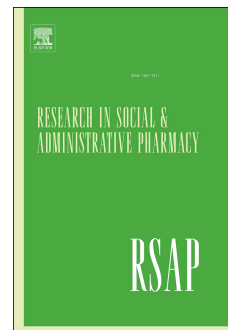


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Facilitating healthcare practitioners to deliver self-management support in adult cancer survivors: A realist review

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TITLE PAGE

Facilitating healthcare practitioners to deliver self-management support in adult cancer survivors: a realist review

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1 **Title: Facilitating healthcare practitioners to deliver self-management support in adult cancer**
2 **survivors: a realist review**

3 **ABSTRACT**

4 **Background**

5 Supporting cancer survivors in self-management can empower them to take an active role in
6 managing the long-term physical and psychosocial consequences of cancer treatment. Healthcare
7 practitioners are key to supporting patients to self-manage, however, they do not routinely engage
8 in these discussions.

9

10 **Objective(s)**

11 This review aimed to establish what works for whom and in what circumstances in relation to
12 facilitating healthcare practitioners to provide self-management support in people living with long-
13 term consequences of cancer treatment.

14

15 **Methods**

16 The review follows five steps: define the review's scope, develop initial programme theories,
17 evidence search, selection and appraisal, and data extraction and synthesis. Database searches of
18 Medline, EMBASE, CINAHL, Scopus, PsycINFO, ERIC and AMED databases, to September 2019 were
19 supplemented with practitioner surveys. Insights into the mechanisms that operate in particular
20 contexts to produce successful outcomes were illustrated using realist programme theories,
21 developed using the Theoretical Domains Framework. Data selection was based on relevance and
22 rigour. Data were extracted and synthesised iteratively to illuminate causal links between contexts,
23 mechanisms and outcomes.

24

25 **Results**

26 Five programme theories were identified from 20 included articles and seven practitioner surveys:
27 practitioners will engage patients in discussions about self-management if they have appropriate (1)
28 knowledge and (2) consultations skills, (3) a clear understanding of their self-management support
29 role and responsibilities, and if (4) organisational strategies and (5) health system configuration
30 enable integration into routine care. The mechanisms facilitating practitioners to support self-
31 management were practitioner confidence, mutual trust and shared responsibility between
32 practitioners and cancer survivors, organisational prioritisation and ease of delivery of self-
33 management support.

34

35 Conclusion

36 The findings articulate the necessary components for embedding self-management support into
37 routine cancer care. Operationalisation of these components into effective self-management
38 support interventions will require reconfiguration of pathways and adaptation for local context,
39 using strategies such as quality improvement and co-design to guide intervention development,
40 implementation and evaluation.

41

42

43 Keywords:

44 cancer survivorship, oncology practice, anticancer therapy, systematic review, adverse effects

45 **Title: Facilitating healthcare practitioners to deliver self-management support in adult cancer**
46 **survivors: a realist review**

47 **Introduction**

48 The number of people diagnosed with cancer globally will increase by around 50%, from 19 million in
49 2020 to over 28 million in 2040.¹ Early detection and treatment advancements have led to
50 improvement in global cancer survival rates, for example, the 5-year survival rate for breast cancer is
51 up to 90% and for colon cancer up to 70%². However, up to 75% of cancer survivors will experience
52 long-term problems following initial cancer treatment.³⁻⁷

53 Effects of cancer and its treatment vary depending on treatment-related factors, such as, type, dose,
54 and duration of treatment, and patient-related factors, such as, age, genetics, organ function and co-
55 existing conditions.¹⁰ Some effects are acute and temporary, e.g., hair loss, nausea and vomiting
56 related to anticancer treatment.

57 Some effects can be long-term, whilst others may present late i.e., months-years after completing
58 treatment. The effects that begin during treatment and last for months or years after completing
59 treatment, are termed long-term effects. Examples of long-term effects include fatigue, peripheral
60 neuropathy, infertility and memory problems. Some long-term effects will resolve over time, while
61 others may intensify or become permanent e.g., cognitive dysfunction and infertility, respectively.
62 Long-term effects of cancer treatment can be burdensome, with 27% of cancer survivors reporting
63 three or more effects after completing treatment.¹¹ Poor patient management of long-term effects
64 can lead to reduced quality of life, nonadherence to follow-up care and impaired ability to work.¹²

65 The effects that occur months to years after completing treatment, termed late effects, include
66 secondary cancers, heart disease, lung disease, and osteoporosis. One in five people who survive
67 cancer then develop a secondary or subsequent cancer.¹³ Late effects can affect all aspects of a
68 cancer survivor's life, including mental and physical health, ability to work, personal relationships,
69 self-esteem and body image and lead to increased use of health and social care services.¹⁴

70 The expanding numbers of cancer survivors living with treatment-related problems will increase the
71 demands placed on health services.¹⁵ Health systems worldwide are developing strategies to
72 manage the complex and often changing needs of cancer survivors. Self-management is being
73 promoted by governments as a strategy to ensure that the future delivery of healthcare to cancer
74 survivors is effective and sustainable.¹⁶⁻¹⁹ The aims of self-management support in cancer
75 survivorship care are to optimise health outcomes, accelerate recovery after cancer treatment and
76 minimise any potential long-term consequences of cancer and its treatment.²⁰ Emerging evidence

77 suggests that self-management support can benefit cancer survivors by reducing physical and
78 psychological consequences of cancer and its treatment and improving quality of life.²¹

79 Key tasks in cancer self-management include the patient actively managing and monitoring cancer
80 treatment-related side effects, managing emotional aspects, adjusting to everyday life following
81 treatment and navigating their healthcare system.²² Strategies to increase patient knowledge, skills
82 and confidence to self-manage is termed self-management support.²³

83 Self-management support interventions may directly target patients to support them to self-
84 manage, by providing information and practical support for everyday activities. An alternative
85 strategy is interventions targeting healthcare practitioners to provide self-management support to
86 patients. These have included provision of training, feedback and financial incentives.^{24 25} Multiple
87 practitioners may be involved in self-management support, which could be delivered across different
88 healthcare settings and voluntary organisations. Moreover, these interventions could be provided
89 through one-to-one or group interactions, with or without the use of digital technology and produce
90 outcomes at patient-, practitioner- or service-levels.

91 Despite being emphasised in policy agendas, self-management support has failed to become routine
92 practice in cancer care.^{18 20 26} Systematic reviews have focused on self-management support
93 interventions targeting cancer survivors.^{18 27-30} These interventions tend to attract cancer survivors
94 who are more affluent and educated, and already self-managing well.³¹ Interventions aimed at
95 enhancing practitioner capability, opportunity and motivation for delivering self-management
96 support are arguably more likely to ensure equity of care and be sustainable,^{32 33} yet the evidence for
97 such interventions is sparse.²¹ A mixed-method study recently conducted in three Canadian cancer
98 centres identified components needed for self-management support interventions targeting
99 practitioners.³⁴ The three intervention components identified were that a cultural shift was needed
100 to allow practitioners to engage patients as partners in self-management discussions, healthcare
101 practitioners needed to understand what self-management support meant and what it involved and
102 that healthcare practitioners needed appropriate support, tools and skills to deliver self-
103 management support services. This mixed-method study described very broad components with a
104 mixture of different types of interventions at individual practitioner, practitioner teams and
105 organisational levels. A systematic theory-based approach is needed to characterise these
106 interventions and their components.³⁵

107 Theory-based approaches will enable understanding of the nature of the behaviour to be changed
108 and identify intervention components influencing successful implementation and sustainability of
109 interventions.^{33 35} Theory-based approaches could therefore help to understand how and why some

