  
30  
31 326 participants suitable for SMAs [28,33], difficulties in reminding patients of appointment times,  
32  
33 327 and the preparation of clinical notes and documentation for each SMA. In the context of the  
34  
35 328 US healthcare system, providers also expressed concerns over funding and billing for SMAs  
36  
37 329 [16,18,19,22,27,28,33], with insurance reimbursement issues perceived as a barrier to  
38  
39 330 providing SMAs. Lack of physical space to hold the SMAs was reported as key limitation  
40  
41 331 [16,23,27,28,33] as well as insufficient staff to support the adoption, implementation and  
42  
43 332 maintenance of SMAs [16,23,28] with some clinicians giving competing demands on their time  
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45 333 as a key challenge to implementation [23,28].

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### 49 335 *Implementation success and sustainability*

#### 52 336 *Skilled facilitator*

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4 337 Practitioners deemed the role of a facilitator to be crucial to success of SMAs [19,21,28,32,33].  
5  
6 338 They had an important role in making the atmosphere in the group session relaxed and  
7  
8 339 conducive to sharing [33]. However, not all clinicians were equipped with group facilitation  
9  
10  
11 340 skills, as one dietician reported having difficulties in managing patients in the group who were  
12  
13 341 ‘*over-bearing*’ and ‘*offensive*’ rather than supportive of other group members [28]. Nurses  
14  
15 342 reported that clinicians who could be flexible and were ‘*willing to take a back seat*’ were most  
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17  
18 343 suited to the SMA model of working [28].  
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#### 22 23 345 *Tailored to patient groups*

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25  
26 346 Several SMA studies were designed to target specific patient groups, for example veterans with  
27  
28 347 low health literacy [23] and underserved Spanish speakers [17]. Practitioners reported having  
29  
30 348 spent time identifying and designing the SMAs for these specific groups [33] and the need to  
31  
32 349 be sensitive to the cultural diversity of group participants [26]. For disease specific SMAs  
33  
34 350 clinicians acknowledged it was important to take into account the disease stage of the SMA  
35  
36 351 participant, as patients with more disease experience may ‘*more adequately influence*’ those  
37  
38 352 with less experience [21]. Most studies in this review did not describe the process by which  
39  
40 353 patients were selected and invited to attend. A NP believed that the SMAs they tried to  
41  
42 354 implement were unsuccessful because they weren’t organised and designed in a person-centred  
43  
44 355 way, rather the incentive for the practice was ‘*to see a bunch of people all at once and sign*  
45  
46 356 *off*’ [25].  
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#### 55 56 358 *Leadership, teamwork and communication*

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4 359 Two studies described the importance of having leadership support in order to adopt and  
5  
6 360 implement the innovation [23,28] to ensure sufficient time and resources were allocated to the  
7  
8 361 SMAs. A team-based approach and effective communication between members healthcare  
9  
10  
11 362 practitioners and practice staff was reported to be important for effective implementation,  
12  
13 363 maintenance and sustainability [18]. The delivery of care by multidisciplinary teams was also  
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16 364 considered a key strength of group appointments [23].  
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### 21 366 **Patient and carer view and experiences**

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23 367 A number of subthemes emerged from the patient and carers' perspectives within  
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26 368 overarching themes of 'benefits of SMAs' and 'barriers to SMA attendance and success', see  
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29 369 Table 4.  
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370 Table 4 Views and experiences of patients and carers

