Supplementary file 1: Baseline demographic characteristics for WiserAD interview participants

Table. Participant baseline demographics

	Control n = 6	Intervention n = 7	Total N=13
Age (years) M (SD)	49 (13.7)	48.7 (17.3)	48.8 (15.1)
Gender			
Female n (%)	3 (50)	4 (57)	7 (54)
Education n (%)			
Year 12 or under	2 (33)	1 (14)	3 (23)
Certificate or Diploma	1 (17)	3 (43)	4 (31)
Bachelor degree	3 (50)	1 (14)	4 (31)
Postgraduate degree	-	2 (29)	2 (15)
Marital status n (%)			
Married	3 (50)	3 (43)	6 (46)
Never married	2 (33)	1 (14)	3 (23)
De-facto	-	1 (14)	1 (8)
Divorced	1 (17)	2 (29)	3 (23)
Tapering status at 3-month follow-up			
Completely tapered	1	2	3
Still tapering	-	3	3
Commenced tapering but returned to treatment	-	1	1
Completed tapering but returned treatment	-	1	1
Tapering not commenced	5	-	5
	M (SD)	**M (SD)**	**M (SD)**
Time since dep dx (years)	9.6 (6.5)	15.8 (14.7)	13 (11.6)
Length of time on ADs (years)	8.8 (6.3)	10.2 (8.9)	9.6 (7.5)
Depressive symptoms (PHQ-9)	3.00 (3.34)	4.14 (2.96)	3.61 (3.06)
Anxiety symptoms (GAD-7)	2.16 (1.83)	2.71 (2.81)	2.46 (2.33)
Beliefs about the necessity of the medication (BMQ)	11.83 (2.13)	12.28 (3.81)	12.07 (3.04)
Concerns about the negative effects of the medication (BMQ)	14.66 (3.32)	13.14 (5.20)	13.84 (4.33)
Concerns about the way doctors use medications (BMQ)	11.33 (2.94)	10.00 (3.60)	10.61 (3.25)
Beliefs that medications are harmful (BMQ)	10.00 (3.16)	7.85 (3.02)	8.84 (3.15)
Patient activation (PAM-13)	59.26 (19.10)	59.47 (13.42)	59.37 (15.56)

A note on scoring:

The BMQ consists of 18 questions where participants rate their agreement on a 5-point Likert scale ranging from 1= strongly agree, to 5= strongly disagree.[1,2] Responses are summed for four subscales: 1. Necessity and 2. Concerns with scores ranging from 5-25, and 3. Overuse and 4. Harm with scores ranging from 4-20. A necessity-concern differential was calculated by subtracting the concerns subscale from the necessity subscale for a total score range of -20 to 20 with positive scores indicating stronger necessity beliefs. A cutpoint of 15 for necessity and concern and 12 for overuse and harm is suggested for classifying high and low beliefs.[2,3] Using the high and low classifications, participants are further

categorized into four groups: 1. Sceptical (low necessity, high concerns); 2. Indifferent (low necessity, low concerns), 3. Ambivalent (high necessity, high concerns), and; 4. Accepting (high necessity, low concerns).[1]

The PHQ-9 asks participants to rate how often they have experienced a specific symptom of depression over the last two weeks on a 4-point Likert scale ranging from 0 = Not at all to 3 = Nearly every day. Scores are summed and range between 0 and 27 with higher scores indicating more severe depression.[4] The GAD-7 also asks participants rate how often they have experienced symptoms of anxiety over the last two weeks on a 4-point Likert scale ranging from 0 = Not at all to 3 = Nearly every day. Scores are summed and range between 0 and 21 with higher scores indicating more severe anxiety.[5]

The Patient Activation Measure–Mental Health (PAM)[6] asks participant 13 questions on a 4-point Likert scale ranging from 1 = Disagree strongly to 4 = Agree strongly with an option to select not applicable. A total PAM score ranging from 0 to 100 is calculated by summing the items, then dividing the number of items answered and multiplying by 13. Higher scores indicate higher patient activation.[6]

