

Supplement 3. Statistical analysis

The statistical analysis implemented in this review was closely based on the methods described in a Bayesian systemic review of barriers and enablers to immunisation uptake (1). The distinct feature of this analysis is the use of an expert elicitation task in eliciting the prior.

STEP 1. Expert elicitation task: prior

This meta-analysis reviews modifiable and contextual determinants of physical activity in HF. The determinants of the behaviour are often described inconsistently, especially across epistemologically diverse studies. In the present review, the barriers and enablers to physical activity in HF are identified and categorised according to the Theoretical Domains Framework (TDF) (2).

Data extraction from qualitative studies

The Consolidated Criteria for Reporting Qualitative Research item list, COREQ, (3) informed the data extraction from qualitative studies.

The expert elicitation task was completed before the exposure to the identified quantitative studies and data analysis. First, the authors read the protocol; then, they completed the expert elicitation task.

Data synthesis to inform the expert elicitation task

The descriptions of the important influences on physical activity in HF provided by the authors of the identified qualitative studies were coded into the domains and belief statement (i.e. '*parses*' with a similar underlying meaning were summarised into single statement). The primary participant quotes included in the identified systematic review were annotated using the TDF (2). A domain was listed as relevant if it was mentioned to influence the behaviour at least once. The strength of each domain's explanatory role in physical activity behaviour was judged from the normative phrasing and language used by the authors of the included papers in narrating qualitative summaries of the results. If coders perceived that a parse could be classified as more than one domain, it was classified as all relevant domains. The parses were also mapped onto constructs that describe them most closely (using TDF (2), APA dictionary (4), and NICE HF guidelines (5)). The list of constructs produced from this content analysis was then mapped onto the exact description of the factors under investigation across the included quantitative studies. The precise definitions and constructs were used for quantitative analysis.

The reviewers included: one professor of health psychology with extensive expertise in physical activity research (AC); one lecturer of health psychology to medical students, with expertise in research on psychosocial outcomes in cardiovascular disease (AT); three health psychology PhD students with experience

in TDF qualitative research in the context of health and health care implementation (AA, BV, NA), and one Clinical Health Psychology Doctorate Trainee specialising in physical activity (LT).

Three reviewers (AA, AC, BV) independently, line-by-line, annotated the qualitative studies' result section using the Theoretical Domains Framework, TDF (2). The coding agreement was high (AA vs AC: 87%; AA vs BV: 76%; BV vs AC: 86%). The descriptions of the important influences on physical activity in HF provided by the authors were coded into TDF domains. These descriptions were compared to the definitions of various psychosocial constructs from the TDF, APA dictionary (4), and NICE HF guidelines (5), supplement 3.

Qualitative evidence – prior distribution.

Table 1. Barriers and enablers to physical activity in HF identified as relevant by qualitative studies.

TDF domain	Constructs	Themes as identified by authors and exemplar quotes	Summary	
Barriers and enablers that were identified relevant by the qualitative evidence and were assessed in quantitative studies				
<i>Beliefs about Capabilities</i>	Beliefs about ageing (years)	<p>Changing Soma</p> <p><i>'Changing soma refers to a decline in physical and mental abilities, which many participants thought was related to ageing. An altered body was perceived to be a natural part of getting older by some of those participating in reviewed studies, who mentioned feeling too old to amend their behaviours. But the body could also be experienced as failing' (Tierney et al., 2011b)</i></p> <p><i>'because of increasing age, the future itself would be marked by a change in physical functioning' (Tierney et al., 2011b). There were participants who perceived that their age and not only their chronic HF had an impact on their physical capacity.</i></p> <p><i>These individuals seemed more adaptive to physical limitations, as they accepted them as a natural part of the process of ageing and were thus more likely to try to attempt activities and test their functions, as they did not consider strain on the heart a problem." (Pihl et al., 2011).</i></p>	<p>Perceived decline in physical capability to perform physical activity was summarised in a theme (<i>Changing Soma</i>) and was attributed to somatic changed due to age and the decline in functional capacity.</p>	Medium Barrier
<i>Beliefs about Capabilities</i>	Perceived decline in physical Functioning/Functioning	<p>Not believing in one's own ability (Decline in Functioning)</p> <p><i>There were participants that considered their limited physical capacity and need of support as a burden because they experienced that they inconvenienced the helpers, while others found it natural that friends and family members helped them: 'There's a lot that needs to be done. I make a list of things that I can't manage myself. For example, I can't carry a whole basket of laundry from the</i></p>	<p>Beliefs about Capabilities comprised of themes such as 'Changing soma' and 'Self-efficacy' or 'Not believing in one's ability'.</p>	Medium Barrier