Themes	Subthemes	Exemplar codes	Exemplar quotes and data
Benefits of SMAs	Peer support	Feeling supported, reassurance	<i>‘I wasn’t the only one who had ADHD. It’s like there’s more people to know how it feels... I really don’t talk to anybody about my stuff I have to go through, so it was fun to tell people about it’</i> Patient ADHD [16]
	Vicarious learning and collective problem solving	Surrogate questioning and answers, listening and discussion, learning from peers’ experience	<i>‘I didn’t even want to go on the medication. To me it was no you know. But hearing it from her [another group member], how it worked for her, I decided to try it. And I’m glad I have, because it has helped me control it.’</i> Patient, diabetes [24]
	Motivation for self-management	Learn self-management strategies, improved self-management, accountability	<i>‘... you come out of the group feeling much more self-confident ... you’ve got your batteries recharged and you can really go till the next group ... it’s [Gmv] more motivating ... you want to do more yourself and rely less on others ... but then you always realize there’s others out there to help you if needed.’</i> Patient [33]
	Safe environment to share	Inviting and comfortable atmosphere, honesty, anonymity in group, enjoyment, more time	<i>‘I just noticed that, listening to the other people, they brought up some things that may have related to me that I felt were my weaknesses or things that I did that I wouldn’t wanna disclose because I might feel a bit of shame or embarrassment, but after hearing other people be open and honest, I think it gives me—or just allows you to be more honest yourself because you’ve already heard other people expose themselves or be honest. (Male, approximately 60 years old, type 2 diabetes SMA) [31]</i>
Barriers to SMA attendance and success	Cultural barriers	Dislike group work, confidentiality and privacy concerns, can’t relate to others,	Author interpretation: <i>One male stated he was ‘too busy’ to be sitting around in a doctor’s surgery for 90 minutes, although agreed that the total time taken for a consultation, with waiting time, etc, may equal this. [21]</i>
		dislike divided time and attention, lacking motivation/ interest in health, sessions too long	Author interpretation: <i>While some initially thought sharing information in the group situation was a problem, a concern over privacy tended to drop away after talking about this. ‘I suppose you don’t have to disclose what you don’t want to.’ (Female) [21]</i>



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5 Physical barriers

6 Accessibility of venue, transportation  
7 costs

8 *“I’m on a fixed income, I’m a retiree, and sometimes it gets a little expensive when*  
9 *you’re charting out what you can spend each month ... maybe if they could throw a*  
10 *little something in each month, like maybe \$10 for transportation or something. Don’t*  
11 *you think that would help?”* Patient, diabetes [18]  
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For peer review only

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4 372 Benefits of SMAs  
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6 373 *Peer support*  
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8 374 Most patients described feeling supported by others in the group [16,19,21,22,27–29], feeling  
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10 375 that ‘*they were not the only one*’ with their condition and enjoyed having a safe environment  
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13 376 in which to share their experiences and feelings [16]. Carers valued the group sessions  
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16 377 reporting the additional support they received from being able to share with others in their  
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18 378 situation [16].  
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24 380 *Vicarious learning and collective problem solving*  
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26 381 Patients described learning more about their condition, disease progression and treatment  
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28 382 options by listening to the lived experiences of others and observing and engaging with other  
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30 383 individuals at different stages of their disease [17,27]. Being able to ask multiple questions and  
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33 384 hearing answers to questions they had not thought to ask was very beneficial [19,25,27]. They  
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36 385 more readily absorbed/listened more closely to health-related information from peers than from  
37  
38 386 the clinician [20,24,32] because they knew they had experienced it themselves. Hearing the  
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41 387 experiences of others helped overcome feelings of isolation and provided patients with  
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44 388 reassurance in their ability to self-manage [19]. Support for SMAs was particularly strong from  
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46 389 those with previous health-related group experience [21]. Conversely, however, it was reported  
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49 390 that some patients did not want to attend any further SMAs because they did not want to talk  
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51 391 about their health concerns or listen to other people’s concerns in a group [33].  
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56 393 *Motivation for self-management*  
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4 394 Patients reported feeling more motivated to self-manage their condition(s) [17,18,20] and  
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6 395 accountable to others in the group to adhere to medication [26] and achieve goals that they set  
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8 396 themselves [18,28,29,31]. Veterans reported that they were using less medication following  
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11 397 the group session and were better able to self-manage their condition [20]. Similarly, carers  
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13 398 reported that their children had learned skills to manage their ADHD better [16].  
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18 400 *Safe environment to share*

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21 401 Some patients reported feeling anxious prior to attending SMAs and ashamed of how they  
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23 402 had been controlling their condition. However, once they had attended the SMA, they found  
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25 403 the session a safe environment in which to share and face their fears and they had developed  
26  
27 404 greater trust in their health practitioner [29,31]. Another study reported that some patients felt  
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29 405 the group environment was more relaxed and enjoyable than one to one appointments, as  
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31 406 ‘there is a certain level of anonymity in a group setting’ [29]. It was widely reported that  
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33 407 patients were satisfied with the care they received during the group sessions  
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35 408 [16,19,22,24,26,29,31].  
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43 410 *Barriers to SMA attendance and success*

