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Title

Destress II: Using the behaviour change wheel and preliminary testing to co-develop a complex intervention to improve the quality of primary care responses to people experiencing poverty-related mental distress.

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38 **ABSTRACT**

39 **Background**

40

41 UK policy recommends non-pharmacological interventions as a first-line response to
42 depression, yet antidepressant prescribing continues to rise, particularly in low
43 income communities. Structural barriers, including short consultation times and long
44 waiting lists for talking therapies, often lead to prescribing as a pragmatic but limited
45 response to social suffering, costing the NHS approximately £230 million annually.
46 While clinicians and patients seek more holistic approaches, there is a lack of
47 actionable guidance on how to implement these alternatives under primary care
48 service pressures. The aim of this study was to co-develop a theory-informed
49 intervention, to help primary care staff improve their understanding of how poverty
50 and social determinants impact mental health. The intervention seeks to build
51 empathy and trust within short consultations, promote more prudent antidepressant
52 prescribing, and encourage the use of non-pharmacological support through
53 enhanced team working.

54 **Methods**

55 The Behaviour Change Wheel was used to co-develop a complex intervention (Destress-II)
56 aimed at primary care staff. A group of GPs (n=19) and members of low-income
57 communities (n=17) followed BCW stages to create the intervention. In 2022-3, Phase 1
58 piloted an in-person iteration with 53 practices; qualitative data from trainers and participants
59 were analysed using descriptive thematic analysis. Refined into a practice-delivered web-
60 resource, the intervention was tested in a further 30 practices in Phase 2 and re-evaluated
61 using interviews.

62 **Results**

63 Both phases identified three main themes: content, delivery, and acceptability within time-
64 pressured services. Participants valued the content and the team-discussion aspect, finding
65 the brief duration appropriate for existing training meetings. Many appreciated the
66 intervention for reinforcing holistic approaches rather than introducing entirely new concepts.

67 **Conclusion**

68 The study successfully co-developed an acceptable and feasible intervention to improve
69 clinical responses to mental distress exacerbated by poverty and wider social
70 circumstances. The co-development approach to complex interventions is transferable to
71 other clinical areas.

72

73 **Keywords**

74

75 General Practitioners, primary care, mental health, poverty, prescribing, antidepressants,
76 social circumstances, co-development, intervention, quality improvement.

77

78 BACKGROUND

79

80 Research suggests that many people in the UK experiencing mental distress also have low
 81 socio-economic status (SES), with a clear association established between social
 82 adversity—such as poverty or isolation—and poor mental health(1). However, the clinical
 83 response to distress remains strongly pharmaceutical and consequently, the United
 84 Kingdom has seen a prolonged population-wide increase in antidepressant prescribing(2).
 85 This trend persists despite the 'treatment-prevalence paradox,' where increases in the
 86 provision of antidepressant and psychological treatments have not resulted in a measurable
 87 reduction in the prevalence of depression(3). The trend is particularly evident in cases of
 88 mild-to-moderate depression, where evidence suggests limited efficacy and a risk of adverse
 89 side-effects(4). In addition to the clinical implications, the financial burden on the healthcare
 90 system is substantial with annual spending on antidepressant medication in England
 91 reaching approximately £230 million, with over 86 million items dispensed each year(2).
 92 When applied to individuals in social adversity, such prescribing practices fail to ameliorate
 93 the underlying psychosocial causes and may inadvertently medicalise social suffering(5).

94 Despite concerns regarding long-term efficacy and the potential harms of extended use (6),
 95 long-term antidepressant use is common in the UK(7). In low-SES communities, this is
 96 compounded by structural barriers to deprescribing; while medication may offer initial
 97 symptomatic relief, the persistence of social stress and long waiting lists for talking
 98 therapies(8) often leads to patients remaining on prescriptions for years(7). Safely
 99 deprescribing, or more prudent prescribing on initial presentation, poses significant
 100 challenges. Qualitative research into GP and patient perspectives has shown that clinicians
 101 can feel trapped by systemic constraints, including short consultation times and long waiting
 102 lists for psychosocial therapies, consequently, prescribing can become a pragmatic
 103 response to a lack of available alternatives(8). Our previous research reported this
 104 dissatisfaction among both patients and healthcare providers, finding that consultations often
 105 inadvertently reinforce social distress as a medical issue(5). While participants sought more
 106 holistic, non-pharmacological approaches, they identified a distinct lack of support to
 107 facilitate this shift(5). As such, there is a clear rationale for a structured intervention to
 108 support clinical reasoning and practice.

109 While the UK National Institute for Health and Care Excellence (NICE) guidelines
 110 recommend non-pharmacological interventions as first-line treatment for mild-to-moderate
 111 depression(9), there is a lack of guidance on how to implement these alternatives within the
 112 service pressures of primary care. Research has shown that GPs and multidisciplinary
 113 teams require specific, actionable support to shift consultations away from being prescribing-
 114 focused to placing more emphasis on non-pharmacological options (10). To address this
 115 gap, theory-based frameworks such as the Behaviour Change Wheel (BCW)(11) and the
 116 Theoretical Domains Framework (TDF)(12) can be used to support the systematic and
 117 transparent design of complex interventions. While these frameworks have been
 118 successfully used to modify prescribing behaviour in other clinical areas (13, 14), they have
 119 not yet been applied to the specific challenge of promoting more prudent antidepressant
 120 prescribing. The aim of this study was to address this gap by co-developing a theory-
 121 informed intervention: DeStress-II, designed to support primary care professionals to reduce
 122 antidepressant prescribing for poverty-related mental distress by focusing consultations on
 123 non-pharmacological options.

