

# Fidelity of very brief interventions for physical activity in primary care: VBI Pilot Trial

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on behalf of the Very Brief Interventions Team



# Background

- In the UK, physical inactivity is the 4<sup>th</sup> greatest risk factor contributing to total burden of disease<sup>1</sup>
- In England, only 6% of men and 4% of women meet physical activity (PA) recommendations when assessed objectively<sup>2</sup>
- Very brief interventions (VBIs, 5 mins max) in primary care could reach many adults and improve public health
- However, uncertainty about:
  - effectiveness and cost (Sally Pears presentation)
  - whether health practitioners can deliver VBIs as planned

<sup>1</sup> Murray et al, The Lancet 2013; <sup>2</sup> Health Survey for England 2008

# VBI Pilot Trial

- Preceded by development work and feasibility testing of four VBIs<sup>1</sup>
- Pilot trial<sup>2</sup> evaluated three promising VBIs to select best-performing VBI for the main trial<sup>3</sup>
- VBIs delivered as part of preventative health checks in primary care targeting adults aged 40-74 years



Helping you prevent heart disease, stroke,  
diabetes, kidney disease and dementia

<sup>1</sup> Pears et al, BMC Public Health 2015; <sup>2</sup> Pears et al, under review;  
ISRCTN02863077; <sup>3</sup> ISRCTN72691150

# VBI Pilot Trial

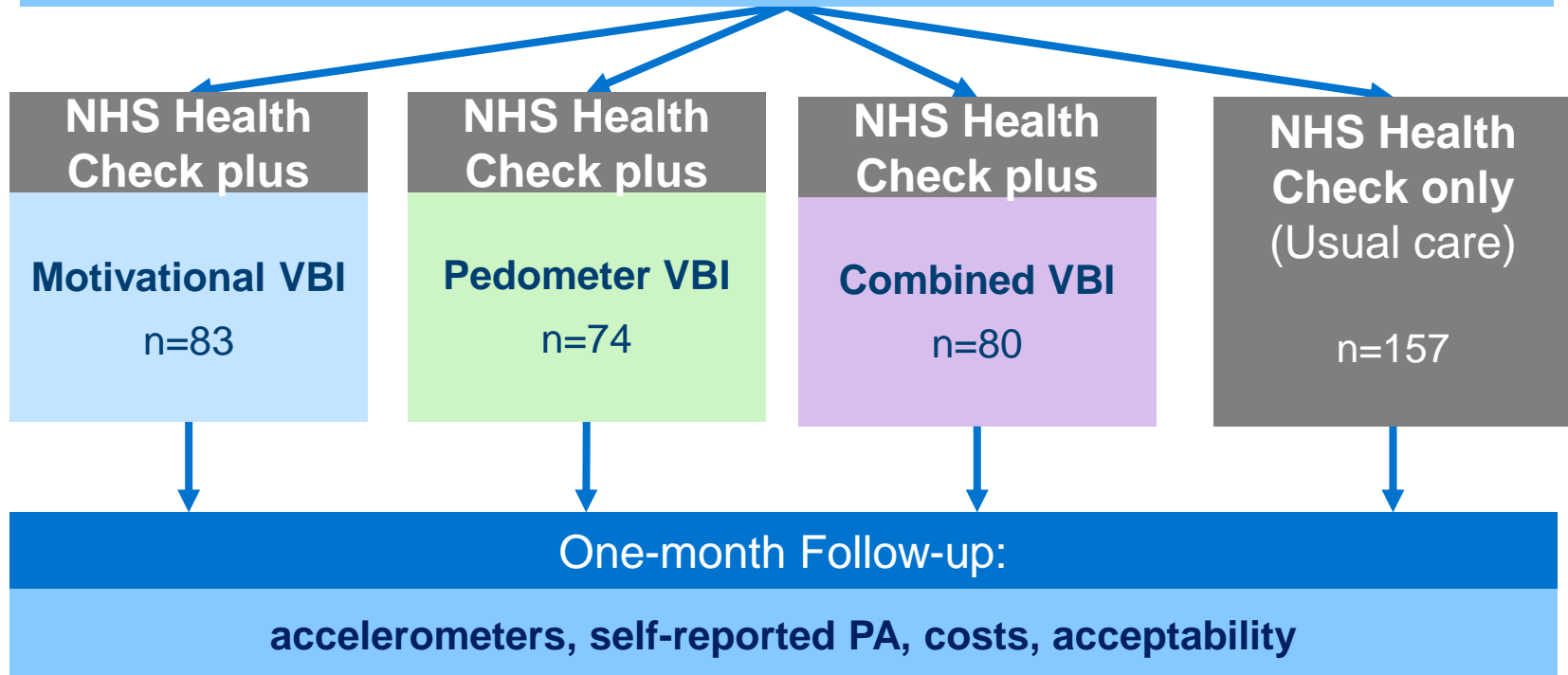
- Delivered by practice nurses and health care assistants following three hours of VBI training
- Fidelity was assessed using audio-recordings and interviews, alongside potential efficacy, cost and acceptability