110 intervention components are effective and others not. Realist methods explore how interventions
111 are influenced by different contexts, such as resources or training, and the causal mechanisms that
112 lead to the success or failure of interventions. The aim of a realist review is to create statements that
113 explain how an intervention is meant to work and what impact it may have.³⁸ These statements,
114 called programme theories (PTs), can be articulated and built using various methods, such as
115 extracting tacit theories from empirical evidence or stakeholders and using concepts from a priori
116 formal theories.³⁹ The PTs generated from realist reviews are designed to be applicable to all
117 contexts and thus guide implementation across different healthcare systems. Given the
118 heterogeneity and abundance of formal theories, selection of appropriate theories for realist
119 research can be challenging. Using a framework that incorporates a wide range of theories, such as
120 the Theoretical Domains Framework (TDF), could provide a broad lens to identify influences on
121 intervention implementation. The TDF has been widely used to facilitate an understanding of the
122 barriers and enablers of healthcare practitioner behaviour change.³⁵ The TDF is a synthesis of 128
123 constructs from 33 theories of behaviour change, clustered into 14 domains.^{35 40} An advantage of the
124 TDF is that its domains have been mapped to behaviour change techniques which are the active
125 ingredients of behaviour change interventions. This mapping facilitates selection of the most
126 effective components when designing theory-based interventions to change practitioner
127 behaviour.³⁷

128 This review aimed to improve understanding of influences involved in facilitating practitioners to
129 provide self-management support to cancer survivors by combining realist approaches with a
130 behavioural framework, the TDF. It is acknowledged that understanding of influences involvement in
131 facilitating patients to self-manage and caregivers to support self-management are important,
132 however this was outside the scope of this review. The overarching question guiding this realist
133 review is: What works for whom and in what circumstances in relation to facilitating healthcare
134 practitioners to provide effective self-management support in people living with long-term
135 consequences of cancer treatment?

136

137 **Methods**

138 A detailed description of the methods is provided elsewhere.⁴¹ This review follows the Realist and
139 Meta-narrative Evidence Syntheses: Evolving Standards (RAMESES) publication standards for
140 reporting realist syntheses or reviews,⁴² presented in supplementary file 1, and is registered on the
141 PROSPERO database (registration number CRD42019120910).⁴³ The methods used the principles of
142 realist reviews to synthesise evidence from a diverse range of sources.³⁸

143

144 Before undertaking any formal searching, the scope of the review was established by searching
145 PubMed, The Cochrane Library, Google Scholar and the National Institute for Health and Care
146 Excellence website for systematic reviews and primary studies, using the following search terms:
147 cancer survivors, healthcare professionals, and self-management or self-care. These searches were
148 supplemented with national^{16 44 45} and international^{19 46} cancer policy reports. The preliminary search
149 generated the following questions which defined the review scope as:

- 150 i. What are the barriers and enablers to facilitating practitioners to provide self-management
151 support to adult cancer survivors?
- 152 ii. What are the practitioner skills and behaviours needed to implement self-management
153 support interventions among adult cancer survivors?
- 154 iii. What are the intended and unintended outcomes for patients, organisations and the wider
155 health system of interventions which target practitioner delivery of self-management
156 support?
- 157 iv. What are the mechanisms by which interventions to facilitate practitioners to provide self-
158 management support result in their outcomes?
- 159 v. What are the contexts that influence mechanisms involved in interventions to facilitate
160 practitioners to provide self-management support?

161

162 Having established the scope of the review, initial draft PTs that address the questions of the review
163 were developed by formulating one or more PTs for each of the 14 TDF domains: knowledge, skills,
164 social/professional role and identity, beliefs about capabilities, optimism, reinforcement, intentions,
165 goals, memory, attention and decision processes, environmental context and resources, social
166 influences, emotion, and behavioural regulation.³⁵ Stakeholders were consulted to review and
167 prioritise the initial draft PTs. Stakeholder engagement is encouraged in realist reviews to ensure
168 inclusion of multiple perspectives.⁴⁷ Stakeholder consultation involved presenting the initial draft
169 PTs to 39 people representing cancer survivors, healthcare practitioners and commissioners, using
170 online surveys followed by three workshops. The workshops aimed to review and prioritise the PTs
171 for testing with relevant published evidence and practitioner surveys. Stakeholders were recruited
172 on a voluntary basis through local cancer charities and organisations known to the authors. The PT
173 prioritisation process involved two steps. The first step involved an online survey where stakeholders
174 were asked to identify the initial draft PTs they perceived to be important for supporting healthcare
175 practitioners to deliver self-management support to cancer survivors. If 100% of stakeholders agreed
176 that the PT was important, it was selected for further testing. If less than 70% of stakeholders agreed

177 that the PT was important, it was not selected for further testing. The second step involved
178 discussing the remaining initial draft PTs which were perceived to be important by 70-99% of
179 stakeholders at face-to-face workshops. At the workshops, stakeholders were asked to identify up to
180 a maximum of ten initial draft PTs for further testing.

181

182 Published literature was identified by searching Medline, EMBASE, CINAHL, Scopus, PsycINFO, ERIC
183 and AMED from inception to September 2019. Paper selection was based on the following criteria:
184 the population of interest were healthcare practitioners involved with supporting self-management
185 in adults (>18 years) living with and beyond cancer. The interventions eligible for inclusion included
186 methods promoting the uptake or delivery of self-management support; outcomes of interest
187 included practitioner knowledge, skills or behaviours needed to support self-management, patient
188 adjustment or acceptance of self-management and process or implementation outcomes, such as
189 health service use or change in care delivery. There were no restrictions regarding healthcare
190 settings or study design. Papers were excluded if they were published in languages other than
191 English or described self-management support interventions during the following phases of the
192 cancer pathway: early detection, prevention, active treatment or end of life. Papers only reporting
193 patient education or experiences and patient behaviour changes related to self-management
194 support were also excluded.

195

196 Realist reviews usually use data from published documents. When interventions, such as self-
197 management support, are widely implemented, combining real-world experience with published
198 data can provide clearer insights into the causal mechanisms operating in particular contexts for
199 intervention success or failure⁴¹. In order to capture the real-world barriers and enablers to
200 facilitating practitioners to provide self-management support and the strategies adopted to address
201 these barriers and enablers, we therefore developed an online practitioner survey. Data on
202 intervention design and delivery such as a description of the intervention, practitioners and patient
203 groups targeted, and details about what worked or not, and why through open-ended questions
204 were collected. The survey was distributed via national cancer societies, such as The British Oncology
205 Pharmacy Association, UK Oncology Nursing Society and cancer research and advocacy groups.
206 Responses were eligible if they described the development or delivery of self-management support
207 interventions targeted at healthcare practitioners to facilitate delivery of self-management support
208 to adult cancer survivors who had completed initial cancer treatment.

209

210 Two reviewers, KK and HW, independently screened papers by title, abstract and then full text.
211 Disagreements were resolved by discussion with a third reviewer (DB or WH) to ensure consistency
212 in paper inclusion. KK and HW independently screened survey responses for eligibility. Paper
213 selection was based on a) relevance to contributing to the development, refinement or testing of
214 PTs, and b) rigour in terms of credibility and trustworthiness.^{38 42 47}
215
216 KK and HW extracted data onto a bespoke data extraction form which included study aims, design,
217 methods, study participants and study outcomes. Sections of relevant text from the papers and
218 surveys were coded, based on whether they referred to contexts, mechanisms or outcomes.
219 Extracted codes were then synthesised to identify mechanisms by which intervention components
220 were thought to achieve their outcomes and any contexts that influence the final outcome.
221 Synthesis was undertaken through individual reviewer reflections and group discussion among the
222 review team. Evidence to confirm, refute and refine the existing PTs and for any new PTs were
223 identified. During refinement, to ensure consistency and illustrate emerging links between contexts,
224 mechanism and outcomes, all PTs were expressed as 'if-then' statements.⁴⁸ The refined and new PTs
225 were linked to the TDF to help explain the emerging patterns and identify influences on practitioner
226 behaviour change. The survey data allowed us to compare PTs to real-world experiences of
227 practitioners. The final PTs were presented as Context-Mechanism-Outcome configurations (CMOCs)
228 grounded in evidence from the published literature and practitioner surveys. The links between
229 contexts, mechanisms and outcomes were shown using 'if ... then ... because' statements.