		<i>basement.// But my children take care of that when they come home.'</i> (Pihl et al., 2011).	<p>'Changing soma' included both reported physical functioning (due to age or otherwise) and perceived psychological capability (self-efficacy). The former was categorised as either symptoms or general decline in functioning. Self-efficacy, being identified as a theme in its own right was coded as an important enabler. Comorbidity, ageing, and functioning were components of the theme 'Changing soma' or 'Not believing in one's ability', and therefore are described as medium barriers.</p>	
<i>Beliefs about Capabilities</i>	Experienced comorbidity	<p>Changing Soma</p> <p><i>'They hoped to return to being active but felt limited at present because of other conditions (e.g. arthritis) and/or HF symptoms (e.g. fatigue and breathlessness).'</i> (Tierney et al., 2011b)</p>		Medium Barrier
<i>Beliefs about Capabilities</i>	Perceived symptoms	<p>Fluctuating health</p> <p><i>'I'm breathless and tired, that's what I am, but I never think about that, I'm quite well. (Ekman, Ehnfors, & Norberg, 2000, p. 133, (Tierney et al., 2011b)</i></p> <p><i>'They hoped to return to being active but felt limited at present because of other conditions (e.g., arthritis) and/or HF symptoms (e.g. fatigue and breathlessness).'</i> (Tierney et al., 2011b)</p>		Important Barrier
<i>Beliefs about Capabilities</i>	Self-efficacy ¹	<p>Not believing in one's own ability</p> <p><i>'There were participants that considered their limited physical capacity and need of support as a burden because they experienced that they inconvenienced the helpers, while others found it natural that friends and family members helped them: 'There's a lot that needs to be done. I make a list of things that I can't manage myself. For example, I can't carry a whole basket of laundry from the basement. // But my children take care of that when they come home.'</i></p> <p>(Pihl et al., 2011).</p> <p>Self-efficacy</p> <p>(Tierney et al., 2011a)</p>		Important Enabler
<i>Social Influences</i>	Social support (enabler)	<p>Interpersonal influence of family and others</p> <p><i>'Exercising with others in these classes was said to help maintain motivation; several people enjoyed attending because they met peers who were "in the same boat' (Tierney et al., 2011a)</i></p>	<p>Social support (enabler) included quotes describing the provision of support that enabled individuals to engage in physical activity, such as emotional support and reassurance: I have a friend, and we kind of team up and help each other stay on the straight and narrow. It's a lot easier when you have someone to share it with. (Pihl et al., 2011). These were aggregated into 'Social and interpersonal influences' theme</p>	Important Enabler