# Pilot trial design

Adults eligible to attend preventative health checks in  
8 primary care practices

N=394; age (mean, SD) = 53 (9.1) years; 59% female



# Very Brief Interventions (VBI)

## All VBIs: face to face discussion

- Feedback on current physical activity (PA)
- Physical activity recommendations

### Motivational VBI

#### Face-to-Face Discussion

- Benefits of increasing PA
- Importance and confidence
- Making a plan and keeping a diary

#### Motivational Booklet

- PA recommendations
- Benefits of increasing PA
- Importance and confidence
- Making a plan & keeping a diary
- Tips for increasing PA
- Tips for staying motivated
- Signposting

### Pedometer VBI

#### Face-to-Face Discussion

- 10,000 steps recommendation
- How to use the pedometer
- Daily step goal and self-monitoring

#### Pedometer Booklet and Step Chart

- PA recommendations
- 10,000 steps recommendation
- How to use the pedometer
- Daily step goal and self-monitoring
- Tips for increasing steps

### Combined VBI

#### Face-to-Face Discussion

- Combination of Motivational and Pedometer VBIs

#### Motivational Booklet and Step Chart

- Combination of Motivation and Pedometer VBIs

# Very Brief Interventions: BCTs

## All VBIs: face to face discussion

1.1 Goal setting (behaviour) 1.4 Action Planning 2.2 Feedback on behaviour

### Motivational VBI

#### Face-to-Face Discussion

*Behaviour: PA*

- 1.1 Goal setting (behaviour)
- 1.4 Action Planning

#### Motivational Booklet

*Behaviour: PA*

- 1.1 Goal setting (behaviour)
- 1.2 Problem solving
- 1.4 Action Planning
- 1.5 Review behaviour goal(s)
- 2.3 Self-monitoring of behaviour
- 3.1 Social support (unspecified)
- 5.1 Information about health consequences
- 5.3 Information about social and environmental consequences
- 5.4 Monitoring of emotional consequences
- 5.6 Information about emotional consequences
- 15.4 Self-talk

### Pedometer VBI

#### Face-to-Face Discussion

*Behaviour: PA*

- 1.1 Goal setting (behaviour)
  - 1.4 Action Planning
  - 2.3 Self-monitoring of behaviour
  - 8.7 Graded tasks
  - 12.5 Adding objects to the environment
- Behaviour: using the pedometer*
- 4.1 Instruction on how to perform the behaviour

#### Pedometer Booklet and Step Chart

*Behaviour: PA*

- 1.1 Goal setting (behaviour)
  - 1.4 Action Planning
  - 2.3 Self-monitoring of behaviour
- Behaviour: using the pedometer*
- 4.1 Instruction on how to perform the behaviour

### Combined VBI

#### Face-to-Face Discussion

*Behaviour: PA*

- 1.1 Goal setting (behaviour)
  - 1.4 Action Planning
  - 2.3 Self-monitoring of behaviour
  - 8.7 Graded tasks
  - 12.5 Adding objects to the environment
- Behaviour: pedometer use*
- 4.1 Instruction on how to perform the behaviour