124 METHODS

125 Study design

126

127 The Behaviour Change Wheel (BCW) Guide(11) is a systematic, eight-step framework that
 128 provides a transparent method for theory-based intervention development by identifying the
 129 specific capabilities, opportunities, and motivations (COM-B) required to change behaviour.
 130 It incorporates the Theoretical Domains Framework which consists of a list of 14 domains
 131 that support the identification of specific factors of the COM-B which influence the target
 132 behaviour. To optimise both the development and evaluation of behaviour change
 133 interventions it is widely recommended they are theory-driven to ensure the active
 134 components of the process are both identifiable and replicable(15).

135
 136 The BCW is structured as a series of concentric circles (See Figure 1). At the core is 'COM-
 137 B' which is based on the premise that people require the Capability (knowledge and skills),
 138 Opportunity (environmental and social resources) and Motivation (beliefs and intentions) to
 139 perform the target Behaviour(11). The next circle is the Theoretical Domains Framework
 140 (TDF) which consists of 14 more granular factors derived from theories of behaviour change,
 141 each one also aligned with capability, opportunity or motivation(12). The next circle provides
 142 nine intervention functions that might change behaviour (education, persuasion,
 143 incentivisation, coercion, training, enablement, modelling, environmental restructuring and
 144 restrictions). The outermost layer is a range of policy categories that can be further used to
 145 support delivery. Working in parallel with the BCW is the Behaviour Change Taxonomy
 146 which details 93 specific, replicable, behaviour change techniques (BCT)(16), seen as the
 147 'active ingredients' of an intervention, they are the smallest observable and replicable
 148 components of an intervention. These are categorised into 16 groups, although they do not
 149 map exactly to the TDF domains as some BCTs can support more than one.

150 **Recruitment of co-development group**

151 The intervention was co-developed by a group of GP trainers, community partners and
 152 researchers who were ultimately all involved in delivering and evaluating the intervention.
 153 The community partners were individuals from low-income communities with lived
 154 experience of mental distress; recruited through the team's existing links within low-income
 155 communities and via National Institute for Health and Care Applied Research Collaboration
 156 networks rather than being patients at the participating practices. GP participants were
 157 invited through Primary Care Networks (clusters of practices that hold some central
 158 functions) and regional primary care training hubs. Three regions of England, all linked to the
 159 aforementioned Applied Research Collaborations were selected to provide a diverse range
 160 of socio-economic contexts to ensure the generalisability of the intervention (South West,
 161 North West Coast and North London). An email advert was sent out across these networks
 162 and further information was provided for potential participants to inform their decision to join
 163 the co-development group. Group meetings were facilitated by members of the research
 164 team and conducted over Zoom in November 2021; detailed notes were taken by research
 165 team members.

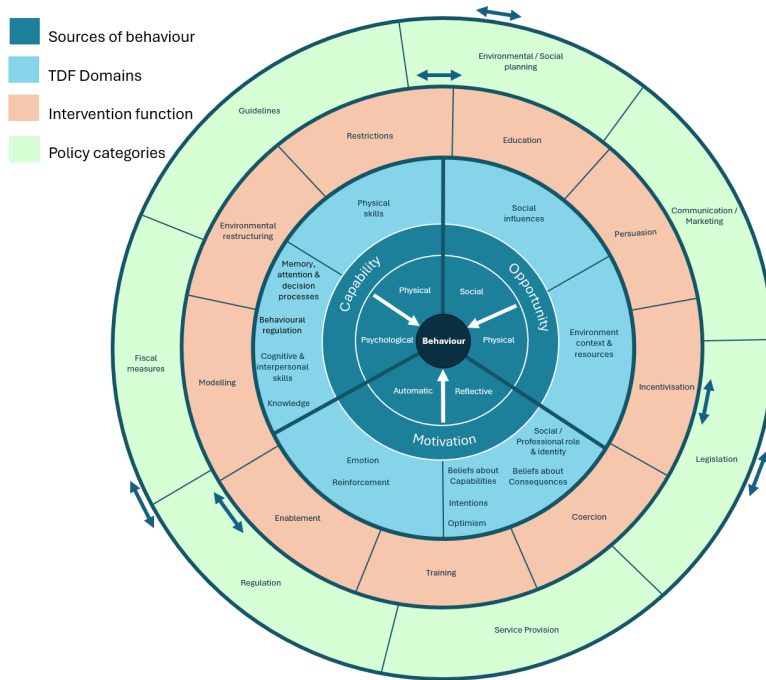
166 **Development of the Intervention**

167 The use of the BCW to guide intervention development consists of eight steps(11) contained
 168 within three stages (See Figure 2). Stage 1 includes the first four steps: the definition of the
 169 problem, the selection and specification of the target behaviour and recommends the use of
 170 group discussions to identify what needs to change. Stage 2 involves Steps 5 and 6 which
 171 identify the 'intervention function' and 'policy categories' to support behaviour change. Stage
 172 3 consists of the final two steps (7 and 8) which are to identify the specific behaviour change
 173 techniques from the BCT Taxonomy(16) of 93 techniques and specify the way they will be
 174 operationalised within the intervention. During the co-development process, consideration
 175 was given to the APEASE criteria(11): affordability, practicality, effectiveness, acceptability,
 176 safety and equity.