<i>Emotion/Optimism</i>	Negative emotion	<p><i>Negative emotional response</i></p> <p><i>'Negative emotional response (e.g., low mood, frustration) to changed physical status was described in several papers. Pessimistic reactions to physical changes could have a deleterious impact on willingness to exercise as a consequence. Not knowing when they would experience deterioration in health made certain patients feel helpless: . . . we don't go anywhere, we've got a wedding invitation and hope to God that things are a wee bit better so that we can go, just to get us out somewhere, you know. (Pattenden et al., 2007, p. 276, in Tierney et al., 2011a)</i></p>	A theme 'Mental outlook', coded as an important enabler, spanned across three domains and included: positive attitude toward physical activity (<i>Emotion</i>) and Optimistic beliefs (<i>Optimism</i>).	Important Barrier
<i>Belief about Consequence</i>	Positive physical activity attitude	<p><i>Mental outlook</i></p> <p><i>'[] patients expressed a more positive outlook; they tended to speak optimistically about the future (e.g. they mentioned getting on with life, receiving the best care possible); even though it may have been a shock at the time of diagnosis, the sense of fear described by those not undertaking regular exercise was missing from interviews...' (Tierney et al., 2011b)</i></p>	Similarly, coders agreed that the theme identified by the authors of included study: ' <i>Negative emotional responses</i> ' can be described in terms of <i>Emotion</i> domain (i.e. emotional response toward physical activity that impacted willingness to engage in physical activity) and Optimism (' <i>Not knowing when they would experience deterioration in health made certain patients feel helpless</i> ').	Important Enabler
Barriers and enablers that were identified relevant in qualitative studies but were not assessed in quantitative studies				
<i>Beliefs about Consequences</i>	Outcome Expectancies (positive)	<p><i>Having realistic expectations about the future</i></p> <p><i>'Focus on the participants' expectations of their future life. Aspects derived: Assuming a need for change in daily life, striving to maintain the quality of daily life and continuously making progress in daily life.' (Pihl et al., 2011).</i></p> <p><i>'Fluctuating health'</i></p>	The theme coded within Beliefs about Consequences was 'Fluctuating health' (Tierney et al. 2011b). It covered rapid onset and unpredictable course of symptom severity such as breathlessness and fatigue upon physical activity. This was coded as an important barrier. The Beliefs about Consequences included beliefs	Important Enabler

		(Tierney et al. 2011b)	about the improvement in cardiac health: "Some individuals reevaluated life following diagnosis and became more active because they thought this was good for their heart." (Pihl et al. 2011). In addition, avoidance of independence was another outcome expectancy associated with physical activity: 'You just have to struggle and get up . . . you have to practice that . . . because I know how things go if you get too dependent on your bed; people have to come in and help you more often.' (Pihl et al., 2011).	
Social, Professional Role and Identity	Self-identity/ social role	<p><i>Losing one's social role in daily life</i></p> <p><i>'The participants described losing their social network as well as their position in society' (Pihl et al., 2011).</i></p>	Social Professional Role and Identity was described as a theme entitled: "Losing one's social role in daily life. The included description provided by the authors: 'A lack of important issues, mental as well as physical, occurred when they lost the physical capacity to perform activities of daily life.'	Important Barrier
Social Influences	Social support (barrier)	<p><i>Interpersonal influences of family and others</i></p> <p><i>Interpersonal influences of family and others shaped activity levels. Physical limitations called for patients to accept help. This was difficult, seeing family members doing housework and not being able to assist as they wished. Individuals could be left feeling dependent, which contributed to the frustration and low mood (Tierney et al., 2011a)</i></p> <p><i>Others' expectations</i></p> <p><i>'Family members were overprotective. Held on to advice given to them by professionals when diagnosed not to over-exert themselves.'</i> (Tierney et al., 2011b)</p>	Social support (Social Influences) was of two kind. The first involved quotes describing significant others or family carrying out activities on behalf of the participants, which was coded as Social support (barrier).	Important Barrier