230

231 **Results**

232 **Initial development and prioritisation of programme theories for testing**

233 Informed by the preliminary search 22 initial PTs were developed, with multiple PTs spanning all 14
234 domains of the TDF. Table 1 displays these PTs and supplementary file 2 provides the flow of PTs
235 across the three stakeholder prioritisation workshops to reach a final ten PTs for testing and
236 refinement against published literature and the practitioner survey.

237

238 **Evidence searches – published literature and practitioner surveys**

239 **Published literature**

240 Figure 1 provides the flow of studies from the 708 titles screened, the 58 full text papers reviewed,
241 through to the 20 papers included. Table 2 describes the characteristics of the included papers from
242 the published literature. Eight of the reported papers were conducted in the USA,⁴⁹⁻⁵⁶ three each in

243 the UK⁵⁷⁻⁵⁹ and the Netherlands⁶⁰⁻⁶² and two each in Canada^{63 64} and Australia.^{65 66} The remaining
244 studies were conducted in Singapore⁶⁷ and Denmark.⁶⁸ Various study designs were used including
245 randomised controlled trials,^{50 53 58 65 68} cross-sectional studies,^{51 52 59} reviews,^{55 56 66} and qualitative
246 studies.^{49 67}

247 Eleven published studies (55%) evaluated interventions based on structured approaches such as the
248 use of survivorship care plans, holistic needs assessment or symptom management protocols, by
249 practitioners to support the identification of individual patient needs post cancer treatment^{50 51 58 61-}
250 ^{65 67 68} or carer needs in supporting someone post cancer treatment.⁵³ Three studies described the
251 role of practitioner communication style in influencing patient behaviour change,^{49 52 55} one study
252 described an education programme to build nurse knowledge and skills to support cancer survivors⁵⁷
253 and one described the impact of support from a dedicated nurse care co-ordinator in enhancing
254 patient self-efficacy.⁵⁴ Interventions were carried out in hospital settings for half of the studies and
255 involved cancer specialists such as oncologists and cancer nurses. Nine studies reported on self-
256 management support interventions for patients diagnosed with a solid cancer, e.g., breast,^{49 61 63 66 67}
257 lung,⁵³ prostate,^{54 58} and head and neck ⁶² cancers. Six studies reported interventions for patients
258 with any type of solid or haematological cancer ^{50-52 55 56 68} and one study reported a self-
259 management support intervention for patients with lymphoma.⁶⁵

260

261 **Practitioner surveys**

262 A summary of the intervention characteristics from the practitioner survey can be found in Table 3.
263 Seven practitioners from the UK completed the survey. Six interventions were described, with three
264 each delivered in community pharmacy,^{survey3 survey5 survey8} and hospital settings.^{survey2 survey4 survey7} One
265 response summarised a qualitative study, which explored the role and scope of community
266 pharmacists in supporting breast cancer survivors, but no intervention was described. All
267 interventions involved educating practitioners to facilitate the delivery of the self-management
268 support intervention.

269

270 **Refinement and production of the final PTs and corresponding Context-Mechanism-Outcome** 271 **Configurations (CMOCs)**

272 Table 4 illustrates the transition from ten initial PTs to the final five PTs; these are presented below
273 with their corresponding CMOCs and TDF domains. Illustrative quotes supporting development of
274 the PTs are included in supplementary file 3.

275 *CMOC1: Practitioners are equipped with the knowledge to enable them to support people to self-*
276 *manage*

277 Programme theory: If practitioners have the knowledge to identify and manage treatment
278 consequences and navigate the care pathway, including processes for escalating concerns (C), then
279 they will engage in supporting patients to self-manage (O) because of increased practitioner
280 confidence (M).

281 TDF domain: Knowledge

282 Initially five separate PTs included aspects of practitioner knowledge: PT1 was about knowledge of
283 the cancer care pathway, PT2 was about knowledge of consequences of cancer treatment, PT4
284 referred to practitioner confidence in their knowledge and skills, and two PTs related to practitioner
285 knowledge about processes for escalating patient safety concerns (PT6 and 10). Reflection and
286 discussion among the review team, based on the evidence indicating that confidence was interlinked
287 with knowledge, resulted in merging these five PTs into CMOC1.

288
289 Practitioners who lacked knowledge about how to manage cancer treatment-related concerns were
290 reluctant to engage patients in conversations about their concerns or to make referrals to other
291 appropriate practitioners or services. This was due to lack of practitioner confidence.^{49 60} Practitioner
292 knowledge about survivorship care and management of cancer treatment-related consequences
293 may be increased through providing training^{57 59 63 66} and using standardised tools, e.g., treatment
294 protocols,⁶⁴ care pathways⁶⁷ or care plans.^{50 51 54 59 66 67} Increased knowledge raised practitioner
295 awareness of treatment consequences and increased confidence in managing them; it also increased
296 patient confidence in the ability of the practitioner to support them.^{49 57 59 63 66 survey3}. However,
297 increased practitioner knowledge may not lead to improved patient support if the practitioner
298 lacked the confidence to integrate the new knowledge and information into a patient management
299 plan.⁵¹ Further, training and assessment of how to undertake person-centred discussions gave
300 practitioners the confidence to engage in consultations with patients.^{55 57} Two studies reported to
301 undertake person-centred discussions using motivational interviewing techniques,^{55 57} are discussed
302 in CMOC2 below.

303

304 Practitioner reflections during training enhanced understanding of new knowledge and recalling
305 information. After training, support from senior practitioners was important to assess the
306 application of knowledge in clinical practice.^{57 67}

307

308 *CMOC2: Practitioners have appropriate consultation skills to engage patients in discussions about*
309 *self-management*

310 Programme theory: If practitioners have the necessary consultation skills (C), then they are more
311 likely to engage patients in discussions about self-management where patients feel part of the
312 decision-making process (O) because of mutual trust between practitioners and patients (M).

313 TDF domain: Skills

314 Several papers described how the communication style adopted by practitioners influenced patient
315 interactions. A new PT was therefore developed which related to practitioner consultations with
316 patients.

317

318 The approaches reported to help practitioners engage patients in discussions during consultations
319 were motivational interviewing and using structured tools, such as, a survivorship care plans. Using
320 motivational interview techniques empowered practitioners to use a person-centred approach
321 during consultations.^{55 57} Skills used by practitioners to effectively engage cancer survivors in
322 discussions involved active listening,^{53 54 56} giving patients clear messages,^{52 56 68} purposeful
323 questioning, understanding patient preferences, reinforcing patient capabilities and identifying any
324 actions or resources needed to enable self-management.⁵⁴ Consultations delivered by trained
325 existing practitioners e.g., nurses or dieticians, were as effective as those delivered by counsellors
326 specifically hired to deliver motivational interviewing interventions. Further, consultations using
327 motivational interviewing techniques delivered over the telephone were as effective as in-person
328 sessions and offered improved feasibility in busy clinical settings.⁵⁵ Equipping practitioners with skills
329 to use tools such as care plans and treatment protocols led to a standardised approach to
330 consultations.⁶⁴ However, the use of standardised care plans may not facilitate personalisation of
331 consultations if practitioners perceive them to be inflexible.⁶⁷ Furthermore, practitioners may find it
332 challenging to incorporate protocols into routine care or consultations if they are perceived to be
333 too complex.⁶⁴

334

335 The setting of the consultation influenced how practitioners engaged patients in discussions.
336 Consultations that took place in non-clinical settings allowed practitioners to explore patient
337 concerns and develop shared solutions in a relaxed environment, with no time pressures or
338 competing demands.⁵⁸ Adopting a collaborative communication style allowed practitioners to
339 improve their interactions with patients, thereby building trust and positive practitioner-patient
340 relationships.^{49 54} Improved trust enabled practitioners to effectively address cancer treatment-
341 related consequences reported by patients^{52 56 68} and improved care satisfaction.⁴⁹

342

343 *CMOC3: Patients and practitioners have shared understanding and expectations of their roles in self-*
344 *management*

345 Programme theory: If practitioners and patients are united in their expectations and understanding
346 of their respective roles in the care pathway (C), then they will engage in discussions about self-
347 management (O) because of a sense of shared responsibility (M).