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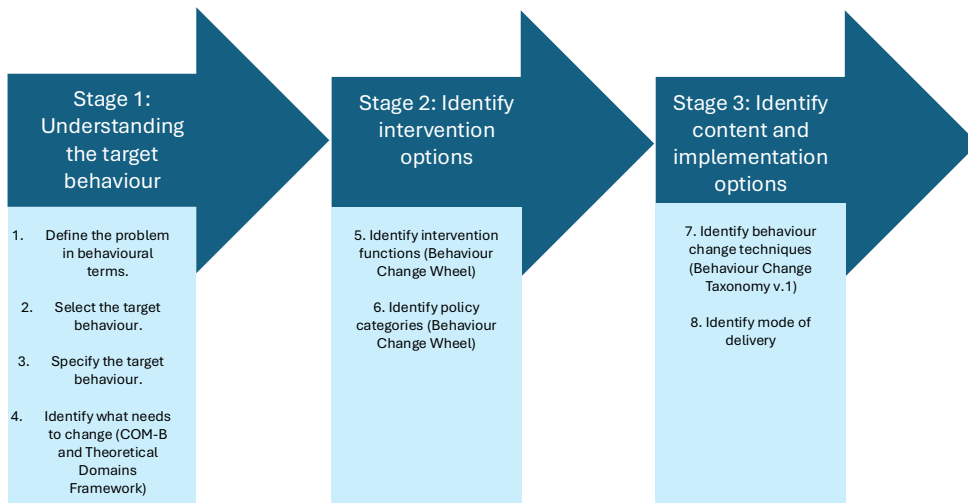
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Figure 1. The Behaviour Change Wheel



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Figure 2. The Behaviour Change Wheel process



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187 **Stage 1 (Steps 1-4): Definition of the problem and understanding the behaviour**

188 The co-development group consisted of GP trainers (n=19), researchers (n=6), and
 189 community partners (n=17). In a three-hour online workshop, the group reviewed existing
 190 evidence regarding stakeholder dissatisfaction with antidepressants as a response to social
 191 distress. The target behaviour was defined as being: prescribers exploring non-
 192 pharmacological alternatives as a primary response for patients experiencing distress arising
 193 from socio-economic circumstances. Findings from previous research were prioritised into
 194 five core intervention messages:

- 195 • Disproportionate rates of prescribing in economically disadvantaged areas.
- 196 • Evidence regarding the limited efficacy of antidepressants.
- 197 • Reported GP dissatisfaction with medicalised responses.
- 198 • Strategies to build trust and empathy within a brief consultation.
- 199 • Visual and lived-experience testimony (including the RCGP "Five minutes to change
 200 your practice" video) about supportive consultations.

201 Informed by their lived experiences as both GPs and people living in low-income
 202 communities, workshop participants considered the barriers and facilitators to changing
 203 prescribing habits, focusing on the capability, opportunity, and motivation required to change
 204 behaviour. These considerations were subsequently coded against the Theoretical Domains
 205 Framework (TDF) to identify specific target domains (Table 1).

206 Table 1. Capability Opportunity Motivation - Behaviour and Theoretical Domains Framework
 207 Domains

COM-B	TDF domain	Key message from co-development group
Capability	Knowledge	Awareness of antidepressant prescribing rates and the link with deprivation.
		Awareness of effectiveness of antidepressants.
	Skills	Do GPs know how to do have conversations about people's social circumstances?
Motivation	Social / professional role and identity	Is exploring other non-pharmacological support compatible with their professional identity?
	Beliefs about consequences	What do they think will happen if they do/do not prescribe antidepressants?
Opportunity	Social comparison	Will they compare their prescribing behaviour with those of their peers?
	Environmental context and resources	Will limited time prevent them trying alternative approaches?

208

209 **Stage 2 (Steps 5–6): Identifying Intervention Options**

210 Building on the Stage 1 findings, we mapped the six identified COM-B components
 211 (knowledge, skills, social / professional role and identity, beliefs about consequences, social
 212 comparison, and environmental context and resources) onto four intervention functions:
 213 education, persuasion, training, and modelling. These were further supported by one policy
 214 category: 'guidelines'.

215 To ensure these options were feasible within the specific constraints of primary care, such
 216 as restricted consultation times, we applied the APEASE criteria (Affordability, Practicality,

217 Effectiveness, Acceptability, Safety and Equity). This process led to the exclusion of
 218 functions like incentivisation, coercion, and restriction, which were deemed neither practical
 219 nor acceptable in a general practice setting. Full details of the APEASE evaluation for each
 220 intervention function are provided in Table 2.

221

222 Table 2: Applying APEASE criteria to guide intervention function selection (Step 5)

Intervention function and definition*	Is the intervention function affordable, practical, effective (and cost-effective), acceptable, safe and equitable?
Education: Increasing knowledge or understanding	Yes
Persuasion: Using communication to induce positive or negative feelings or stimulate action	Yes
Training: Imparting skills	Yes
Environmental restructuring: Changing the physical or social context	Yes
Modelling: Providing an example for people to aspire to or imitate	Yes
Incentivisation: Creating an expectation of reward	Not practical due to context of general practice
Coercion: Creating an expectation of punishment or cost	Neither acceptable or practical
Restriction: Using rules to reduce the opportunity to engage in the target behaviour (or to increase the target behaviour by reducing the opportunity to engage in competing behaviours)	Neither acceptable or practical
Enablement: Increasing means/reducing barriers to increase capability (beyond education and training) or opportunity (beyond environmental restructuring)	Not practical due to context of general practice

223 *Definitions reported in Michie et al. (2014)(11)

224

225 **Stage 3 (Steps 7–8): Identifying Content and Implementation Options**

226 In the final stage of development, we identified specific Behaviour Change Techniques
 227 (BCTs) from the BCT Taxonomy (v1)(16) to operationalise the selected intervention
 228 functions. Many of these techniques were spontaneously identified by the co-development
 229 group as essential for addressing the psychological and social barriers to more prudent
 230 prescribing. Table 3 details the mapping of TDF domains to specific BCTs and describes
 231 how these were enacted within the intervention (e.g., using "Instruction on how to perform a
 232 behaviour" to provide scripts to support empathy within consultations).

233 Following the selection of BCTs, Step 8 involved determining the most effective mode of
 234 delivery. We evaluated potential content, providers and durations against the APEASE
 235 criteria to ensure the intervention was feasible within time-pressured primary care settings.
 236 This resulted in DeStress-II training intervention Version 1, a face-to-face session facilitated
 237 by a GP and a community partner.