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46 411 Some studies reported that patients expressed dislike or lack of interest in group appointments  
47  
48 412 [19,23]. Some patients also expressed reservations about sharing personal information and  
49  
50 413 about confidentiality prior to attending [19,21,23,30], especially in smaller communities [21];  
51  
52 414 however this was not a concern after attending the group session [19]. In the study of virtual  
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54 415 SMAs [26] some patients reported negative experiences including that the SMA was too big  
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56 416 (even though there were only 4 – 6 patients per SMA), and there was poor control of group  
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4 417 dynamics, but this might have been specific to the remote delivery. It was recognised that a  
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6 418 skilled facilitator improved enjoyment and engagement [24] and how providers communicate  
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8 419 and interact with patients during the appointment can affect their experience[20]. Others found  
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10  
11 420 it difficult to relate to other group members [30] or did not want to talk about their issues, nor  
12  
13  
14 421 hear other patients' issues in a group [33]. Some patients reported they would have liked more  
15  
16 422 individual time with the clinician [26,30] or to have seen their own doctor [21,31]. Barriers to  
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18 423 attendance included scheduling conflicts with other commitments [18]and transportation or  
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21 424 parking issues [28].  
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425

## 426 **DISCUSSION**

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29 427 This systematic review has identified a detailed literature, primarily from North America, that  
30  
31 428 provide rich accounts of practitioners involved in the delivery SMAs. Whilst most studies  
32  
33  
34 429 included patient perspectives, the richness of the supporting data varied between studies and  
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36 430 overall was lower compared with practitioner perspectives. The patient quotes reported to  
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39 431 support author interpretation were short and few in some studies and often demographic  
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41 432 information was missing limiting the readers ability to judge the transferability of the findings.  
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43  
44 433 There was notably less comparable evidence examining carer perspectives. The experiences of  
45  
46 434 some minority ethnic and indigenous groups were represented thus offering insights into the  
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48  
49 435 acceptability of SMAs for these patient groups. The systematic search and selection measures  
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51 436 enabled the identification and synthesis of data which has brought to light several additional  
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54 437 challenges to implementation.  
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4 439 Most practitioners and patients with experience of SMAs regarded them positively, and  
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6 440 reported several advantages compared to one-to-one appointments. GPs and nurse practitioners  
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8 441 with SMA experience, reported that they enjoyed the sessions, with several reporting they  
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10 442 helped overcome the repetition fatigue often associated with traditional consultations.  
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13 443 Practitioners also perceived SMAs could be a more efficient and effective way of delivering  
14  
15 444 care. Most patients valued the provision of peer support and reported that being able to share  
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17 445 and learn from each other helped improve their self-confidence and provided motivation to  
18  
19 446 reach their goals. However, this experience was not shared by all patients, with some reporting  
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21 447 that they were unable to relate to others in their group or that they felt others in the group talked  
22  
23 448 too much. This highlights the need for effective facilitation and careful patient selection in  
24  
25 449 order for SMAs to be successful.

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31 450  
32  
33 451 Some practitioners reported difficulties in recruiting patients and garnering support for the  
34  
35 452 delivery of SMAs from other practice colleagues. Notable barriers to SMA implementation  
36  
37 453 included insufficient staff, time and resources to set up and run SMAs. Practitioners were  
38  
39 454 concerned that patients would be reluctant to participate in a group appointment due to low  
40  
41 455 motivation, confidentiality concerns and preference for 1:1 appointments. Some patients also  
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43 456 expressed reservations about the group setting due to confidentiality concerns and desire for  
44  
45 457 more time to discuss individual needs.

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51 458  
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53 459 The positive experiences and perceived benefits of SMAs reported by practitioners and patients  
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55 460 in this review corroborate those reported previously [4,10], which suggests SMAs may offer  
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57 461 advantages in primary care similar to those in other healthcare settings. However, studies  
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4 462 included in this review may be subject to reporting bias due to a focus on attendees rather than  
5  
6 463 those who declined SMAs [4,10,11]. Staff and facilities inadequacies, patient participation and  
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8 464 attendance, group dynamic incompatibilities and cost-benefit concerns have been listed as  
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10  
11 465 barriers to implementation previously [9,11]. Our review of qualitative evidence provides  
12  
13 466 additional, deeper insights into barriers linked to organisational culture. We found practitioner  
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16 467 reports of difficulties in gaining support from colleagues in the wider practice, including  
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18 468 managerial staff, some of whom expressed negative attitudes towards SMAs. Furthermore,  
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21 469 SMAs involving multidisciplinary teams appear to challenge the traditional hierarchal role of  
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24 470 practitioners in primary care which leads to improved collegiality in some cases, and frustration  
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26 471 in others. This suggests that clear guidance and expectations around SMAs may not have been  
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28 472 effectively communicated within practices. Our review has also highlighted that SMAs appear  
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31 473 to be most successful when practitioners have designed and prepared SMAs for particular  
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34 474 patient groups, and this work is reported to be resource and time intensive. Practitioners report  
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36 475 mixed views about the efficiency of SMAs compared to 1:1 appointments in light of the time  
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38 476 and resources to set them up, which requires further exploration.