348 TDF domain: Social/professional role and identity

349 Initially PT3 only included primary care practitioners, as the preliminary search suggested that
350 primary care practitioners were unclear about their role in supporting cancer survivors to self-
351 manage. However, practitioners from all care settings were incorporated as the review progressed,
352 because the evidence indicated that the need for greater role clarity regarding self-management
353 support also extended to hospital practitioners. PT3 was further refined to include the patient role
354 as the evidence indicated that practitioner engagement with self-management support was
355 interlinked with patient understanding and expectations about self-management. There were two
356 aspects to CMOC3 – understanding and expectations between practitioners and patients and those
357 between practitioners across care settings.

358

359 Where practitioners had a clear understanding of their role and responsibility, they proactively
360 interacted with cancer survivors to assess their needs and provide information and support or make
361 referrals to other sources if needed.⁵⁷ Patients who were clear about the potential long-term impact
362 of cancer and its treatment and who had information about local survivor-specific services, were
363 better able to cope and adjust to life post-treatment and more likely to seek support for self-
364 management.^{56 67} Where expectations were misaligned, practitioners and patients were less inclined
365 to engage in discussions about self-management.^{53 67}

366

367 Sharing of care/management plans between practitioners from secondary and primary care
368 facilitated effective care continuity and co-ordination. Sharing plans resulted in improved
369 practitioner knowledge of treatment consequences and how to monitor them led to improved
370 practitioner understanding of their role and responsibilities in relation to supporting self-
371 management^{50 56 66}. Providing joint training for practitioners in secondary and primary care
372 settings,^{57 66} co-location of practitioners,⁵³ and care plans developed in secondary care that included
373 useful information for practitioners in primary care^{59 67} facilitated a shared understanding of
374 practitioner roles and responsibilities and managed expectations related to supporting self-
375 management.

376

377 *CMOC4: Organisational strategies enable practitioners to deliver self-management support*378 *interventions*

379 Programme theory: If organisations use strategies to strengthen practitioners' intention to deliver
380 self-management support interventions (C), then practitioners are more likely to engage with the
381 interventions (O) because they perceive them as a priority for the organisation (M).

382 TDF domain: Intention

383 At the start of the realist review, the initial PT7 presented the role of organisations in facilitating
384 practitioners to deliver self-management support interventions. Evidence indicated that the way
385 health systems are arranged also influence practitioner engagement with self-management support
386 interventions. The initial PT7 was therefore split into CMOC4 and CMOC5 to reflect the different
387 roles played by organisations (final PT7a) and health systems (final PT7b). Discussion among the
388 review team also led to discarding PT9, which related to the requirement of additional funding to
389 enable capacity building to deliver self-management support, as organisational funding was
390 embedded into CMOC4.

391

392 A wide range of environmental changes introduced by organisations were intended to motivate or
393 incentivise practitioners to deliver self-management support. Strategies involved providing adequate
394 resources for preparing, planning and delivering interventions, such as introducing clinics specifically
395 for supporting cancer survivors post treatment,^{51 67} providing practitioners with guidelines, tools and
396 training to support practitioners during consultations,^{57 64} employing dedicated practitioners, such as
397 oncology nurses or counsellors to deliver interventions,^{53 58 64} and funding.⁵³ Funding was important
398 to support intervention delivery; however, a fee-for-service funding model was discouraged in one
399 study as there was a risk that services offered may not be relevant to patients. It was suggested that
400 practitioners may be tempted to offer extra or unnecessary services because service provision was
401 linked to practitioner salary.⁵³

402

403 Managers who provided leadership through endorsing interventions and who shared their
404 expectations for practitioners to deliver interventions influenced whether practitioners prioritised
405 delivery of self-management support.^{53 57 64} Organisations that incorporated intervention evaluation
406 through metrics about practitioner performance or through monitoring patient outcomes were able
407 to demonstrate the value of interventions and further promote their delivery within organisations.⁵³

408 ⁵⁷

409

410 Organisational strategies were further shown to increase practitioner confidence in and engagement
411 with delivering self-management support interventions⁶⁷ and supported integration and
412 sustainability of interventions into routine care.^{51 53 64} Shorter, modifiable interventions, that could
413 be delivered face-to-face or technology-assisted, were preferred by practitioners. Flexibility of
414 intervention delivery was important for practitioners to facilitate appropriate use of healthcare
415 resources.^{53 survey2 survey3 survey5 survey7}

416

417 *CMOC5: Health systems are configured to integrate self-management support interventions into*
418 *routine care*

419 Programme theory: If systems are configured to integrate self-management support interventions
420 into routine practice (C), then interventions are more likely to be sustainable (O) because of ease of
421 delivery (M).

422 TDF domain: Environmental context and resources

423 This CMOC resulted from splitting PT7, which related to the role of organisations in facilitating
424 practitioners to deliver self-management support interventions, to focus on how the arrangement of
425 the health system influences sustainable delivery of self-management support interventions. Two
426 overlapping PTs were dismissed: PT8 related to the health system being arranged to encourage and
427 prioritise routine self-management support and PT5 related to the health system infrastructure
428 facilitating integration of signposting into routine care.

429

430 Interventions designed to meet a local service need enabled easy integration into routine care⁵³ and
431 those with suitable referral pathways and processes facilitated clinical discussions.⁴⁹ Communication
432 and care-co-ordinations between practitioners from different care settings were facilitated through
433 the use of tools, such as care plans and guidelines.^{50 51 54 56 59 66 67}

434

435 Having dedicated resources to implement and deliver interventions was shown to be important not
436 only for organisations, as shown in CMOC4, but also for the healthcare system. For example,
437 introducing nurses dedicated to supporting self-management, led to increased service capacity
438 without compromising care delivery in other parts of the system.^{58 64 67}

439

440 Shared care models facilitated integration of interventions into routine practice by providing a
441 mechanism whereby senior managers formally evaluated the organisational infrastructure to deliver
442 the intervention and introduced necessary supportive changes.^{53 67} Defining practitioner roles and

443 responsibilities was key to prevent misunderstanding about who was responsible for patient care.⁶⁰

444 ⁶⁷

445

446 **Discussion**

447 This review set out to understand the influences involved in facilitating practitioners to provide
448 routine self-management support to cancer survivors, using a theoretical lens. Five interdependent
449 programme theories were developed. They highlight the importance of practitioners having
450 sufficient knowledge and skills to give them the confidence to engage patients in discussions about
451 self-management. Practitioners and patients need to be clear about their respective roles in self-
452 management by creating a sense of shared responsibility. Finally, organisations and the wider health
453 system need to put in place the necessary resources and processes to create an environment where
454 self-management support is perceived as an organisational priority, facilitating integration into
455 routine care.

456

457 Some of the key contextual influences identified in this review have been described elsewhere. For
458 example, a call to action for embedding self-management support in routine cancer care²⁰
459 highlighted that practitioners need training to improve their knowledge and skills, and practitioners
460 and cancer survivors need an understanding of their roles and responsibilities to foster a partnership
461 approach. While developing knowledge and skills are the first step towards reframing practitioner
462 roles and responsibilities, providing organisational resources alongside changes to the design of the
463 wider health system are needed to integrate self-management support into cancer care.

464

465 Organisational support was crucial for allowing practitioners to integrate self-management support
466 into the routine care of people with chronic conditions.⁶⁹ However, evidence for organisational
467 strategies to effectively embed self-management support in routine cancer care is limited. A recent
468 mixed-method study of self-management support readiness in Canadian ambulatory cancer centres
469 noted that organisations could facilitate practitioners to deliver self-management support through
470 strong leadership, appointment of champions, prioritising self-management in the organisation, and
471 introducing processes for feedback and tools for monitoring quality of care.³⁴ The present realist
472 review found that alongside senior leader/manager support, funding, monitoring and feedback, the
473 design of the intervention was important for practitioners to perceive self-management support as a
474 priority for the organisation. Interventions should not only meet local needs but also be adaptable to
475 practitioner circumstances. Self-management support interventions for cancer survivors emphasise
476 the need to depart from a 'one-size fits all' approach towards more personalised support to meet

477 individual patient needs.¹⁶ Interestingly, this review found that interventions to facilitate
478 practitioners to provide self-management support may also need to be tailored to meet the unique
479 needs of practitioners, which may depend on available resources, such as, time and space. An
480 understanding of the local context and practitioner needs will thus be critical for developing and
481 designing self-management support interventions targeted at practitioners.