238

239

240 Table 3. TDF domain, key message and selected Behaviour Change Technique

TDF domain	Key message from co-development group	BCT and description of how enacted
Knowledge	Awareness of antidepressant prescribing rates and the link with deprivation.	<i>Instruction on how to perform a behaviour:</i> How to talk to people about social circumstances. <i>Information about Antecedents & Re-attribution:</i> How distress is often caused by poverty not mental illness.
	Awareness of effectiveness of antidepressants	<i>Information about health consequences:</i> Information about side-effects, effectiveness data, patient dissatisfaction with GP response
Skills	Do they know how to have conversations about people's social circumstances?	<i>Instruction on how to perform a behaviour:</i> How to build trust and empathy.
Social / professional role and identity	Is not always prescribing antidepressants compatible with their professional identity?	<i>Identity as a role model and Reframing:</i> Information about alternatives to prescribing and reminder that NICE guidelines stating that prescribing should not be first line response.
Beliefs about consequences	What do they think will happen if they do/do not prescribe?	<i>Information about health consequences:</i> Side-effects of antidepressants. <i>Information about their emotional consequences:</i> GP job satisfaction, can be stressful to repeatedly encounter these issues. <i>Salience of consequences:</i> Lived experience testimony from community partners. <i>Comparison of behaviour:</i> their behaviour with the testimony of GP trainer.
Social comparison	Will they compare their prescribing behaviour with those of their peers?	<i>Comparison of outcomes: what do fellow GPs do?</i> <i>Credible source:</i> fellow GP and people with lived experience delivering messages.
Environmental context and resources	Will limited time prevent them trying alternative approaches?	<i>Instruction on how to perform the behaviour:</i> How to use a short consultation differently, both timescales and prompts. Using shared decision making. Applying a bio-psycho-social model of health.
Belief about capabilities	Will they have confidence not to prescribe even if the patient is expecting them to?	<i>Identity as a role model and reframing:</i> Information about alternatives to prescribing and reminder that NICE guidelines state that prescribing should not be first line response.

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The individual BCTs were also tested against the APEASE criteria to ensure they were acceptable.

245 **Implementation of the intervention**

246 ***Phase 1***

247 The study was conducted in two phases to allow for iterative development. In Phase 1
 248 (2022-3), the first iteration of the intervention was delivered to primary care teams recruited
 249 through Clinical Research Networks. Delivery was by a three-person team consisting of a
 250 GP trainer, a community partner, and a research team member. While the preference was
 251 for face-to-face sessions, service pressures and Covid-19 restrictions necessitated that most
 252 sessions were delivered online.

253 DeStress-II training intervention Version 1 was guided by a PowerPoint presentation taking
 254 one hour so could be delivered within a routine practice meeting. It featured visual data,
 255 including maps of antidepressant prescribing rates overlaid on socio-economic deprivation
 256 data and UK prescribing trends. It also incorporated theoretical concepts focused on trust
 257 and engagement, alongside the RCGP 'Five minutes to change your practice' video (See
 258 Table 4). Informed by Cochrane strategies for changing professional practice, the sessions
 259 combined didactic information with discursive, small-group learning led by fellow GP 'opinion
 260 leaders.'

261 Table 4: Content of Intervention: DeStress-II Version 1.

DeStress-II Intervention Version 1 (delivered in person by GP trainer and community partner using Powerpoint slides)
1. Why does this matter?
2. Antidepressant efficacy: research evidence
3. What are the issues for GPs?
4. What are the issues for patients? Community Partners: Lived Experience
5. RCGP Screencast and discussion
6. Two key areas to build on current skills
7. Techniques for engagement and trust
8. Bio-psycho-social elements and their links
9. Suggested Scripts: Supporting not fixing
10. Alternative consultation: investing in the beginning
11. Discussion

262 To capture feedback to inform refinement, sessions were recorded using MS Teams or
 263 encrypted voice recorders in addition to fieldnotes from the delivery team. Two weeks post-
 264 intervention, participants were invited via email to participate in an individual interview. Staff
 265 who opted in provided informed consent via an electronic form and were interviewed, in
 266 private, by a member of the research team (IL, AM, OH, JH) over MS Teams using the
 267 interview schedule provided in Supplementary File 1. The interview questions were piloted
 268 during the first few interviews and minor amendments made. Automated transcripts were
 269 checked for accuracy by the staff member who carried out the interview and corrected and
 270 anonymised and stored in a secure digital environment. Due to the significant service
 271 pressures and time constraints faced by participating primary care staff, transcripts were not
 272 returned to participants for correction or asked to feedback on the findings.

273 These data were analysed by authors FT, KB, IL, AM and KW using descriptive thematic
 274 analysis, supported by NVivo to inform the transition to Version 2. This analysis followed the
 275 systematic approach to coding and theme development outlined by Boyatzis(17). This
 276 ensured descriptive clarity and transparency through the creation of a structured coding
 277 'tree' shared between authors. Unlike more reflexive approaches, this study focused on the

278 consistent application of codes across the data to provide a reliable summary of participants'
279 views. Data saturation was not used as a criterion for ending data collection as sample size
280 was determined by the logistical requirements of the two-phase iterative development
281 process and the aim of capturing a diverse range of perspectives across the different
282 regions. The consistency of themes identified across both phases suggests that the findings
283 provided a comprehensive summary of participant views regarding the intervention's content
284 and feasibility.

285 ***Phase 2***

286 In Phase 2, Version 2 was deployed in 30 different practices as an 11-section online
287 multimedia resource designed for independent, practice-facilitated delivery(see Table 6).
288 This iteration shifted to a model where a practice staff member led the session using a
289 guidance manual, allowing for wider scale-up while maintaining core fidelity. Although the
290 digital format provided flexibility for teams to tailor the session to specific interests and
291 allowed participants to log back in post-delivery, it preserved the potential for one-hour
292 duration and promotion of group discussion. Changes to the content included simplifying the
293 illustrations of the bio-psycho-social model of mental health, the addition of a video of a
294 simulated GP consultation, videos of community partner testimony and specific scripts to
295 promote empathy; removal of the RCGP video (See Table 5).