#### Motivational Booklet and Step Chart

*Behaviour: PA*

- 1.1 Goal setting (behaviour)
  - 1.2 Problem solving
  - 1.4 Action Planning
  - 1.5 Review behaviour goal(s)
  - 2.3 Self-monitoring of behaviour
  - 3.1 Social support (unspecified)
  - 5.1 Information about health consequences
  - 5.3 Information about social and environmental consequences
  - 5.4 Monitoring of emotional consequences
  - 5.6 Information about emotional consequences
  - 15.4 Self-talk
- Behaviour: using the pedometer*
- 4.1 Instruction on how to perform the behaviour

# Fidelity assessment: audio-recordings

- Two participants per VBI per practice asked for consent to audio-record health check consultation (n=51)
- Two researchers independently assessed recordings, using a coding frame:
  - VBI duration (mins, sec)
  - Presence (coded as 1) or absence (coded as 0) of VBI components
  - Contamination
- Calculation of:
  - Mean proportion of specific VBI components delivered
  - Mean proportion of all VBI components delivered
  - Mean VBI duration



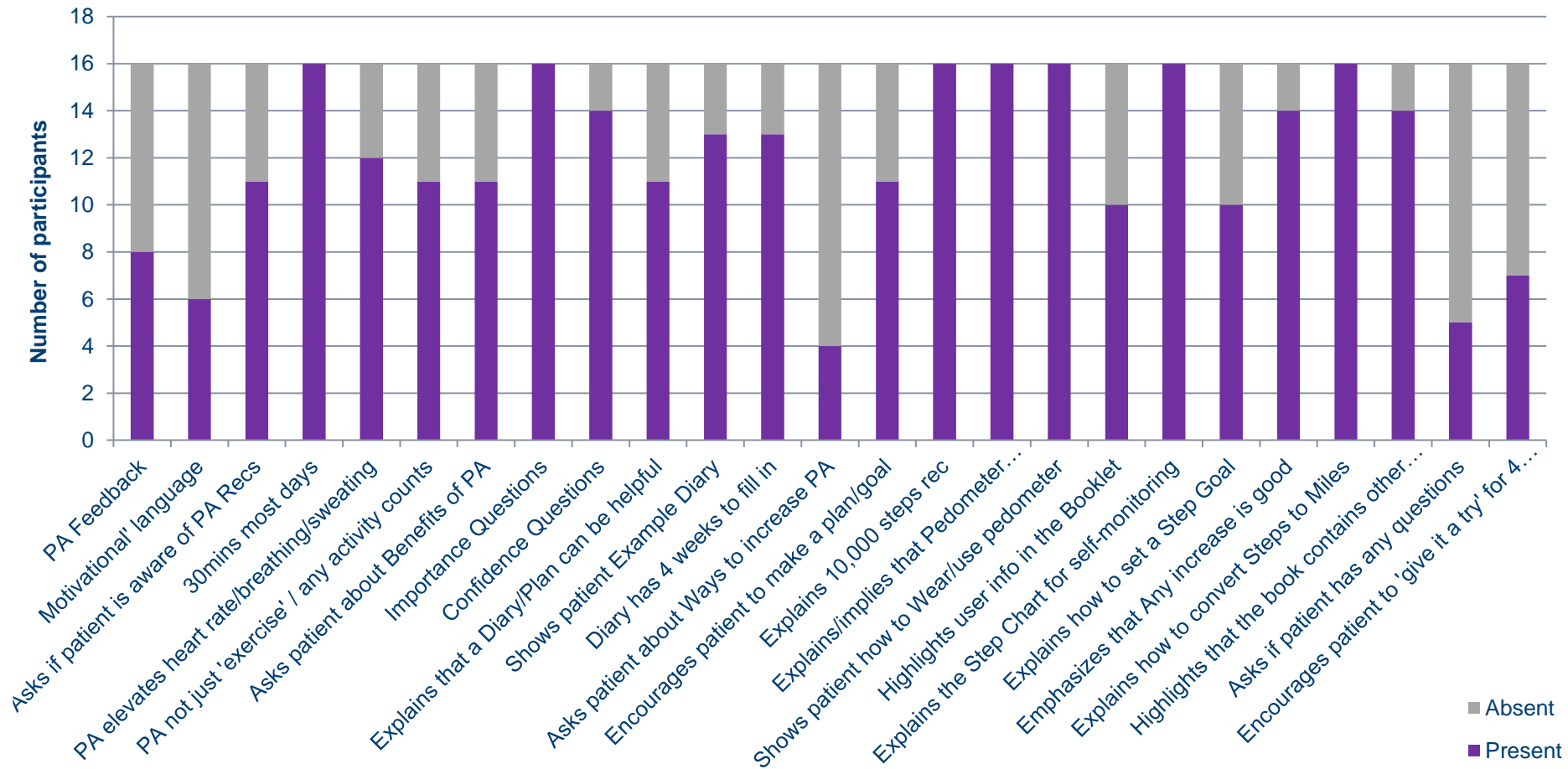
# Fidelity assessment: Interviews

- Interviews with 12 practitioners
- Short interviews with 37/51 participants
- Interviews were transcribed
- Researcher conducted simple content analysis of
  - Practitioner views about delivery
  - Participant views about VBIs

# Findings: Audio-recordings

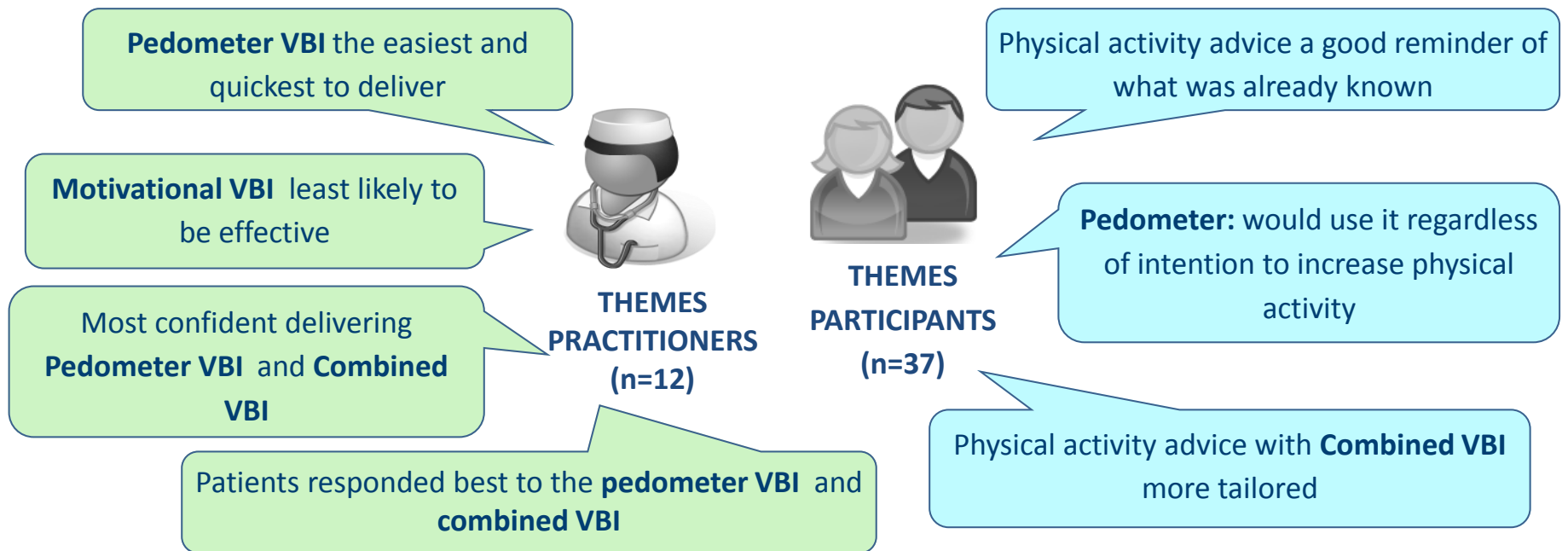
<i>Minimal contamination</i>	Motivational VBI (n=11) Mean	Pedometer VBI (n=13) Mean	Combined VBI (n=16) Mean
<b>PA Feedback</b> (range 0 – 2)	0.8	0.8	0.9
<b>PA Recommendations</b> (range 0 – 4)	2.8	2.7	3.1
<b>Motivational</b> (range 0 – 8)	5.1	-	5.8
<b>Pedometer</b> (range 0 – 8)	-	7.0	7.1
<b>Ending session</b> (range 0 – 3)	1.8	1.8	1.6
<b>Overall Fidelity</b> Mean /max possible score Proportion delivered (%)	10.5 /17 62%	12.2 /17 72%	18.6 /25 74%
<b>VBI Duration</b> (mins, sec)	6m 48s	5m 00s	9m 35s