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### 43 478 **Limitations**

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46 479 Although the quality of included studies was generally good, most of the healthcare  
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48 480 professionals were GPs and nurse practitioners which may limit the generalisability of our  
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51 481 findings to other healthcare professionals in primary care such as pharmacists, physiotherapists  
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53  
54 482 and dieticians etc. Few studies provided rich detailed accounts of patient and carers, thus  
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56 483 insights offered from the literature are limited. Whilst PPI members were involved throughout  
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58 484 this review, we did not involve nor conduct member checking with practitioners. This would  
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4 485 have helped to strengthen the credibility of the review findings. Given that many of the patients  
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6 486 were recruited immediately after the SMAs, it is possible that patients with negative SMA  
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8 487 experiences or those who declined to participate may be missed, therefore the sample may be  
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11 488 biased [4,10,11]. Similarly, only two studies included the perspectives of practitioners not  
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13 489 implementing SMAs, therefore other perceived barriers may not have been captured.  
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16 490 Furthermore, the lack of researcher reflexivity reported in the studies highlighting a potential  
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18 491 source of bias, those involved in developing or delivering SMAs could have influenced  
19  
20 492 participants' responses. This may help explain the discrepancy between providers telling  
21  
22 493 researchers that patients were hesitant to attend SMAs whilst the latter reported a great deal of  
23  
24 494 enthusiasm. As most studies are from North America, it is unclear whether some barriers, such  
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26 495 as payment/ insurance reimbursement concerns, are applicable in other global healthcare  
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28 496 systems. Limited and inconsistent reporting of study participant demographic information  
29  
30 497 limited our understanding as to whether patient experiences and perspectives differ by long-  
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32 498 term condition or other personal characteristics. None of the studies reported differences in  
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34 499 patient perspectives based on gender, age ethnicity or cultural group. Similarly, the amount of  
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36 500 detail reported about the SMA itself in terms of format, staffing, duration and mode of delivery  
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38 501 was limited. It is possible that this underpins some of the differences in experiences of patients  
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40 502 and practitioners reported in the studies. In addition, it is unclear whether patient willingness  
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42 503 to attend SMAs is sustainable over time, due to limited study period and follow ups.  
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53 505 Most studies in this review reported SMAs designed to support patients with diabetes. Only a  
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55 506 limited number of studies reported on other long-term conditions, yet the perceived benefits  
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57 507 and experiences reported in mixed-condition studies were similar, and do not appear to be  
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4 508 condition specific. Furthermore, only five studies explicitly stated that some SMA participants  
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6 509 had multimorbidity. Thus, there was insufficient information reported to understand the  
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8 510 acceptability of attending group appointments with individuals who have different  
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11 511 combinations of conditions. Further exploration of the use and experience of SMAs for patients  
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14 512 with multimorbidity is needed.

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## 17 18 514 **CONCLUSION**

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21 515 Practitioner, patient and carer experiences of SMAs delivered in primary care have generally  
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23 516 been positive, with benefits to both practice and patients reported. However, there is not enough  
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25 517 evidence to show if views and experiences vary by staff involved, medical condition and / or  
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28 518 patient characteristics. Further research is needed to better understand which groups of patients  
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31 519 and practitioners should be brought together in an SMA for best effect. Whether SMAs for  
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33 520 single conditions, adequately meet the care needs of patients with multimorbidity also needs  
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35 521 further exploration. This will help to inform guidance for practitioners on how best to identify  
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38 522 and recruit patients to SMAs, rather than identifying and inviting patients based on personal  
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41 523 judgements, which could have implications for health inequalities. Having identified a number  
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44 524 of barriers and facilitators, policies and guidance need to be developed and effectively  
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46 525 communicated across and within practices on how best to implement and evaluate SMAs in  
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49 526 practice. This in turn may help to improve staff expectations and overcome the hesitancy  
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51 527 regarding SMA approaches. Additional resources may be needed to deliver SMAs such as  
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54 528 additional administrative support, further training, compatible IT systems and physical space;  
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56 529 a needs assessment may be required at practice level. The views of healthcare practitioners not  
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59 530 currently delivering SMAs are required to ensure all barriers have been comprehensively  
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4 531 explored. This is important to fully understand what interventions might be necessary to  
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6 532 support the widespread adoption and implementation of SMAs in primary care. In addition,  
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8 533 given the increased use of virtual consultations due to the outbreak of Covid-19, further  
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10 534 exploration as to the acceptability and feasibility of SMAs delivered via videoconference is  
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13 535 warranted.