296 Practices were again recruited through Clinical Research Networks and the interview
297 recruitment, data collection, management and analysis procedures established in Phase 1
298 were again applied to evaluate this second version.
299

300
301**Table 5:** Content of Intervention: DeStress-II Version 2.

DeStress-II Intervention Version 2 (facilitated by practice staff member using an online multimedia resource)
1. Introduction Video: Introduces the rationale Text: Establishes the learning objectives.
2. Societal Distress Video: How increases in demand on General Practice may be influenced by poverty-related mental distress Questions for discussion.
3. Overprescribing Video: The debate on how antidepressants work and the links between distress and depression including why they don't work for some people. Text: summary of research evidence Questions for discussion.
4. Patient experience Video: GP perspective of patient experience then five patients share their experiences and talk about what a successful consultation feels like. Questions for discussion.
5. Shared Understanding Video: alternative approaches to antidepressants. Text: suggested scripts for use in consultations.
6. Supporting the Patient Video: GPs talk about the approaches they find helpful. Questions for discussion.
7. GP Consultation Video: A GP and a patient demonstrate what a successful consultation looks and feels like. Text: suggested techniques for building engagement and trust.
8. Practice team Video: How GPs and health professionals can work collaboratively to support patients and provide care that meets patient need. Questions for discussion.
9. Intended learning objectives A summary of the key messages of the intervention.
10. Extra Resources Links to additional resources that can support further learning.
11. Feedback form

302 *facilitator receives a brief guidance manual by email prior to the session.

303

304 **Reflexivity Statement**

305

306 The research team brought a multidisciplinary perspective to this study. As well as including
307 individuals with clinical expertise, team members came from backgrounds in social sciences,
308 public health and health services research. As such our collective orientation is towards a
309 bio-psycho-social model of health, taking a holistic approach towards understanding mental
310 distress in low-income communities which recognises the many systemic issues such as
311 poverty and social isolation that contribute to poor mental wellbeing.

312

313 While we fully acknowledge the clinical utility of antidepressants in certain contexts, our prior
314 research findings have described high levels of both patient and GP dissatisfaction with
315 inappropriate and over-medicalisation and this has influenced our focus on supporting the
316 use of non-pharmacological alternatives. In acknowledgement of this stance, our inclusion of

317 practicing GPs and GP trainers in the co-development and delivery phases ensured the
318 intervention remained grounded in the realities of primary care. The inclusion of community
319 partners with lived experience added further balance to the team.

320
321 All authors except OH are female, all have undergone research methods training and have
322 substantive experience in the collection and analysis of qualitative data and all but one (IL)
323 are post-doctoral academic researchers.
324

325 **RESULTS**

326 **Feedback on the intervention DeStress-II Version 1**

327 The intervention was delivered to 53 practices, reaching a total of 508 primary health care
328 professionals (including 387 GPs) between November 2022 and February 2023. Twenty-two
329 participants from Phase 1 were interviewed with interviews lasting between ten and 34
330 minutes. Exact numbers of individual refusals were not recorded as recruitment was
331 conducted via email invitation to each practice. A detailed breakdown of interviewee
332 demographics from Phase 1 and Phase 2, including age, sex, and ethnicity, is provided in
333 Table 6.

334

335 Table 6. Participant demographics from Phase 1 and Phase 2
336

		Phase 1: N (%)	Phase 2: N (%)
Profession	GP	19 (86)	24 (49)
	Social prescriber	0	5 (10)
	Advanced nurse practitioner	0	4 (8)
	Mental health practitioner	0	3 (6)
	<i>Practice manager</i>	1 (5)	2 (4)
	Pharmacist	0	2 (4)
	GP assistant	0	2 (4)
	Receptionist	0	2 (4)
	Unknown	0	2 (4)
	HCA	0	1 (2)
	Care coordinator	0	1 (2)
	Physician associate	2 (9)	1 (2)
Sex	Female	15 (68)	38 (78)
	Male	6 (27)	9 (18)
	Unknown	1 (5)	2 (4)
Ethnicity	White British	14 (64)	33 (67)
	British / Asian	4 (18)	10 (20)
	Other White	3 (14)	3 (6)
	Mixed	1 (5)	0
	British / African	0	1 (2)
	Unknown	0	2 (4)
Age range	20-29	2 (9)	3 (6)
	30-39	5 (23)	11 (22)
	40-49	9 (41)	20 (41)
	50-59	4 (18)	9 (18)
	60	0	3 (6)
	Unknown	2 (9)	3 (6)

337
338 During descriptive thematic analysis the data was categorised into three main themes
339 relating to: Content, facilitation and acceptability.
340

341 **Theme 1: Content**

342 The content and message of the intervention was almost entirely favourably viewed. Some
343 recipients experienced it as new information, particularly the information about the limited
344 effectiveness of antidepressants for mild and moderate depression:
345

346 *"I think stats, simple and memorable stats are really helpful (...) I find them really helpful with*
347 *patients, telling a patient that for every seven prescriptions that I write for people in your*
348 *situation, six people will not get any benefit at all (...) is incredibly powerful."* GP, male, White
349 British, South West.

350 Others felt it reinforced what they were already trying to achieve within their consultations:

351
352 *"it's actually things that we're doing already (...) it was good to have that forum to talk about*
353 *(...) what we feel is, you know, the mainstay of our work as well as GPs (...) It wasn't*
354 *anything new."* GP, female, British Asian, London.