<i>Environmental Context/Resources, Social Influences, Knowledge</i>	General social and environmental factors: Credible advice, reassurance	<p>External factors</p> <p><i>'Uncertainty was raised about how much exercise could be carried out safely. Some interviewees also wanted further advice about how to target parts of their body through exercise.'</i></p> <p><i>(Tierney et al., 2011b)</i></p>	Environmental Context and Resources included environmental influences such as medication (unspecified), environment (e.g. garden), seasonal changes, hills/incline. The property of the environment defined whether it imposed a barrier or an enabler. Overall, the medication caused side effects and led to a decline in activities. On the other hand, well-managed pharmaceutical treatment (unspecified) promoted a physically active lifestyle.	Important Enabler
<i>Environmental Context and Resources</i>	Local environment	<p>Environmental influences</p> <p><i>'Participants generally felt more energetic when the spring came, While winter was reported to be a difficult season for them in this respect. Given that most people defined walking as their main form of exercise, the weather could have a significant impact on behaviours; ice, rain and cold temperatures deterred them from undertaking this activity, as did very hot weather.'</i> <i>(Tierney et al., 2011b)</i></p>	Having local environments such as garden was an important enabler. Seasonal changes guided the seasonal fluctuation in physical activity. Participants reported to be more active during summer and spring and less so during winter.	Mixed
<i>Behavioural Regulation</i>	Problem solving	<p>Need of finding practical solutions in daily life</p> <p><i>There's a lot that needs to be done. I make a list of things that I can't manage myself. For example, I can't carry a whole basket of laundry from the basement. // But my children take care of that when they come home.'</i> <i>(Pihl et al., 2011).</i></p>	<i>Behavioural Regulation</i> included a theme such as "Need of finding practical solutions in daily life" as well as a direct quote which was coded within another theme, described as "Changing soma", which referred to the decline in the ability to plan activities associated with the general decline in functioning: "For example, the unpredictability of symptom onset made it hard to plan activities, with a lack of energy sometimes interfering with scheduled events."	Important Enabler

A prior elicitation task was developed to capture experts' beliefs about the probability distribution for physical activity conditioned on the constructs identified relevant in qualitative evidence (i.e., informative prior). The task asked the experts to share their beliefs about the probability of physical activity in 30 scenarios. The scenarios illustrated hypothetical HF patients. The 30 hypothetical HF patients were described to either display a construct or not in three sets of combinations of the constructs identified in qualitative studies (Appendix 1). The reviewers (AA; LT; BV; NA; AC; AT) completed the expert elicitation task (results are summarised in Figure 1).