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### 17 18 537 **AUTHOR CONTRIBUTIONS**

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20  
21 538 EK, KJ, HM designed the study. MYT and KJ undertook the searches. FG, MYT, KJ, OO,  
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23 539 EK and AOD carried out the screening. FG, MYT, KJ and HM carried out the data extraction  
24  
25 540 and analysis. AOD, EK, FG, FFS, HM, KJ, MYT, OO contributed to the interpretation. FG  
26  
27 541 wrote the manuscript that all authors contributed to and approved.

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37  
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39  
40 546 is supported via an NIHR Senior Investigator award.

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### 45 46 548 **AVAILABILITY OF DATA**

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49 549 As this study is a systematic review, all data reported has been previously published and is in  
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51 550 the public domain.

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### 55 56 552 **SUPPLEMENTARY MATERIAL**

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59 553 ENTREQ checklist (Enhancing transparency in reporting the synthesis of qualitative  
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4 554 research)

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6 555 Supplementary File 1- Search strategy example

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8 556 Supplementary File 2- Quality appraisal of primary studies

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14 558 **ETHICS STATEMENT**

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16 559 **Ethical approval was not required as this is a systematic review of published literature, no**  
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18 560 **primary data was collected.**

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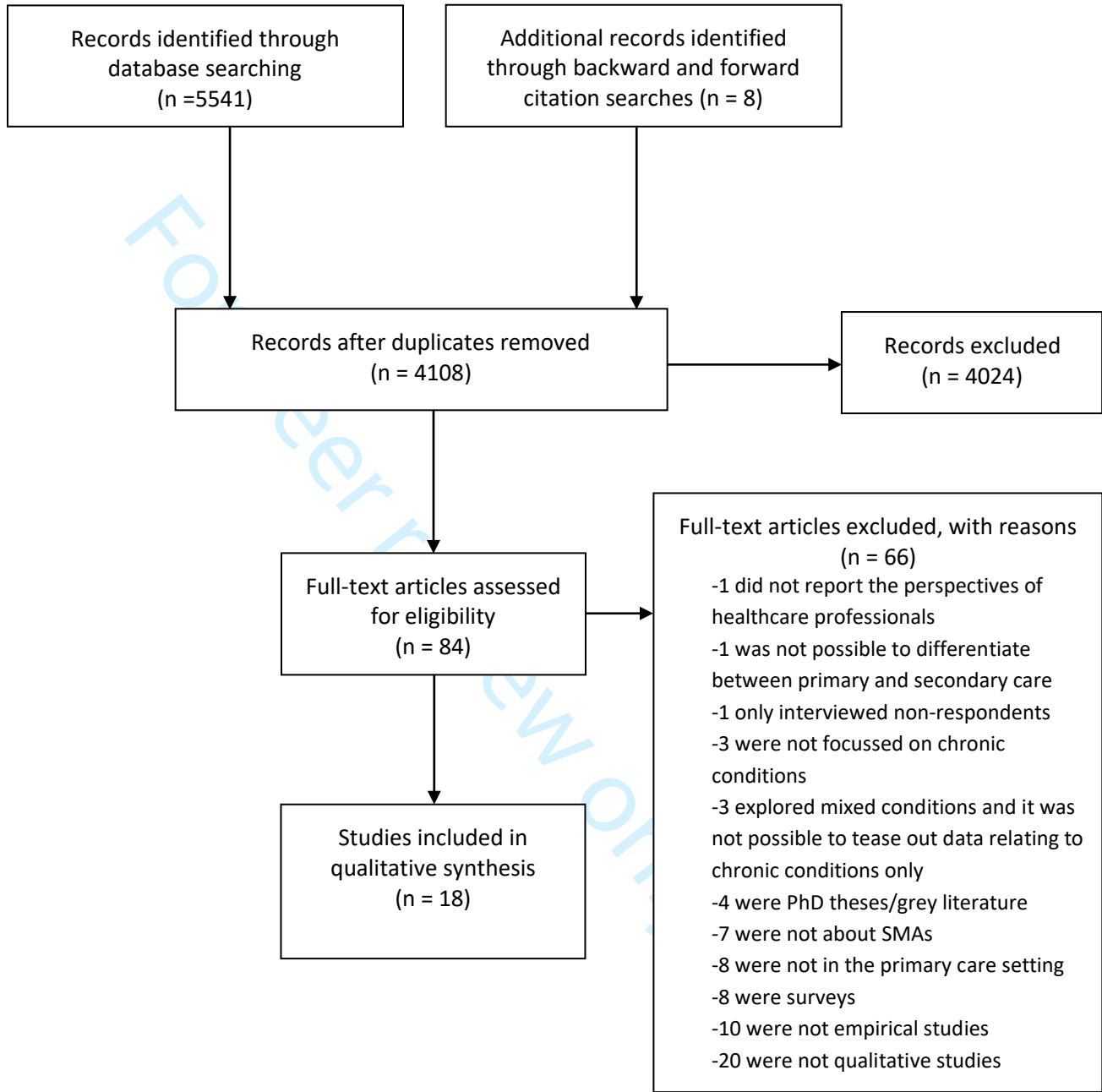
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## 662 FIGURE LEGEND