482

483 Healthcare organisational culture and social norms are considered key contextual factors that
484 influence implementation of healthcare practices, service improvements and patient outcomes,^{70 71}
485 but are notoriously difficult to assess and manage.⁷² Organisational culture is the shared ways of
486 thinking, feeling and behaving in organisations.⁷² Social norms, the shared values, beliefs and
487 attitudes that influences behaviour, lie at the heart of influencing organisational culture.⁷³
488 Unsurprisingly, no evidence was found in the included studies for the influence of organisational
489 culture and social norms on implementing or delivering self-management support. Self-management
490 support interventions will be implemented and delivered in the context of the underlying cultural
491 and social norms within the organisation. Understanding of these cultural and social influences may
492 provide deeper insights into how self-management support interventions could be shaped to
493 improve cancer survivor outcomes.

494

495 The current literature suggests that successful implementation of self-management support in
496 cancer survivors will require a 'whole system' change.^{20-22 38 74} However, evidence for what system
497 changes are needed and how they can be achieved is lacking. The literature on self-management
498 support in chronic conditions, such as diabetes and asthma, highlight that embedding self-
499 management support is not about adding interventions to existing services.⁷⁵ It requires a
500 fundamentally different way of working and the necessary infrastructure to facilitate a shift from
501 focusing on disease management to supporting patients to manage their own health and wellbeing.
502 The present review begins to build the evidence for the role of health systems in facilitating
503 integration of self-management support in routine cancer care. Suitable referral pathways and
504 processes that allow practitioner collaboration across care settings, together with clarifying roles
505 and responsibilities are important. While these findings seem to overlap with the chronic condition
506 literature, it cannot be assumed that these strategies will have applicability in the cancer setting in
507 exactly the same way, given the complex, multi-faceted and fluctuating nature of cancer.⁷⁶

508

509 Similar to findings of the present review, developing knowledge and skills was shown to influence
510 nurses' confidence, but this did not always result in changes to daily practice due to the complexity

511 of delivering self-management support.⁷⁷ Whilst the present review suggests that mutual trust and
512 shared responsibility are crucial mechanisms for enabling patient-centred collaborative interactions
513 between practitioners and patients, studies have highlighted that the current dominance of the
514 traditional model of care hampers effective delivery of self-management support.^{24 78 79} Similar to
515 findings of the present review, prioritisation of self-management support by organisations facilitates
516 delivery by practitioners, but only if there are no other competing priorities.⁸⁰ For example, an
517 intervention to enhance self-management support in routine primary care was ineffective as it was
518 not viewed as a priority by practitioners, who were more focused on delivering tasks linked to a pay-
519 for-performance framework.⁷⁹ Although the identified five mechanisms have been described in
520 studies related to self-management support in chronic conditions, this review reports on their
521 potential contribution in facilitating practitioners to deliver self-management support in the cancer
522 setting. An understanding of the interactions between mechanisms, the outcomes produced and the
523 context may be key to developing successful interventions.

524

525 Strengths of this review include combining a realist lens, a relatively new approach to evidence
526 synthesis with the TDF, a widely used behavioural framework to deepen understanding of the
527 contextual factors influencing practitioner delivery of self-management support in cancer survivors
528 and their mechanisms. This is the first of its kind. A realist review was chosen to facilitate a
529 structured approach to synthesising heterogeneous literature using varying study designs and real-life
530 experiences of practitioners. The TDF provided a theoretical lens through which to view contexts and
531 mechanisms, and how they influenced practitioner provision of self-management support. The
532 realist approach allowed interrogation of the relationships between the different contexts,
533 mechanism and outcomes. Future intervention development studies should explore how the TDF
534 can be used to progress from understanding of contextual and causal mechanisms to guiding
535 selection of behaviour change techniques to designing complex interventions³⁵ to address identified
536 influences.

537

538 Limitations include those commonly reported in realist reviews. The included studies provided
539 limited details about the interventions and some information about contexts and potential
540 mechanisms. Broad statements were therefore formulated, which were informed by the TDF, and
541 seem to reflect those reported in similar studies exploring practitioner delivery of self-management
542 support.^{34 80} Not all the published studies focused explicitly on interventions facilitating practitioner
543 provision of self-management support in cancer survivors. Studies that broadly described

544 interventions for supporting people post cancer treatment were therefore drawn on and this was
545 combined with practitioner surveys.

546

547 The practitioner surveys, despite being small in number and focusing exclusively on educational
548 interventions, enriched understanding of the scope of interventions for facilitating practitioners to
549 deliver self-management support to cancer survivors. The included published studies and
550 practitioner surveys reported on the delivery of self-management support interventions by multiple
551 healthcare practitioners, such as nurses, pharmacists, pharmacy technicians, dieticians and
552 counsellors. However, the role played by other non-medical members of the healthcare team, such
553 as, care navigators and social prescribers, in supporting cancer survivors to self-manage was lacking.
554 The search strategy aimed to systematically identify sufficient sources to build and test theory.
555 However, it is possible that relevant literature could have been inadvertently overlooked. Rather
556 than identifying all available documents, it is acceptable for realist reviewers to take a purposive
557 sampling approach which aims to reach theoretical saturation.³⁸ The review team deemed that
558 sufficient evidence was found in the included published studies and practitioner surveys to consider
559 the presented PTs to be coherent and plausible, thereby reaching theoretical saturation. The quality
560 of the studies was not formally assessed because the traditional hierarchy of evidence is of lesser
561 importance in realist reviews. Instead, studies were included if they were deemed good enough by
562 the review team in terms of robustness of the study and its conduct, by considering issues such as
563 sample size, data collection, data analysis and conclusions drawn by study authors. This review
564 mainly derived evidence from higher income countries. These countries have better health
565 infrastructures and resources compared to lower income countries, which may limit applicability of
566 the findings in these countries. Understanding of influences involved in facilitating patients to self-
567 manage and caregivers to support patients to self-manage, although outside the scope of this
568 review, are needed to enable development of effective self-management and self-management
569 support interventions.

570

571 **Conclusion**

572 This evidence synthesis has identified five interdependent programme theories to facilitate
573 practitioners to provide routine self-management support to cancer survivors. At the practitioner
574 level, developing knowledge and consultations skills will improve confidence in engaging cancer
575 survivors in discussions about self-management. Also, at the practitioner-patient level, a clear
576 understanding of roles and responsibilities will facilitate a partnership approach to self-
577 management. At the organisational level, prioritising self-management support will provide a top-

578 down incentive for practitioners. Finally, reconfiguration of pathways and processes across the
579 health system will enable sustained delivery of self-management support. A variety of approaches
580 may be employed, such as quality improvement and co-design to operationalise how these
581 programme theories could guide the development, implementation and evaluation of self-
582 management support interventions.