# Example: combined VBI (n=16)



# Findings: Interviews

- Practitioners preferred pedometer VBI: brevity, ease of delivery and perceived participant response
- Participants found all VBIs acceptable



# Conclusions

- Practitioners delivered the VBIs with moderate to good fidelity
- Components least faithfully delivered were feedback on PA, motivational components and prompting goal setting and pedometer use
- Practitioners preferred pedometer VBI due to ease of delivery and 5-minute duration
- Participants responded positively to all VBIs

# Discussion

Factors that may have influenced fidelity of delivery<sup>1</sup>:

- practitioner training
- inclusion in participant booklet
- familiarity with PA recommendations
- competence in giving feedback to inactive patients
- practitioners' own physical activity levels

<sup>1</sup> Campbell et al 2012 <https://www.nice.org.uk/guidance/ph44/chapter/about-this-guidance>

# Recommendations

- Fidelity assessment in larger samples
- Assessment of practitioners' BCT use in VBIs
- Methodological research: reliable and valid tools, weighing fidelity items, practical challenges
- Clinical practice:
  - feasible to train practitioners in evidence-based BCTs
  - improve training in goal setting, giving feedback, and motivational techniques<sup>1</sup>

# Thank you!

This presentation presents independent research funded by the National Institute for Health Research (NIHR) under its Programme Grants for Applied Research Programme (Grant Reference Number RP-PG-0608-10079). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health.