### 663 Figure 1-Flow diagram of review search

664 **Caption: Figure 1** Our search resulted in the retrieval of 84 papers for full-text review. Of these, 66 were  
665 ineligible for inclusion. Three additional studies were identified following forward and backward citation  
666 searches. This resulted in the inclusion of 18 studies in the final synthesis.

667



### Supplementary File 1- Example search strategy

Medline Search (OVID MEDLINE(R) 1946 to June Week 4 2019)

Shared medical appointment\$

OR shared medical visit\$

OR cluster visit\$

OR group visit\$

OR group clinic\$

OR group appointment\$

OR group care\$

OR group meeting\$

OR group medical visit\$

OR group medical appointment\$

OR group medical clinic\$

OR group consultation\$

OR group medical care\$

OR group medical meeting\$

OR gmV

OR gma

OR co-operative health care clinic\$

AND (((("semi-structured" OR "semistructured" OR "unstructured" OR "informal" OR "in-depth"  
OR "indepth" OR "face-to-face" OR "structured" OR "guide") adj3 (interview\$ OR discussion\$ OR  
questionnaire\$)) OR (focus group\$ OR qualitative OR ethnograph\$ OR fieldwork OR "field work"  
OR "key informant")).ti,ab.



## Supplementary File 2 Quality appraisal of studies included in review

## CASP criteria

First author & date	Statement of aims	Appropriate methodology	Appropriate design	Recruitment	Data collection	Reflexivity	Ethical issues	Data analysis	Statement of findings	Valuable	Overview of limitations and richness of data
Arney <i>et al.</i> 2018[23]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Reasons for declining invitation to participate were not reported. Potential researcher bias not discussed.</li> <li>Many quotations (with participant occupation) provided to support themes.</li> </ul>
Bauer <i>et al.</i> 2017[16]	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Can't tell	Yes	Yes	Moderately	<ul style="list-style-type: none"> <li>Recruitment strategy not reported. Unclear whether anyone declined to participate. Unclear how research was explained to participants. Potential researcher bias not discussed.</li> <li>Many quotations (without participant characteristics) provided that support findings.</li> </ul>
Cornelio-Flores <i>et al.</i> 2018[17]	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Unclear how participants were invited to participate in focus groups and whether any declined. Focus groups held during last GMV session by facilitator external to the research team.</li> <li>Many quotes included without participant characteristics. Data relatively rich.</li> </ul>
Drake <i>et al.</i> 2018[18]	Yes	Yes	Yes	Can't tell	Yes	No	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Unclear how participants were invited to participate in focus groups and whether any declined. Unclear who facilitated the focus groups and what role/relationship they had with study participants, no discussion of author biases.</li> <li>Some quotes (without participant characteristics) included though not very rich. Very few patient accounts reported.</li> </ul>
Egger <i>et al.</i> 2015[19]	Yes	Yes	Yes	Can't tell	Yes	No	Yes	Can't tell	Yes	Moderately	<ul style="list-style-type: none"> <li>Recruitment strategy not reported. Research team involved in delivering SMAs, no discussion of potential researcher bias. Acknowledged potential bias in self-selection of participants.</li> <li>Fairly thin qualitative data about satisfaction/enjoyment. Quotations provided without participant characteristics.</li> </ul>
Housden <i>et al.</i> 2016[25]	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>No reflection on potential bias in data collection or analysis by authors.</li> <li>Good illustrative quotes. In-depth accounts provided.</li> </ul>
Housden <i>et al.</i> 2017[29]	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>No reflection on potential bias in data collection or analysis by authors.</li> <li>In-depth analysis. Rich illustrative quotes both HCP and patients.</li> <li>Relationship between authors and study participants unclear. Authors appear to be involved data collection, analysis and subsequent SMA implementation. This source of potential bias not discussed.</li> </ul>
Kowalski <i>et al.</i> 2018[28]	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Rich quotes included in narrative with participant occupation reported. Lots of thin quotes covering lots of aspects mapped onto CFIR framework. Difficult to untangle SMAs from SMA-with peer 2 peer support.</li> </ul>