Journal Pre-proof

583 **Appendices.**

584 Supplementary file 1: RAMESES reporting standards checklist

585 Supplementary file 2: Prioritisation of the ten programme theories (PTs) taken forward for testing in
586 the realist review across three stakeholder workshops

587 Supplementary file 3: Illustrative quotes supporting development of the Context-Mechanism-
588 Outcome Configurations (CMOCs) showing barriers to and enablers for facilitating delivery of self-
589 management (SM) support by healthcare practitioners to adult cancer survivors

590

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592

593 **Author Contribution**

594 Conception and design: KK, WH, HW, EK, MS, DB; Data Collection: KK, HW; Analysis and

595 Interpretation of Data: KK, WH, HW, DB; Manuscript writing: KK, WH, DB. All authors have approved
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597

598

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Figure

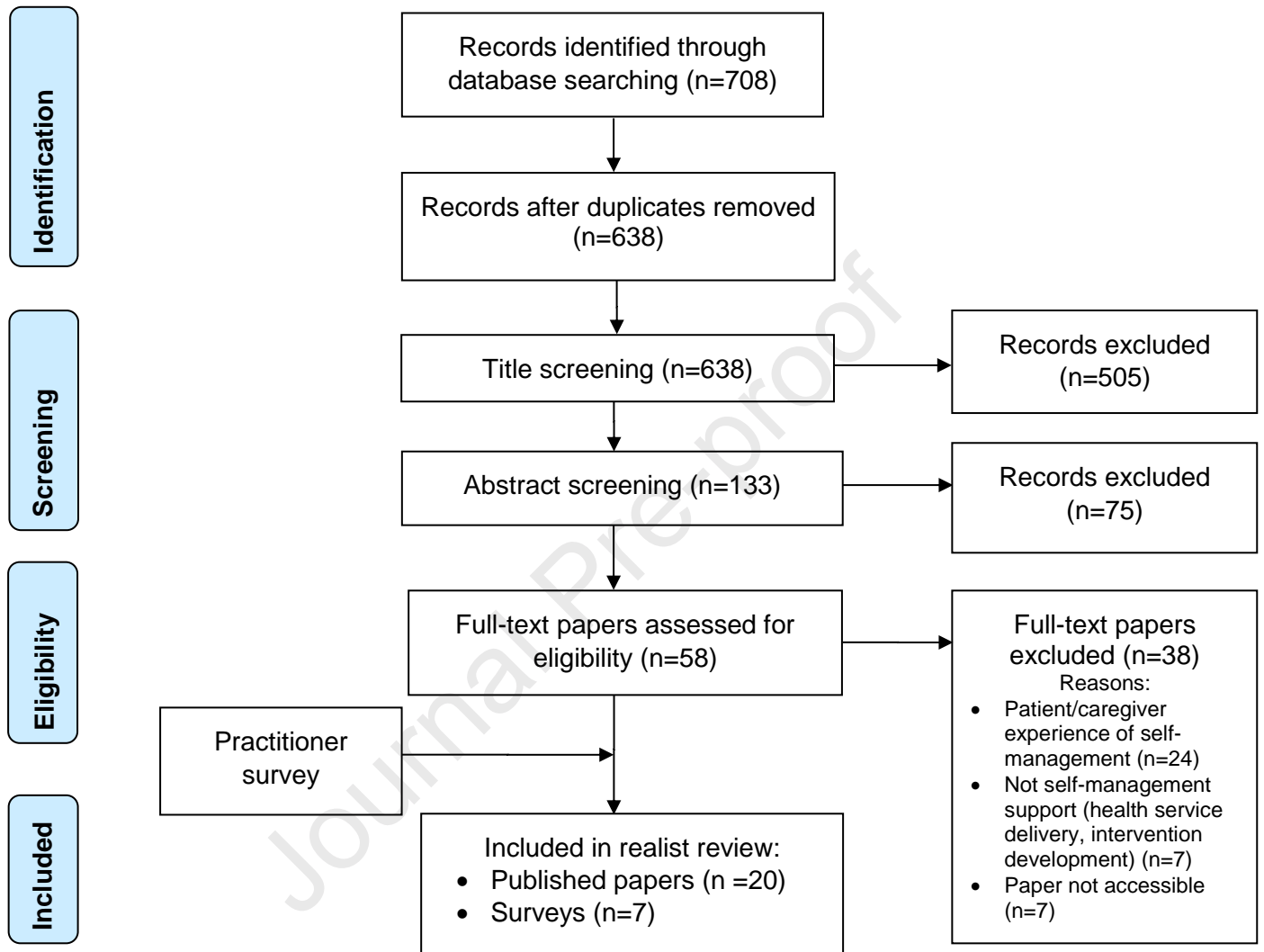


Figure 1: PRISMA flow diagram of included papers and surveys for the realist review

Table 1: Initial programme theories derived using the Theoretical Domains Framework and the ten prioritised for testing in the realist review

TDF Domain (definition)	PT No.	Programme Theory	Prioritised for testing
1. Knowledge What knowledge does the practitioner need? (An awareness of the existence of something)	1	Practitioners will be effective in supporting patients to self-manage if the practitioner has the required knowledge about the cancer pathway	Yes
	2	Practitioners will correctly identify and signpost patients to self-manage if the practitioner has the required knowledge about the consequences of anti-cancer treatment.	Yes
2. Skills What are the required skills of the patient/practitioner? (An ability or proficiency acquired through practice)	3	Practitioners are more likely to initiate discussions regarding self-management with patients and carers if they feel equipped to conduct consultations with patients and carers experiencing emotional distress.	No
3. Social/professional role and identity Does the activity fit with what the patient/practitioner thinks that they should be doing? (A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting)	4	Practitioners are more likely to initiate discussions regarding self-management with patients and carers if they feel that it is a part of their role.	No
	5	Practitioners are more likely to initiate discussions regarding self-management with patients and carers if they feel that this role is endorsed by colleagues from other professions.	No
	6	SMS are more likely to be successful if the primary care team are united in their vision of how it should be achieved.	Yes
4. Beliefs about capabilities Does the patient/practitioner feel that they have the capability and control over the situation to do the required behaviour? (Acceptance of the truth, reality or validity about an ability, talent or facility that a person can put to constructive use)	7	If a practitioner is confident that they have the required knowledge and skills, then they are more likely to engage patients and carers in discussions about SMS.	Yes
5. Optimism Confidence that the desired behaviour/goals will be achieved, and that the outcome will be good (The confidence that things will happen for the best or that desired goals will be attained)	8	If a practitioner feels that signposting patients to self-manage can be integrated into their current role, they are more likely to try doing it.	Yes
6. Beliefs about consequences What good/bad things does the person think will happen if they do the required behaviour? (Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation)	9	If a practitioner believes that the self-management package is safe, then they will be more likely to encourage patients to engage with it.	Yes
	10	If a practitioner believes that supporting SM will improve relationships with their patients, then they will be more likely to encourage patients to engage with it.	No
	11	If practitioners believe that initiating discussions about self-management will be time consuming, then they will be less likely to engage patients in discussion.	No

<p>7. Reinforcement Is there a dependent relationship between undertaking/not undertaking the required behaviour and some outcome that will impact on the individual? E.g. reward or sanction. (Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus)</p>	12	If organisations provide rewards or sanctions dependent upon whether practitioners perform/do not perform SMS, then practitioners are more likely to undertake signposting to SMS.	No
<p>8. Intention Conscious decision to perform the required activity (A conscious decision to perform a behaviour or a resolve to act in a certain way)</p>	13	If organisations work with practitioners to integrate self-management into routine practice, then practitioners are more likely to engage with it.	Yes
<p>9. Goals Does the required behaviour align with the goals of the individual undertaking the behaviour? (Mental representations of outcomes or end states that an individual wants to achieve)</p>	14	If the organisation demonstrates an expectation that supporting patients to self-manage is a part of the practitioner's role, then they are more likely to engage.	No
	15	If systems are organised to encourage and prioritise SMS then this will more likely lead to practitioners feeling supported and equipped) to engage in SMS, resulting in SMS becoming part of the culture of care.	Yes
<p>10. Memory, attention and decision making Ability to retain the required information and apply to make decisions. (The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives)</p>	16	If organisations work with practitioners to integrate a prompt for SMS into routine practice, then practitioners are more likely to remember to broach the topic of SMS.	No
<p>11. Environmental context and resources Any circumstance of the situation or environment that facilitates or hinders the required behaviour. (Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence and adaptive behaviour)</p>	17	Additional funding is required to enable capacity to be built into the team for practitioners to deliver this new role of supporting SMS	Yes
<p>12. Social influences Social pressure/norms/ group conformity (Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours)</p>	18	Practitioners are more likely to initiate discussions regarding self-management with patients and carers if there are role models demonstrating that it can be done.	No
	19	If systems are organised to encourage SMS then SMS is more likely to become part of the culture of care.	No
	20	If organisations and practitioners feel that the concept of SMS is supported by patients and carers, then they are more likely to engage with implementing a SMS programme.	No