- 355 *"I thought it was interesting, it was nicely delivered (...) good to be reminded of all those*
 356 *things."* GP, male, White British, North West.
 357
- 358 With regard to increasing knowledge, some trainers felt that some of the initial information
 359 slides were too complex. As a result, some were simplified, including the bio-psycho-social
 360 influences on mental health and the content of some of the slides was reduced.
 361
- 362 Several participants spoke about the benefits of watching another GP carry out a
 363 consultation and felt that would have been a good addition to the intervention in terms of
 364 improving both knowledge and skills.
 365
- 366 *"we see people having a consultation and we try to sort of understand what's going on and*
 367 *see where we can improve. I think that would have been really good."* Physician Associate,
 368 female, British Asian, London.
- 369 A simulated consultation with a real GP and person who had experienced poverty-related
 370 mental distress was included in the intervention Version 2.
- 371 Some trainers did not want to use the RCGP five-minute video as they felt it recapped what
 372 they were already saying and took up too much time within the duration:
 373
- 374 *"I thought the video was too long (...) we don't have very much time (...) So I trimmed the*
 375 *video (...) we've got experience in the room."* Intervention delivery team member, GP,
 376 female, other white background, North West
- 377 This video was removed from intervention Version 2.
- 378 The intervention presented the importance of improving trust and empathy with patients and
 379 several participants felt suggested scripts of phrases to use with patients would be helpful:
- 380 *"suggestions of how to change wording (...) making it really practical (...) how do we actually*
 381 *do this within our consultation. Clinicians would find it useful to have some sort of catch*
 382 *phrases they could use (...) in (...) supporting and enabling patients."* GP, female, White
 383 British, North West.
- 384 As a result, brief scripts were developed within the research team and refined by the GP
 385 trainers and community partners. For example, *"I'm glad you came to see me today"*, and, in
 386 response to hearing about people's circumstances *"I can understand why you feel upset*
 387 *about that"*; *"You seem to be going through a lot – I would find that very hard too"*.
 388
- 389 **Theme 2: Facilitation**
- 390 The fact it was a GP delivering the intervention along with a community partner was
 391 particularly valued by participants:
 392
- 393 *"Then the way the program was delivered was pretty good and because the GP that came*
 394 *too explained everything, she obviously was very (...) knowledgeable about the topic and*
 395 *had (...) her own experiences."* GP, female, White British, North West.
 396
- 397 The presence of a community partner on the intervention team was also favourably
 398 commented on by many participants.
 399
- 400 *"I also liked that there was actually a patient that (...) had the time to speak about his*
 401 *experience."* Physician Associate, female, British Asian, North Thames.
 402
- 403 Initially only GPs were invited to take part, but as sessions were delivered and feedback
 404 sought, participants said they thought it would be beneficial to invite all practice staff to

405 participate, particularly as some practices had mental health practitioners and social
 406 prescribers and these were frequently referred to in the intervention sessions with GPs. The
 407 subsequent inclusion of different practitioners was not thought to require amendment to the
 408 content of the intervention, but it led to wider discussion about how the practice was working
 409 as a team to support patients experiencing mental distress. The opportunity to discuss the
 410 issue as a practice team was highly valued and some feedback reported that there needed
 411 to be more time for this within the session:

412
 413 *“It’s very hard to get people to interact and in and engage, and the discussion was actually*
 414 *what was really useful. So having someone come to a practice team and discuss it as a*
 415 *team, that was really useful and that’s the way I prefer to do it.”* GP, Male, White British,
 416 North West,

417 Trainers subsequently sought to achieve a better balance between delivering information
 418 and providing opportunity for discussion. This discussion allowed for social comparison as
 419 people shared their experiences. Due to the scheduling of practice meetings, sometimes a
 420 community partner was not available to deliver the intervention with the GP trainer so a
 421 video was created that could be used instead.

422 **Theme 3: Acceptability**

423 In terms of the APEASE criteria, the intervention was seen as affordable, practical and
 424 acceptable due to its short duration, which enabled it to be incorporated into a routine
 425 practice meeting:

426
 427
 428 *“Yeah (...) I think it was the right amount of time.”* GP, female, White British, North West
 429

430 Feedback from participants was sought regarding how the intervention could be
 431 implemented at scale. Consideration was given as to whether it could be delivered by
 432 trainers from existing primary care training teams, but it was felt that the intervention could
 433 be made available directly to practices. The idea of an individual e-learning package was
 434 considered but the discussion between practice colleagues was highly valued and this would
 435 be lost within this mode of delivery. One trainer suggested developing a resource that could
 436 be delivered within the practice by a staff member, during a routine team meeting, therefore
 437 preserving the space for discussion:

438 *“I think the idea of a (...) standalone deliverable package is brilliant, in most practices, they*
 439 *have educational meetings and to have something that’s just ready to go that they can sit*
 440 *and watch (...) I think would fit in very well.”* Intervention delivery team member, GP, male,
 441 White British, South West.

442 A practice facilitated intervention therefore became the aim of the second version.

443 **Feedback on the intervention DeStress-II Version 2**

444
 445 DeStress-II Version 2 was tested in 30 GP practices. We do not have the exact number of
 446 people attending each session it was in excess of 150 . Thirty attendees were interviewed
 447 between June and September 2023, with interviews lasting between 15 and 37 minutes.
 448 Exact numbers of individual refusals were not recorded as recruitment was conducted via
 449 email invitation to each practice. Interviewee demographics are detailed in Table 4. Overall,
 450 the intervention received positive feedback, with data again following the same process of
 451 descriptive thematic analysis into three primary themes: content, facilitation, and
 452 acceptability.

453 **Theme 1: Content**

455 Participants gave favourable feedback about the information presented:

456

457 *"It was clear, it was concise, it wasn't long winded. The videos were bite sized. They were*
 458 *easy to understand (...) I wasn't sitting there thinking 'oh God when this is going to be over!'*
 459 *Far from it, I was really fascinated by it."* Health care assistant, female, White British,
 460 London.

461 Some content was identified as being new information, e.g., information about
 462 antidepressant prescribing rates and effectiveness:

463

464 *"...there were some facts and figures in the session that (...) I wasn't really aware of (...)*
 465 *things like 1/6 of the population on antidepressants, like, you know, 8.3 million. You know*
 466 *(...) we work in primary care, we work in community pharmacy (...) we see these*
 467 *prescriptions day in day out. But the actual numbers (...) was kind of a shock (...) to be*
 468 *honest."* Pharmacist, male, British Asian, London.