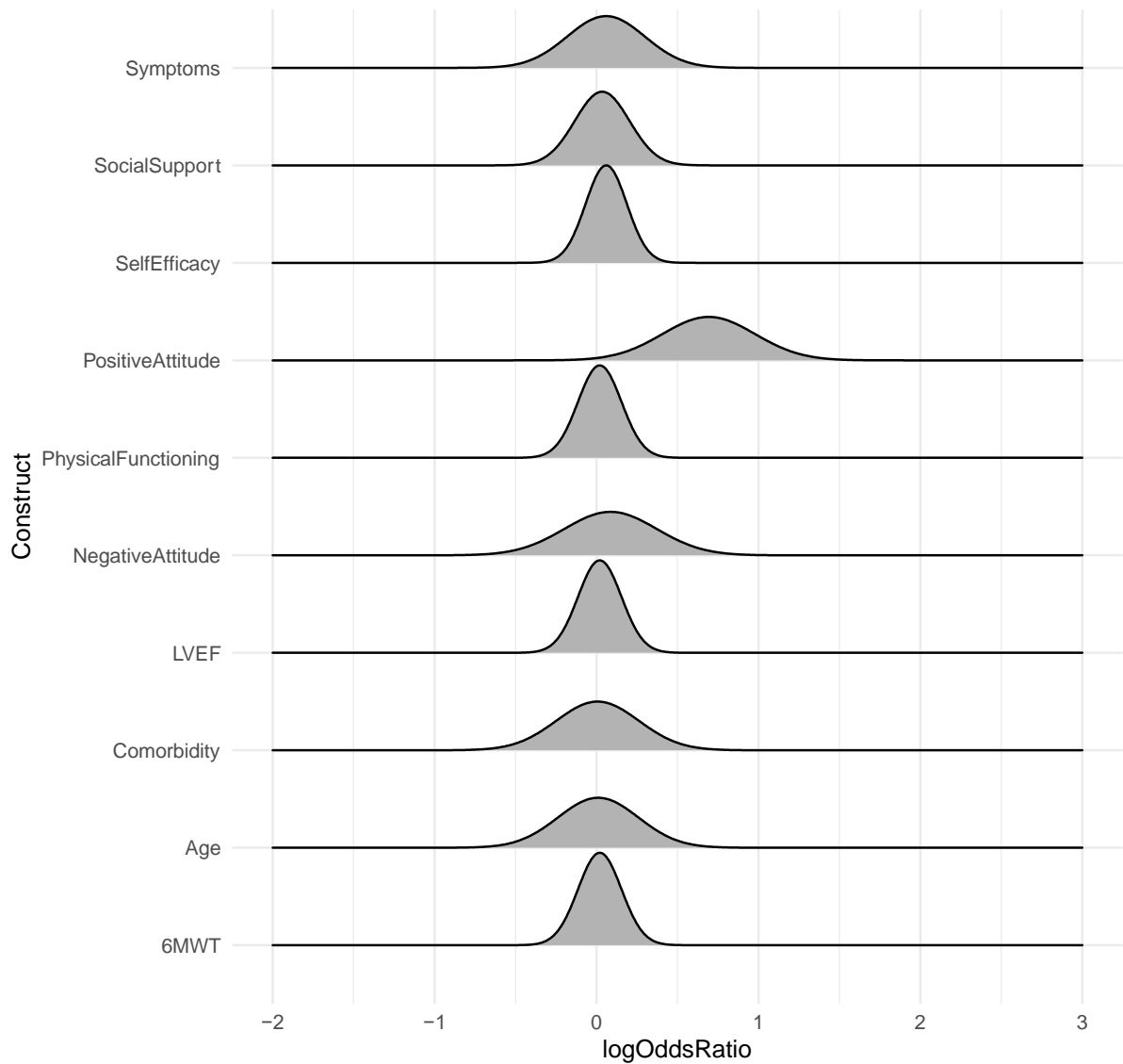


Figure 1. Prior elicited from experts (N=6) after the qualitative evidence appraisal using prior elicitation task.

Experts were presented with 30 scenarios (the data included a table with 30 scenarios x 6 experts) describing HF patients who exhibit a number of constructs or do not (e.g., self-efficacious but does not perceive any social support to be physically active and so on). For example, there are 15 scenarios where HF patient is efficacious ($X = 1$) and 16 where they are not ($X = 0$). Experts were asked to make a judgement on whether they think the hypothetical patient engaged in physical activity at recommended level or they do not.

$\log OR$ for the association between a construct being present in a hypothetical scenario describing a patient and the experts' judgement that the patient is physically active was calculated. The sampling variance of the association between a construct being present in a scenario and experts' judgement that the hypothetical patient described in the scenario is likely to be active. The prior was elicited using the following parameters (mean = Pooled $\log OR$ from the expert elicitation task) and variance (sampling variance of the experts' responses:

Prior = $N(\mu_{\text{prior}}, \sigma^2_{\text{prior}})$, where μ_{prior} is $\log OR$ from the expert elicitation task and σ^2_{prior} is sampling variance from the expert elicitation task.

STEP 2. A meta-analysis including univariate associations: the likelihood

Data extraction from quantitative studies

The data items were extracted using The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) items (6).

The findings of the quantitative studies were tabulated in the following format: baseline physical activity levels, numbers of events (exercise compliant vs exercise non-compliant). For cohort and cross-sectional studies assessing continuous variables the mean and standard deviation (SD), and the association statistic (r , ρ , beta coefficients, unadjusted estimates, and, if applicable, confounder-adjusted estimates and their precision: 95% confidence interval); the list of confounds that the summary statistic was adjusted for as well as the reasons for including this confound was extracted. When categorised/dichotomised physical activity outcome or the determinant was reported, the category boundaries were detailed accordingly.