<p>13. Emotion Positive or negative emotions created by undertaking the required behaviour. (A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event)</p>	21	Decision tools such as a traffic light system for when patients should seek hospital advice will reduce anxiety for practitioners arising from the fear that an emergency situation may be missed.	Yes
<p>14. Behavioural regulation Anything that can be monitored to see how the person is doing and give them feedback (Anything aimed at managing or changing objectively observed or measured actions)</p>	22	If organisations routinely monitor and feedback on practitioner engagement with SMS, then they are more likely to initiate and maintain support of an SMS programme.	No

PT programme theory; TDF Theoretical Domains Framework

Table 2: Characteristics of published papers included in the realist review (n=20)

Study first author (year)	Country	Study design	Study setting	Study population (N)	Practitioners involved	Patient cancer type	Patient age (years)	Intervention	Outcomes
Chan (2017) ⁶⁷	Singapore	Qualitative – focus groups	Community pharmacies, GP practices	HCP: N=16	General practitioners, community pharmacists	Breast cancer	NR	Survivorship shared care model, including survivorship care plans.	Barriers and facilitators to survivorship shared care model.
Hochstenbach (2017) ⁶⁰	Netherlands	Intervention development	Outpatient cancer pain clinic	NR	Nurses, pharmacists, physicians, researchers	NR	NR	NA	Development of a nursing self-management support eHealth intervention.
Reese (2017) ⁴⁹	USA	Qualitative – focus groups & interviews	Hospital outpatient cancer clinics	Patients: N=28 HCP: N=11	Oncologists, Advanced practice nurse	Breast cancer	NR	Patient-provider communication about sexual concerns.	Communication experiences, needs and preferences.
Mayer (2016) ⁵⁰	USA	Pilot RCT	Hospital	Patients: N=37 HCP: N=34	Hospital nurse, primary care providers	Multiple: breast, colon, lung, Hodgkin's lymphoma, head & neck, pancreatic, ovarian	≥ 21 years Mean (SD): 56.8 (11)	Control: SCP. Intervention: SCP plus primary care provider visit.	HCP confidence in survivorship information and expectations for cancer survivorship care.
Rosenberg (2016) ⁵¹	USA	Cross-sectional study	Hospital outpatient cancer clinic	Patients: N=1615	Oncology nurse, oncologists	Multiple: breast, gynaecological, colorectal, prostate, melanoma	Mean: 57 Range: 21-98	Treatment summary, SCP, risk adapted visit and education.	Improved communication and symptom reporting between patient and HCP.
Arora (2009) ⁵²	USA	Cross-sectional study	State-wide patient experience of cancer care study	Patients: N=623	Physicians involved with follow-up care: primary care and hospital oncologists, haematologists, or other specialists	Leukaemia, colorectal or bladder cancers	Mean (SD): 62.6 (12.9)	Nil – routine follow-up care.	HCP communication style and survivor quality of life.

Study first author (year)	Country	Study design	Study setting	Study population (N)	Practitioners involved	Patient cancer type	Patient age (years)	Intervention	Outcomes
Stacey (2016) ⁶⁴	Canada	Case study	Hospital outpatient cancer clinics	HCP: Case 1: N=31 Case 2: N=47 Case 3: N=41	Nurses, managers and educators	NR	NR	Symptom protocols for providing telephone-based support.	Implementation and sustainable use of evidence-informed protocols.
Campion-Smith (2014) ⁵⁷	UK	Intervention development	Primary care	HCP: N=10	Practice nurse	NR	NR	Cancer education course.	Preparation of primary care workforce to support people affected by cancer.
Stanciu (2019) ⁵⁸	UK	Feasibility RCT	District general hospital	Patients Control: N=47 Intervention: N=48	Research nurse	Prostate cancer	Control: 85% (n=40) > 65 Intervention: 81% (n=39) > 65	Control: Usual care. Intervention: Usual care + holistic needs assessment with nurse + follow-up appointments.	Recruitment rate, attrition rate, rate of completion of outcome measures (patient reported measures: physical and psychological symptoms, confidence in managing own health, supportive care needs and general health & quality of life.
Jefford (2014) ⁶⁶	Australia	Review paper	NA	NA	Oncologists, primary care physicians, nurses	Breast cancer	NR	Models of post treatment care.	Patient experiences post treatment and cancer survivorship models of care.
Ratcliff (2018) ⁵³	USA	RCT	Integrated/cancer care settings	HCP, national and advocacy group leads: N=33	Nurses, social workers, counsellors, doctors	Lung cancer	NR	CareSTEPS - Psychosocial intervention targeting caregivers of people with lung cancer.	Caregiver needs, resources, integrating care for caregivers and potential care models.
Melissant (2018) ⁶¹	Netherlands	Feasibility study	Hospitals	Patients: N=101	Oncology nurses	Breast cancer	Mean (SD): 56 (12)	Oncokompas – web-based self-management application - breast cancer	Patient activation and physician-patient interaction.
Bergholdt (2012) ⁶⁸	Denmark	RCT	General hospital GP practices	Control Patients: N=469 GP practice: N=1090	Cancer nurses, GP	Breast cancer, colorectal cancer, Melanoma, Lung cancer,	Mean: 62.5 Range: 21-91	Control: Usual care. Intervention: Usual care + Patient interview about rehabilitation needs,	GP proactivity to contact patient to facilitate rehabilitation process, patient participation in rehabilitation activities.

Study first author (year)	Country	Study design	Study setting	Study population (N)	Practitioners involved	Patient cancer type	Patient age (years)	Intervention	Outcomes
				Intervention Patients: N=486 GP Practice: N=1091		Prostate cancer		GP provided information about patient needs and encouraged to contact patient.	
Maliski (2004) ⁵⁴	USA	Descriptive retrospective record review	Statewide free prostate cancer treatment programme (IMPACT – Improving access, counselling and treatment)	Patients: N=40 HCP: N=7	Nurses	Prostate cancer	15% (n=6) ≥ 65	Nurse-managed care co-ordination for patients in IMPACT programme.	Role of nurse case manager.
Spencer (2016) ⁵⁵	USA	Systematic review	NA	N=15 studies included	Nurses, dieticians	Any	NR	Motivational interviewing	Efficacy of motivational interviewing to address lifestyle behaviours and psychosocial needs of cancer patients and survivors.
Duman-Lubberding (2016) ⁶²	Netherlands	Feasibility study	Hospitals	Patients: N=68	Oncology nurses	Head & neck cancers	Mean (SD): 59.05 (9.85) Min. 25 Max. 77	Oncokompas – web-based self-management application – head & neck cancer	Adoption and usage of web-application and patient satisfaction scores.
Faithfull (2016) ⁵⁹	UK	Cross-sectional study	Primary and secondary care	HCP: N=618	Oncology nurses, community nurses, allied health professionals	NR	NR	Nil – routine care.	Self-reported competence in long-term care provision for adult cancer survivors.
Tish Knobf (2013) ⁵⁶	USA	Review paper	NA	NA	Oncology nurses	Any	NR	NA	Informational and support needs of people with cancer and role of oncology nurses in delivery of high-quality patient-centred cancer care

Study first author (year)	Country	Study design	Study setting	Study population (N)	Practitioners involved	Patient cancer type	Patient age (years)	Intervention	Outcomes
Wiljer (2010) ⁶³	Canada	Pilot pre/post-test study	Hospital	Patient: N=40	NR	Breast cancer	15% (n=6) > 60	Survivorship consult – a one-hour template-guided reflective interview to discuss patients' physical, psychological, spiritual & social needs.	Patient self-efficacy to manage survivorship care.
Taylor (2019) ⁶⁵	Australia	Pilot RCT	Tertiary cancer centre	Patients: N=60 (1:1 intervention: control)	Survivorship cancer nurse	Lymphoma	Control: 37% (n=11) ≥ 60 Intervention: 33% (n=10) ≥ 60	Control: Usual care. Intervention: Usual care + nurse-led survivorship clinic (consultation, SCP, treatment summary and a resource pack of tailored information, support and resources)	Impact of nurse-led model on tailoring supportive care to lymphoma patients.