References

1. Horne, R., Weinman, J. & Hankins, M. The Beliefs about Medicines Questionnaire: The Development and Evaluation of a New Method for Assessing the Cognitive Representation of Medication. *PSYCHOLOGY AND HEALTH* **14**, 1–24 (1999).
2. Horne, R. & Weinman, J. Patients' beliefs about prescribed medicines and their role in adherence to treatment in chronic physical illness. *Journal of Psychosomatic Research* **47**, 555–567 (1999).
3. Bai, H.-H. *et al.* Beliefs about medication and their association with adherence in Chinese patients with non-dialysis chronic kidney disease stages 3–5. *Medicine* **101**, e28491 (2022).
4. Kroenke, K., Spitzer, R. L. & Williams, J. B. W. The PHQ-9. *J Gen Intern Med* **16**, 606–613 (2001).
5. Spitzer, R. L., Kroenke, K., Williams, J. B. W. & Löwe, B. A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine* **166**, 1092–1097 (2006).
6. Green, C. A. *et al.* Development of the Patient Activation Measure for Mental Health (PAM-MH). *Adm Policy Ment Health* **37**, 327–333 (2010).

Supplementary file 2: Interview guide

Question	CMO	Purpose
I'm Amy and I'm a PhD student that is interested in mental health and antidepressant treatment. My educational background is in psychology and I have been an academic researcher in the primary care mental health research team in the Department of General Practice for the last 8 years. Firstly, thank you very much for speaking with me today, I am really looking forward to hearing about you! This interview should take about 30-45 minutes but if you need to stop or take a break at anytime please let me know. Otherwise, please feel free to take as much as time you like to respond. I will take some notes as we go along, but with your permission I would like to record this interview to make sure I remember everything you tell me correctly. Is that ok with you? **Yes** to recording – Great, thank you. When I begin recording I will ask you again if you are happy to take part in the interview and if you are happy to be recorded. Then we will get into the interview. Does that sound ok? Yes – hit record. **No** to recording – That is perfectly fine, I will be taking some notes, so just bear with me as I do this. Thank you again for speaking with me today. Can I just confirm that you are happy to be taking part in this interview? **No** – stop interview. Gently check what the barriers to participating are. Reschedule interview if necessary. **Yes** – continue. And can I confirm that you are happy for this interview to be recorded? **No** – stop recording and check if participant is happy to proceed just with note taking and/or gently check what the barriers to recording are. **Yes** – continue.	N/A	Preamble/admin
Wonderful. I'm going to ask a few questions, but when you're talking I won't interrupt – I'll just be listening and jotting a few things down, so take your time with answering. To begin with, would you be able to tell me a little about yourself? *Prompts: your work, education, hobbies, family, friends, pets, anything that comes to mind.*	N/A, maybe some context	Rapport building
Great, thank you. Is there anything else that comes to mind before we move on? I'd like to delve a little into your mental health journey. Can you tell me about that? Start wherever you like and no detail is too big or small, I'm interested in everything that comes to mind. *Prompt: Feel free to start anywhere, maybe from when you first started experiencing symptoms or when you first sought help for your depression?* *Prompt: "What happened then…"*	Context C1, C2, C3, C4, C5 Mechanism M1, M2, M3, M4	Rapport building, journey development,
Can you tell me what your experiences of your mental health care have been?	Context	

Prompt: For example, what have your experiences been of receiving care or support for your mental health?	C1, C2, C3, C4, C5 Mechanism M1, M2, M3, M4	
If needed: Can you tell me [more] about your experiences with antidepressant medications? Maybe start from when you were first prescribed? What about before you were prescribed? And then what has happened after you were first prescribed?	Context C1, C2, C3, C4, C5	
If needed: I'm going to change the topic slightly now, if that's ok. Can you tell me about your experiences of antidepressant deprescribing? Regarding the study you're currently in, can you tell me about your experiences from where and when you found out about it? And what happened from there?	Mechanism M1, M2, M3, M4	
Well, that's all the questions I have today. Thank you so much for sharing your experiences with me, I really appreciate your time and your openness. Before I let you go, is there anything else that you might like to share, that we haven't covered today? Yes – continue interview No – No? That's ok…	N/A	Wrapping up interview
Sometimes it's hard to remember things when we're put on the spot! If anything does come to mind over the next few days, please feel free to get in touch with me and we can have another chat or you're more than welcome to send me an email with your thoughts. Do you have my contact details, or would you like me to send them to you via email? Lovely, well thank you again for your time. As token of my appreciation I will send you your gift card via email in the next couple of days. Thank you, take care.	N/A	Concluding interview