Statistical analysis

The association between physical activity and determinants assessed in quantitative studies were summarised in a meta-analysis including univariate associations using a random-effect model with maximum likelihood estimation (REML). The bivariate correlation (Pearson's r coefficient, unadjusted) between physical activity and an associated variable and the standardised mean differences (*SMD*) between groups in the dichotomised assessment were summarised in a pooled estimate, separately. The cut-off points used to define exercise compliance were noted for each study. In studies reporting categorical variables, the standardised mean difference between upper bound category and lower bound category were used as an effect size estimate and integrated into the frequentist meta-analysis (e.g., when comparing age between three groups, (1) those who performed >150 minutes, (2) 60-150 minutes, and (3) <60 minutes of physical activity, group 1 and 3 were compared). The meta-analyses were implemented in R using the *metafor* library (7). The sampling distribution variance was standardised using an r - z transformation. This was done to mitigate heterogeneity in the measurement of the outcome. *SMD* between exposure and control was estimated for the same reason. *compute.es* library in R was used to convert effect sizes reported in each included study into *log OR*.

STEP 3. Bayesian updating

Overlap in constructs that were studied across qualitative and quantitative studies

Constructs such as age, comorbidity, social support, symptom severity, functioning, and self-efficacy, negative emotion and positive attitude toward physical activity were suggested to be relevant to the behaviour in the qualitative studies and are also assessed in quantitative studies. Therefore, the association between these constructs and physical activity stratified by the outcome were assessed in Bayesian analysis.

The likelihood (pooled log Odds Ratio) of physical activity in the presence of a construct was obtained from the included quantitative studies ($n = 24$). The summary statistic (i.e., SMD, r -z, F-values) representing the relationships between physical activity and a construct were extracted from each study ($n = 24$) and then were converted into log OR using Cochrane handbook formulas using compute.es library in R. Then these log OR from individual studies were pooled in a meta-analysis. Likelihood distribution was elicited as follows:

Likelihood = $N(\mu_{\text{likelihood}}, \sigma^2_{\text{likelihood}})$, where $\mu_{\text{likelihood}}$ is pooled *log OR* from the meta-analysis including quantitative studies, and $\sigma^2_{\text{likelihood}}$ is sampling variance from the meta-analysis including quantitative studies.

As the final fourth step, the posterior Gaussian distribution was obtained by updating the prior with the likelihood for physical activity conditioned on each construct separately using Bayesian updating as specified by Spiegelhalter et al. in equation 3.15 on p 63. ((8)., p.63:

$$\text{Posterior} = N(\mu_{\text{posterior}}, \sigma^2_{\text{posterior}})$$

Where mean is:

$$\mu_{\text{posterior}} = (\mu_{\text{prior}} / \sigma^2_{\text{prior}} + \mu_{\text{likelihood}} / \sigma^2_{\text{likelihood}}) / (1 / \sigma^2_{\text{prior}} + 1 / \sigma^2_{\text{likelihood}})$$

And variance is:

$$\sigma^2_{\text{posterior}} = 1 / (1 / \sigma^2_{\text{prior}} + 1 / \sigma^2_{\text{likelihood}})$$

Appendix 1. Expert elicitation task

The review aims to summarise both qualitative and quantitative evidence regarding barriers and enablers to physical activity in heart failure.

Please read the research articles attached and choose Theoretical Domains (Cane et al., 2012) that are suggested to be relevant to physical activity in heart failure according to the findings of each article:

Please take a minute to consider the research findings and what implications they would have if they described a number of **hypothetical** heart failure patients.