GP General Practitioner; HCP Healthcare professionals; NA Not applicable; NR Not reported; RCT Randomised Controlled Trial; SCP Survivorship Care Plan

Table 3: Characteristics of interventions from practitioner surveys included in the realist review (n=7)

Survey no.	Country	Study design	Study setting	Practitioners involved in intervention delivery	Survivor cancer diagnosis	Intervention	Outcomes
2	UK	Feasibility study	Hospital	Oncologist, specialist nurses, researchers, other – computer consultants, commissioners	Lung cancer	Practitioner training about how patients can access and use an App (<i>iEXHALE</i>) to facilitate self-management of symptoms through exercise	Practitioner-related: NR Patient related: Ease of use of App, navigation and value in daily life
3	UK	Feasibility study	Community pharmacy	Pharmacy professionals e.g., pharmacists, pharmacy technicians, assistants, etc.	Prostate cancer	Community pharmacy teams were trained to deliver a health assessment including fitness, strength and anthropometric measures. Training included consultation skills and cardiovascular health.	Practitioners and patients: Feasibility and acceptability of intervention
4	UK	NA – Intervention development	Any chemotherapy administration service – mainly secondary care setting	Oncologists, nurses, pharmacists	All people treated with chemotherapy	Video to guide practitioners on the effective use of the record with patients. The video explains the purpose of the record, includes guidance to support self-management and how practitioners can order free copies of the record called <i>Your Cancer Treatment Record</i>	Practitioner-related: Ease of use of the record in routine practice Patient-related: Acceptability and usefulness of the record
5	UK	NR	Community pharmacy	Pharmacists	NR	Training pharmacists to deliver patient education aimed at empowering patients to self-management	Practitioner-related: Satisfaction of training Patient-related: Improve confidence and knowledge about how to care for themselves and access to appropriate healthcare services.
6	UK	Qualitative study	Community pharmacy	NA	Breast cancer	NA	Exploration of the role and scope of the community pharmacist in supporting breast cancer survivors
7	UK	Proof of concept randomised control trial	Hospital (12 sites)	Hospital team caring for patients, research team, e.g., research nurses and clinical trial officers	All	Randomisation in a 1:1 ratio to receive either the <i>RESTORE</i> online intervention or a leaflet comparator developed by	Practitioner-related: NR Patient-related: Feasibility and acceptability, change in self-

Survey no.	Country	Study design	Study setting	Practitioners involved in intervention delivery	Survivor cancer diagnosis	Intervention	Outcomes
						<p>Macmillan Cancer Backup, <i>Coping with Fatigue</i></p> <p>Training was offered to practitioners to support their role in the study, as follows: (1) Hospital care team – directing eligible patients to the research team. (2) Research team – screening patients for inclusion, documenting eligibility/ willingness to participate or ineligible and reason for declining where possible. Giving eligible/ willing patients a letter of invitation, information sheet and reply slip and instructions for completing reply slip.</p>	efficacy to manage cancer-related fatigue
8	UK	NR	Community pharmacy (10 sites)	Pharmacists	All	<p>Training provided to 10 community pharmacy teams to deliver the intervention <i>Not Normal for You?</i> aimed at identifying patients with 'red flag' cancer symptoms and encouraging them to see their GP.</p>	<p>Practitioner-related: Enhance community pharmacist's knowledge of and confidence in recognising red flag cancer symptoms. Patient-related: Overcoming barriers to self-referral to GPs</p>

NA Not applicable; NR Not reported

Table 4: Prioritised initial programme theories for testing, refined theories during evidence selection and appraisal and final programme theories after data synthesis

Original PT no.	New PT no.	Initial programme theory	Refined programme theory (Expressed as If ... Then statements)	Final programme theory (Expressed as If ... Then ... Because statements) <i>[TDF Domain]</i>
1	1	Practitioners will be effective in supporting patients to self-manage if the practitioner has the required knowledge about the cancer pathway.	If a practitioner is confident that they have the required knowledge and skills about the cancer pathway, then they will engage in supporting patients to self-manage	If practitioners have the knowledge to identify and manage treatment consequences and navigate the care pathway, including processes for escalating concerns, then they will engage in supporting patients to self-manage because of increased practitioner confidence. <i>[Knowledge]</i>
2	2	Practitioners will correctly identify and signpost patients to self-manage if the practitioner has the required knowledge about the consequences of anti-cancer treatment.	If practitioners have the required knowledge about the consequences of cancer treatment, then practitioners will correctly identify and signpost patients to self-manage.	Discarded – merged with final PT1
6	3	Self-management support is more likely to be successful if the primary care team are united in their vision of how it should be achieved.	If the primary and secondary care team are united in their vision of how self-management support should be achieved, then it is more likely to be successful.	If practitioners and patients are united in their expectations and understanding of their respective roles in the care pathway, then they will engage in discussions about self-management because of a sense of mutual trust and shared responsibility. <i>[Social/professional role & identity]</i>
7	4	If a practitioner is confident that they have the required knowledge and skills, then they are more likely to engage patients and carers in discussions about self-management.	Combined with refined PT 1	NA
8	5	If a practitioner feels that signposting patients to self-manage can be integrated into their current role, they are more likely to try doing it.	If a practitioner feels that signposting patients to self-manage can be integrated into their current role, then they are more likely to try doing it.	Discarded – addressed by final PT7b
9	6	If a practitioner believes that the self-management package is safe, then they will be more likely to encourage patients to engage with it.	If a practitioner believes that the self-management intervention for patients is safe, then they will be more likely to encourage patients to engage with it.	Discarded – incorporated in final PT1
13	7	If organisations work with practitioners to integrate self-management into routine	Split into two	7a - If organisations use strategies to endorse self-management interventions, then practitioners are more

		practice, then practitioners are more likely to engage with it.	<p>7a - If organisations use strategies to endorse interventions, then practitioners are more likely to engage with self-management support interventions.</p> <p>7b - If systems are configured to integrate interventions into routine practice, then the intervention is more likely to be sustainable.</p>	<p>likely to engage with them because practitioners perceive those interventions are a priority in the organisation.</p> <p style="text-align: right;">[Intention]</p> <p>7b - If systems are configured to integrate self-management interventions into routine practice, then interventions are more likely to be sustainable because of ease of delivery.</p> <p style="text-align: right;">[Environmental context & resources]</p>
15	8	If systems are organised to encourage and prioritise self-management then this will more likely lead to practitioners feeling supported and equipped to engage in self-management support, resulting in self-management support becoming part of the culture of care.	Discarded – incorporated into refined PT 7b	NA
17	9	Additional funding is required to enable capacity to be built into the team for practitioners to deliver this new role of supporting self-management.	Discarded – incorporated into refined PT 7a	NA
21	10	Decision tools such as a traffic light system for when patients should seek hospital advice will reduce anxiety for practitioners arising from the fear that an emergency situation may be missed.	If decision tools (such as a traffic light system) for when patients should seek hospital advice are available, then practitioner anxiety arising from the fear that an emergency situation may be missed will be reduced.	Discard – incorporated into final PT1
NA	11	NA	<p>NEW programme theory</p> <p>If practitioners have the knowledge and skills to engage patients in the consultation, then they are more likely to get patients to self-manage.</p>	<p>If practitioners have the necessary consultation skills, then they are more likely to engage patients in discussions about self-management where patients feel part of the decision-making process because of mutual trust between practitioners and patients.</p> <p style="text-align: right;">[Skills]</p>

PT programme theory; NA Not applicable; TDF Theoretical Domains Framework