*Lavoie <i>et al.</i> 2013[30]	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Unclear how providers were identified, how many were invited and how many declined or for what reason. Potential researcher bias not discussed</li> <li>Rich data with illustrative quotes presented without reporting patient practitioner characteristics.</li> </ul>

1	Miller <i>et al.</i> 2004[33]	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Yes	Yes	Yes	Moderately	<ul style="list-style-type: none"> <li>Unclear if any participants declined to participate in an interview or why. Potential researcher bias not discussed.</li> <li>Qualitative data very thin, no quotations provided.</li> </ul>
2												
3												
4	Siple <i>et al.</i> 2015[20]	Yes	Yes	Yes	Can't tell	Yes	No	Can't tell	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Participant recruitment not described. Reasons for declining invitation not reported. Focused on views of diabetes self-management (which so happened to be via SMA) so less of SMA experience.</li> <li>Quotes are available but themes linked with factors influencing their self-care/motivation and less about SMA experience. Views of wives/carers not presented.</li> </ul>
5												
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8	Stevens <i>et al.</i> 2014[21]	Yes	Yes	Yes	Can't tell	Yes	Can't Tell	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Recruitment strategy not reported. Not clear if any participants declined to participate in an interview. Potential researcher bias not discussed.</li> <li>Quotes from HCP and patents included with participant characteristics. Qualitative data thin.</li> </ul>
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12	Stowell <i>et al.</i> 2015[22]	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Can't tell	Can't tell	Yes	Low	<ul style="list-style-type: none"> <li>Recruitment procedure not reported. No reflection on researcher bias. Unclear if ethical approval or informed consent required and/or obtained. No description of qualitative data analysis given.</li> <li>No qualitative data reported - no quotations. Interview findings combined with survey findings and authors narrative does not contain quotes.</li> </ul>
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16	Stults <i>et al.</i> 2016[32]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Reasons for declining study invitation not reported. Potential researcher bias not discussed.</li> <li>Provides rich data. Quotes together with participant characteristics reported-age, gender SMA attended, Only data from patients attending SMAs for chronic condition extracted.</li> </ul>
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21	Thompson <i>et al.</i> 2014[24]	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Unclear how participants were selected and contacted. Whether any declined to take part.</li> <li>Some quotes (without participant characteristics) provided in a table with themes and key findings, thin data.</li> </ul>
22												
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25	Thompson-Lastad (2018)[31]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Reflection on potential researcher bias and influence on group dynamics not discussed.</li> <li>Limitation: some SMAs were run for non-long-term conditions therefore coding of only experiences/data that refers to long-term condition SMAs. Lots of rich qualitative data (quotes).</li> </ul>
26												
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29	Tokuda <i>et al.</i> 2016[26]	Yes	Yes	Yes	Yes	Yes	No	Yes	Can't tell	Yes	Very	<ul style="list-style-type: none"> <li>Qualitative data analysis process not reported. Potential researcher bias not discussed.</li> <li>Quotations (without patient characteristics) included to support findings, rich data.</li> </ul>
30												
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32												
33	*Wong <i>et al.</i> 2015[27]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Very	<ul style="list-style-type: none"> <li>Relationship between researcher and participants unclear. Potential researcher bias not discussed.</li> <li>Rich data. Quotes (without participant characteristics) provided to support key findings.</li> </ul>
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36 HCP= healthcare practitioner