469 As before, a small number of others felt the information presented was not new to them but
 470 they felt it reinforced what they tried to apply in their consultation;

471 *"Yeah, hopefully just feeling a bit more confident in my consulting in terms of spending more*
 472 *time talking about alternatives to medication. But I like to think I was doing a bit of that*
 473 *anyway, but I think it just helps to sort of move along that a bit further really."* GP, female,
 474 white British, South West.

475

476 The scripts were the most commented upon aspect of the intervention and the feedback was
 477 all positive:

478

479 *"I also liked the bit where it was talking about (...) ways that you can talk to people. For*
 480 *example, when it says: 'with all the circumstances that you're going through, I think that I*
 481 *would feel the same way' (...) they're very, very helpful. And I've actually started using some*
 482 *of those whilst I talk to patients, I took a little screen shot of it. So I found that really helpful."*
 483 *Care coordinator, female, White British, South West,*

484

485 The video clips of different GPs describing their different experiences were valued by
 486 participants.

487

488 *"Very good. Like because the GPs were talking (...) from their own experience and (...) it*
 489 *wasn't only anecdotal, they were able to put in a context with (...) evidence (...) they were*
 490 *able to match it with (...) the data."* GP, male, British Asian, London.

491 Participants also appreciated having a menu of different Community Partner experiences
 492 they could select to watch within the intervention. This led to more choice than in the
 493 Intervention Version 1:

494 *"it was nice because (...) people doing the session with me could say: 'ohh, I'd like to hear*
 495 *from [Community Partner]' (...) and we could sort of choose people who looked a bit like our*
 496 *patients."* GP, female, White British, London.

497

498 **Theme 2: Facilitation**

499 Several facilitators within the practices reported having enjoyed taking on the role:

500 *"I personally I would say enjoyed facilitating it. I felt it was good to (...) hear what other*
 501 *people have to say."* GP, female, British Asian, London.

502 *"I didn't do too much preparation (...) the instructions were really clear and (...) with little*
 503 *preparation, it was absolutely fine facilitating (...) the instructions were absolutely perfect (...)*
 504 *the approximate timings that were given for each of the sections were helpful."* Practice
 505 Manager, female, White British, North West.

506 The opportunity for discussion within the session continued to be highly valued by the
 507 majority of the participants. There were positive comments about sharing experiences and
 508 approaches as well as a number of comments about the benefits of having ringfenced time
 509 to reflect on one's own practice:

510 *"And then we had half an hour to (...) discuss things amongst this (...) to get to hear all kind*
 511 *of stories and (...) other people's experiences (...) a 35 year old and a 60 year old in the*
 512 *same room (...) definitely they will have things (...) to teach each other."* Pharmacist, male,
 513 British Asian, London.

514 This discussion sometimes led to the session over-running although it is the responsibility of
 515 the facilitator to ensure this does not happen.
 516

517 **Theme 3: Acceptability**

518 The feedback about acceptability was dominated by comments about the duration of the
 519 intervention:

520
 521 *"it's all very time limited and (...) was so well designed. If it became too long, you'd lose*
 522 *interest."* GP, female, British Asian, London

523 *"I like the fact that it was (...) quite compact."* Practice Manager, male, White British, North
 524 West.

525 Intervention Version 2 was not considered to require any further refinement after the
 526 feedback. It has subsequently been validated by the RCGP and is freely available to access
 527 through the project website <https://destressproject.org.uk/>

528 **DISCUSSION**

529
 530 The aim of this study was to co-develop an intervention aimed at GPs and other primary
 531 care staff to improve understanding of the impact of poverty and other social circumstances
 532 on mental health, build greater empathy within a short consultation, promote more prudent
 533 prescribing of antidepressants and encourage the use of non-pharmacological support. To
 534 date, this paper is the first to report use of the Behaviour Change Wheel (BCW)(11) to
 535 develop an intervention for primary care staff about antidepressant prescribing.
 536

537 The use of the BCW incorporating the Theoretical Domains Framework (TDF)(12) supported
 538 the application of a rigorous theory-driven approach to structure the co-development of an
 539 intervention to improve primary care consultations with people experiencing distress as a
 540 result of poverty. In this study, the practical application of the BCW led to greater
 541 transparency and reproducibility. Our approach ensured that we clearly identified the target
 542 behaviour (inappropriate prescribing) and the domains likely to influence this (e.g.,
 543 knowledge and skills) and what behaviour change techniques would be most likely to
 544 effectively target these domains and why (e.g., 'Instruction on how to perform a behaviour'
 545 and 'Re-attribution'). This process also aligned with Medical Research Council guidance on
 546 developing complex interventions, i.e., all components of interventions are specified(18).
 547

548 In addition, the use of the APEASE criteria meant that acceptability and feasibility were
549 considered, further ensuring our intervention was ready for practices to implement with only
550 minimal adaptations. Co-developing an intervention as a standalone resource which can be
551 delivered by a member of staff, means that the intervention can be easily used in primary
552 care settings across the UK and accreditation by the Royal College of General Practitioners
553 further adds to the intervention's credibility. The simple editable web-based design means
554 that it can be easily updated to prevent it becoming outdated.

555
556 The feedback from 70 participants leads us to believe that the DeStress-II intervention has
557 great potential to change primary care staff behaviour. We found that primary care
558 professionals liked the content, and that even when it was not new information it reinforced
559 how people were already trying to shape their consultation. The scripts to prompt empathy
560 were suggested by the Phase 1 participants and were highly valued in Phase 2. The overall
561 design of the intervention was seen as attractive, as well as the way it was structured to
562 allow practices to focus on areas of greater salience to them. The opportunity to reflect on
563 their own practice as a team was valued, especially to consider non-pharmacological
564 support, and the brief duration was crucial to ensure it could be accommodated within
565 pressured services. Our short-term findings have evidenced this impact(19) and ongoing
566 research is exploring the longer term effects of participation in the intervention.