Below are short scenarios describing hypothetical heart failure patients (*Patient A to Patient X*). Each scenario is presented on a separate page. For each scenario, based on the findings of the papers you have read (Tierney et al., 2011a; Tierney et al., 2011b; Pihl et al., 2011) and **nothing else**, please respond to two questions:

- a) do you think the patient engages in physical activity at a recommended level (*walks every day and performs at least 10 minutes of aerobic exercise, such as brisk walking once a week*)?
- b) how certain are you in your answer?

Please read each scenario **one at a time**. Then, for each scenario, respond to the questions before you move on to the following scenario. Please **do not compare scenarios** to each other in making decisions about your responses and consider each scenario in isolation.

1. Patient A is 54 years old; has diabetes and arthritis; is confident in one's ability to engage in physical activity but perceives a low level of social support to do so.

After considering the qualitative evidence, do you think Patient A engages in physical activity at a recommended level?

☒ YES

☐ NO

2. Patient B is 76 years old; has diabetes and arthritis; lacks confidence in one's ability to engage in physical activity, but whose friends and family encourage to be active.

After considering the qualitative evidence, do you think Patient B engages in physical activity at a recommended level?

☐ YES

☒ NO

3. Patient C is 54 years old; does not have any other illnesses; is confident in one's ability to engage in physical activity but perceives a low level of social support to do so.

After considering the qualitative evidence, do you think Patient C engages in physical activity at a recommended level?

☒ YES

☐ NO

4. Patient D is 76 years old; has diabetes and arthritis; is confident in one's ability to engage in physical activity but perceives a low level of social support to do so.

Do you think Patient D engages in physical activity at a recommended level?

☐ YES

☒ NO

5. Patient E is 54 years old; has diabetes and arthritis; lacks confidence in one's ability to engage in physical activity, but whose friends and family encourage to be active.

After considering the qualitative evidence, do you think Patient E engages in physical activity at a recommended level?

☐ YES

☒ NO

6. Patient F is 76 years old; does not have any other illnesses; lacks confidence in one's ability to engage in physical activity but perceives a low level of social support in being physically active.

After considering the qualitative evidence, do you think Patient F engages in physical activity at a recommended level?

☐ YES

☒ NO

7. Patient G is 76 years old; has diabetes and arthritis; lacks confidence in one's ability to engage in physical activity and perceives a low level of social support to do so.

After considering the qualitative evidence, do you think Patient G engages in physical activity at a recommended level?

☐ YES

☒ NO

8. Patient H is 54 years old; does not have any illnesses; lacks confidence in one's ability to engage in physical activity and perceives a low level of social support to do so.

After considering the qualitative evidence, do you think Patient H engages in physical activity at a recommended level?

☐ YES

☒ NO

9. Patient I is 76 years old; does not have any other illnesses; lacks the confidence in one's ability to engage in physical activity, but whose friends and family encourage to be active.

After considering the qualitative evidence, do you think Patient I engages in physical activity at a recommended level?

☐ YES

☒ NO

10. Patient J is 54 years old; has diabetes and arthritis; lacks confidence in one's ability to engage in physical activity, and perceives a low level of social support to do so.

After considering the qualitative evidence, do you think Patient J engages in physical activity at a recommended level?

☐ YES

☒ NO

11. Patient K is 76 years old; has diabetes and arthritis; is confident in one's ability to engage in physical activity, and whose friends and family encourage to be physically active.

After considering the qualitative evidence, do you think Patient K engages in physical activity at a recommended level?

☒ YES

☐ NO

12. Patient L is 76 years old, does not have any other illnesses; is confident in one's ability to engage in physical activity, but perceives a low level of social support to do so.

After considering the qualitative evidence, do you think Patient L engages in physical activity at a recommended level?

☒ YES

☒ NO

13. Patient M is 54 years old; has diabetes and arthritis; is confident in one's ability to engage in physical activity, and whose friends and family encourage to be physically active.

After considering the qualitative evidence, do you think Patient M engages in physical activity at a recommended level?