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# The ENTREQ Checklist

Enhancing transparency in reporting the synthesis of qualitative research

Item	Guide and description	Reported on page
Aim	State the research question the synthesis addresses.	5
Synthesis methodology	Identify the synthesis methodology or theoretical framework which underpins the synthesis, and describe the rationale for choice of methodology (e.g. <i>meta-ethnography, thematic synthesis, critical interpretive synthesis, grounded theory synthesis, realist synthesis, meta-aggregation, meta-study, framework synthesis</i> ).	5 & 6
Approach to searching	Indicate whether the search was pre-planned ( <i>comprehensive search strategies to seek all available studies</i> ) or iterative ( <i>to seek all available concepts until they theoretical saturation is achieved</i> ).	5
Inclusion criteria	Specify the inclusion/exclusion criteria (e.g. <i>in terms of population, language, year limits, type of publication, study type</i> ).	5
Data sources	Describe the information sources used (e.g. <i>electronic databases (MEDLINE, EMBASE, CINAHL, psycINFO, Econlit), grey literature databases (digital thesis, policy reports), relevant organisational websites, experts, information specialists, generic web searches (Google Scholar) hand searching, reference lists</i> ) and when the searches conducted; provide the rationale for using the data sources.	5
Electronic Search strategy	Describe the literature search (e.g. <i>provide electronic search strategies with population terms, clinical or health topic terms, experiential or social phenomena related terms, filters for qualitative research, and search limits</i> ).	5 and Supplementary file 1
Study screening methods	Describe the process of study screening and sifting (e.g. <i>title, abstract and full text review, number of independent reviewers who screened studies</i> ).	6
Study characteristics	Present the characteristics of the included studies (e.g. <i>year of publication, country, population, number of participants, data collection, methodology, analysis, research questions</i> ).	97, Table 1- p8, Table 2 p13
Study selection results	Identify the number of studies screened and provide reasons for study exclusion (e.g. <i>for comprehensive searching, provide numbers of studies screened and reasons for exclusion indicated in a figure/flowchart; for iterative searching describe reasons for study exclusion and inclusion based on modifications to the research question and/or contribution to theory development</i> ).	Figure 1, p7

## The ENTREQ Checklist

Enhancing transparency in reporting the synthesis of qualitative research

Rationale for appraisal	Describe the rationale and approach used to appraise the included studies or selected findings ( <i>e.g. assessment of conduct (validity and robustness), assessment of reporting (transparency), assessment of content and utility of the findings</i> ).	P6
Appraisal items	State the tools, frameworks and criteria used to appraise the studies or selected findings ( <i>e.g. Existing tools: CASP, QARI, COREQ, Mays and Pope [25]; reviewer developed tools; describe the domains assessed: research team, study design, data analysis and interpretations, reporting</i> ).	P6
Appraisal process	Indicate whether the appraisal was conducted independently by more than one reviewer and if consensus was required.	P6
Appraisal results	Present results of the quality assessment and indicate which articles, if any, were weighted/excluded based on the assessment and give the rationale.	P7 Supplementary File 2,
Data extraction	Indicate which sections of the primary studies were analysed and how were the data extracted from the primary studies? ( <i>e.g. all text under the headings "results /conclusions" were extracted electronically and entered into a computer software</i> ).	P6
Software	State the computer software used, if any.	P6
Number of reviewers	Identify who was involved in coding and analysis.	P6
Coding	Describe the process for coding of data ( <i>e.g. line by line coding to search for concepts</i> ).	P6
Study comparison	Describe how were comparisons made within and across studies ( <i>e.g. subsequent studies were coded into pre-existing concepts, and new concepts were created when deemed necessary</i> ).	P6
Derivation of themes	Explain whether the process of deriving the themes or constructs was inductive or deductive.	P6
Quotations	Provide quotations from the primary studies to illustrate themes/constructs, and identify whether the quotations were participant quotations of the author's interpretation.	Table 3, - p16 and Table 4- p21
Synthesis output	Present rich, compelling and useful results that go beyond a summary of the primary studies ( <i>e.g. new interpretation, models of evidence, conceptual models, analytical framework, development of a new theory or construct</i> ).	P23-26