After interview if needed:

- Who first prescribed you antidepressants? Is this still the same person prescribing your antidepressants now?
- If you could change anything about the current approach to antidepressant deprescribing what would that be? What would you keep? Why?

General prompts:

- What happened after that?
- Can you tell me a bit more about…?
- What led you to…?
- How did you feel about…?

Supplementary file 3: Example framework for an individual participant (Participant 9)

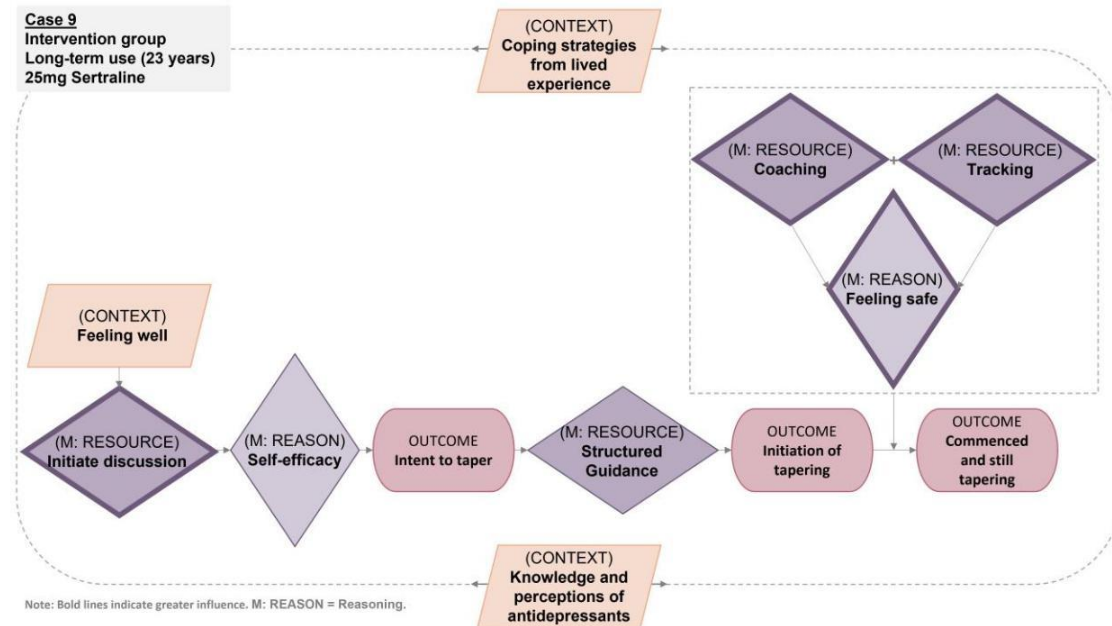

Figure. Mechanisms of action framework for participant 9.

Supplementary file 4: Emerging CMOc configurations

Table. Emerging CMO configurations for antidepressant deprescribing

CMO 1	Individual has stable mental health (C), may have established non-pharmacological coping skills (C), may have some knowledge about antidepressant tapering, and does not have a strong belief about the necessity of antidepressants or may be concerned about taking antidepressants (C). The deprescribing discussion is initiated by WiserAD and/or patient and GP provides support to commence (M). Individual feels confident and ready to attempt tapering (M) and intends to commence deprescribing (O).
CMO 2	Individual may have some knowledge about antidepressant tapering (C) and is provided with structured guidance for tapering (M). The tapering period commences (O).
CMO 3	Individual may utilise established non-pharmacological coping skills (C). Coaching and troubleshooting is provided throughout tapering period (M) and individual tracks mental and physical health (M). Coaching and/or tracking supports the patient to feel safe during tapering (M). Tapering is completed (O).