☒ YES

☐ NO

14. Patient N is 54 years old; does not have any other illnesses; is confident in one's ability to engage in physical activity, and whose friends and family encourage to be physically active.

After considering the qualitative evidence, do you think Patient N engages in physical activity at a recommended level?

☒ YES

☐ NO

15. Patient O is 76 years old; does not have any other illnesses; is confident in one's ability to engage in physical activity, and whose friends and family encourage to be physically active.

After considering the qualitative evidence, do you think Patient O engages in physical activity at a recommended level?

☒ YES

☐ NO

16. Patient P is 54 years old; does not have any other illnesses; lacks the confidence in one's ability to engage in physical activity, but whose friends and family encourage to be physically active.

After considering the qualitative evidence, do you think Patient P engages in physical activity at a recommended level?

☐ YES

☒ NO

17. Patient Q is 76 years old, his functioning and somatic state declined in the past few years, and he experiences moderate to severe HF symptoms.

After considering the qualitative evidence, do you think Patient Q engages in physical activity at a recommended level?

☐ YES

☒ NO

18. Patient R is 54 years old, did not experience a decline in his physical functioning (changing soma), and does not show any HF symptoms.

After considering the qualitative evidence, do you think Patient R engages in physical activity at a recommended level?

☒ YES

☐ NO

19. Patient S is 54 years old, his functioning and somatic state declined in the past few years, and he experiences moderate to severe HF symptoms.

After considering the qualitative evidence, do you think Patient S engages in physical activity at a recommended level?

☐ YES

☒ NO

20. Patient T is 54 years old, did not experience a decline in his physical functioning (changing soma), but experiences moderate to severe HF symptoms.

After considering the qualitative evidence, do you think Patient T engages in physical activity at a recommended level?

☐ YES

☒ NO

21. Patient U is 76 years old, did not experience a decline in his physical functioning (changing soma), and does not show any HF symptoms.

After considering the qualitative evidence, do you think Patient U engages in physical activity at a recommended level?

☒ YES

☐ NO

22. Patient V is 76 years old, did not experience a decline in his physical functioning (changing soma), but experiences moderate to severe HF symptoms.

After considering the qualitative evidence, do you think Patient V engages in physical activity at a recommended level?

☐ YES

☒ NO

23. Patient W is 54 years old, his functioning and somatic state declined in the past few years, but he does not show any HF symptoms.

After considering the qualitative evidence, do you think Patient W engages in physical activity at a recommended level?

☒ YES

☐ NO

24. Patient X is 76 years old, his functioning and somatic state declined in the past few years, but he does not show any HF symptoms.

After considering the qualitative evidence, do you think Patient X engages in physical activity at a recommended level?

☐ YES

☒ NO

Bibliography

1. Roberts KA, Dixon-Woods M, Fitzpatrick R, Abrams KR, Jones DR. Factors affecting uptake of childhood immunisation: a Bayesian synthesis of qualitative and quantitative evidence. *Lancet*. 2002 Nov 16;360(9345):1596–9.
2. Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implement Sci*. 2012 Apr 24;7:37.
3. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007 Dec;19(6):349–57.
4. American Psychological Association. *APA Dictionary of Psychology*. American Psychological Association, editor. Washington, DC: American Psychological Association; 2007.
5. National Institute for Health, Excellence C. Chronic HF: the management of adults with chronic HF in primary and secondary care (partial update). (Clinical guideline 108). *Annals of internal medicine*; 2011.
6. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP, et al. Strengthening of Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *BMJ*. 2007 Oct 20;335(7624):806–8.
7. Viechtbauer W. Conducting Meta-Analyses in R with the metafor Package. *J Stat Softw*. 2010;36(3).
8. Spiegelhalter DJ, Abrams KR, Myles JP. *Bayesian Approaches to Clinical Trials and Health-Care Evaluation*. Chichester, UK: John Wiley & Sons, Ltd; 2003.