567
568 The BCW approach has been used to develop other interventions in primary care settings,
569 e.g., management of lower back pain(20) and reducing antibiotic use(21). The TDF domains
570 targeted in these interventions had a great deal of overlap with the current study leading to a
571 consensus of what is likely to be most relevant to change behaviours in primary care setting,
572 e.g., knowledge and skills. Jenkins et al(20) also produced information for patients which
573 was not a component of this intervention, but something that we also believe to be important
574 and is a focus of our future research.

575
576 The primary strength of the DeStress-II intervention is that it is was co-developed by GPs
577 and community partners with experiences of the issue of poverty-related mental distress.
578 This meant that we had a range of views and experiences of both the target of the
579 intervention (primary care prescribers) and people with lived experience at the heart of the
580 intervention. Another strength was the use of two rounds of testing, allowing for an iterative
581 co-development process where the intervention was piloted as an expert-led session and
582 based on participant feedback, subsequently refined into a practice-facilitated resource. A
583 further strength is the adaptability of the intervention through the provision of choice of
584 tailoring the content to a particular practice context to ensure aspects that are of most
585 relevance or interest can be used.

586 587 **Study Limitations**

588
589 One potential limitation was that our co-development group were highly motivated to improve
590 such consultations and as such might not have identified all the barriers other GPs might
591 face, although the scope for discussion within the delivery of the intervention did permit
592 practice staff to raise their own issues. Similarly, as practices volunteered to take part in the
593 evaluation of the intervention, they may have self-selected due to already having an interest
594 in the subject and therefore have given more favourable responses. Testing the intervention
595 in a trial setting would address this potential bias. A key limitation faced by this and all
596 interventions that demand time in primary care, is service pressures leading to them not
597 being feasible. However, being able to complete the intervention in one hour goes a long
598 way to mitigate this.

599
600 There are two players in the consultation and this intervention only targets the professional.
601 Information for patients about the effectiveness of antidepressants when distress is caused
602 by social circumstances might further strengthen the intervention.

603
 604 There is almost no research evidence about public perceptions of antidepressant use in the
 605 UK. Exploratory work is required in this area before patient behaviours can be effectively
 606 targeted. Further research is needed to test whether the DeStress-II intervention reduces the
 607 inappropriate prescribing of antidepressants and its impact on referrals to alternative
 608 supports.

609
 610 This is the first intervention to be co-developed to support primary care consultations for
 611 people experiencing poverty-related mental distress. This process has led to the
 612 development of a brief complex intervention that has been found to be both feasible and
 613 highly acceptable for use in time-pressured primary care settings. It is believed that the
 614 primary reason for this success was the co-development of the intervention by both GPs and
 615 community partners with experience of the issues. The transparent method used can be
 616 applied to co-develop other similar interventions.
 617

618 **CONCLUSION**

619 Antidepressant prescribing rates continue to rise in the UK, despite evidence that many
 620 people may not benefit from them, particularly if their mental distress is located in their social
 621 circumstances. This results in significant cost to both the National Health Service and to
 622 individuals who may not benefit from antidepressants, experience unpleasant side-effects
 623 and difficulties stopping their use. Using the Behaviour Change Wheel as a framework, the
 624 study successfully co-developed the DeStress-II intervention aimed at primary care staff to
 625 improve understanding of the impact of poverty on mental health, build greater empathy and
 626 trust within short consultations, promote prudent prescribing of antidepressants and
 627 encourage the use of non-pharmacological support. The intervention was particularly valued
 628 by participants for the practical scripts provided for use in consultations and the opportunity
 629 for multidisciplinary practice teams to collectively reflect on their prescribing habits. The
 630 intervention has been found to be acceptable and feasible for delivery in time-pressured
 631 primary care settings and the methods used are transferable to other health care settings.
 632 Further research is needed to test whether it reduces the prescribing of antidepressants and
 633 referrals to alternative services and whether patient information would be a beneficial
 634 addition to the intervention.
 635

636

637

List of abbreviations

638 APEASE Acceptability practicability effectiveness affordability safety equity
 639 BCW Behaviour change wheel
 640 BCT Behaviour change technique
 641 COM-B Capability Opportunity Motivation Behaviour
 642 ~~CRN Clinical Research Network~~
 643 GP General practitioner NICE National Institute for Health and Care Excellence
 644 RCGP Royal College of General Practitioners
 645 TDF Theoretical Domains Framework
 646 UK United Kingdom

647 **Declarations**

648 **Ethics approval and consent to participate**

649 The study was conducted in accordance with the Declaration of Helsinki. It received
 650 favourable ethical review from the NHS Health Research Authority Research Ethics
 651 Committee (Frenchay - IRAS303179). Informed consent was attained from all participants.

652 Consent for publication

653 Not applicable.

654 Availability of data and materials

655 The datasets generated and analysed during the current study are not publicly available as
656 consent for this was not sought from participants. Data are available from the corresponding
657 author on reasonable request.

658 Competing interests

659 The authors declare that they have no competing interests.

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668 Authors' contributions

669 FT conceived the work and designed the study. KW, KB and IL contributed to the design of
670 the study. FT, KW and KB contributed to the analysis and interpretation of data. IL, KB, OH,
671 JH, and AM contributed to the acquisition, analysis and interpretation of data. KB drafted the
672 work. All authors substantively revised the work. All authors approved the submitted version
673 and agree to be personally accountable for their contribution and to ensure that questions
674 related to the accuracy or integrity of any part of the work, even ones in which the author
675 was not personally involved, are appropriately investigated, resolved, and the resolution
676 documented in the literature.

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680

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