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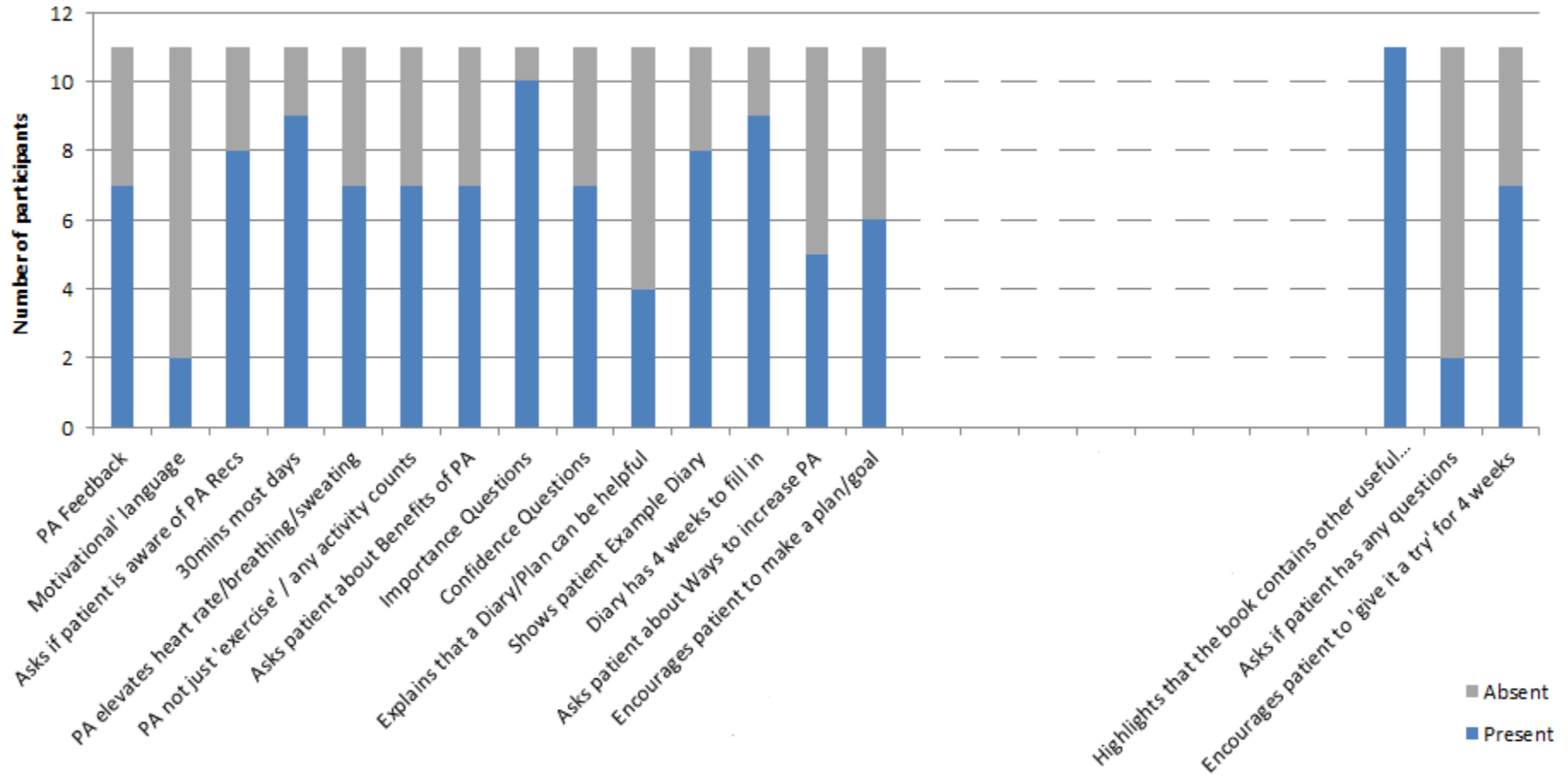


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# Fidelity Coding Frame

2. Individualised Physical Activity Assessment				3. PA Recommendations					
2.1	2.2	2.3	2.4		3.1	3.2	3.3	3.4	3.5
Nurse asks updated HC Template questions about PA (i.e. questions about type of work, exercise, walking, gardening etc.)	Nurse informs patient of their PAA status (e.g. could increase activity / doing plenty already)	Patient PAA status (according to what the nurse tells the patient)	Nurse uses 'gentle' language to inform patients of PAA status (e.g. could benefit from increasing activity')		Nurse asks if patient is aware of the recommendations	Patient IS aware of recommendations (i.e. they state the recs as 30mins/day)	Nurse says that the recommendation is 30 mins a day, most days of the week	Nurse says that any activity that elevates heart rate/ breathing/ sweat counts as activity	Nurse says that activity is not just 'exercise' / every day activities count
Yes = 1 No = 0 Unsure = 9	Yes = 1 No = 0 Unclear = 2 Unsure = 9	Underactive = 0 Active = 1 Unclear = 2 Unsure = 9	No = 0 Yes if Underactive = 1 Yes if Active = 2 Unsure = 9		Yes = 1 No = 0 Unsure = 9	Yes = 1 No = 0 Unsure = 9 (if patient asks 'is it 30mins most days' etc. count as 'yes')	Yes = 1 No = 0 Unsure = 9	Yes = 1 No = 0 Unsure = 9 (if nurse says 'yes that's right' rather than explicitly stating then	Yes = 1 No = 0 Unsure = 9

# Motivational VBI (n=11)



# Pedometer VBI (n=13)

