A systematic review of intervention studies using Health Action Process Approach (HAPA) model components: effects on weight loss

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Introduction
The HAPA model¹ (Fig 1) and HAPA-like approaches including multiple motivational and volitional components to support behaviour change are increasingly applied in intervention studies.

Review questions
This review:
1. Describes how HAPA-based approaches have been used to design and evaluate interventions to change behaviours for preventing or managing chronic disease;
2. Examines their effectiveness, with analyses here focussing on weight-related outcomes.

Inclusion criteria
Type: Full publication in English >1992
Population: Adults (16+)
Intervention:
• Development / design or evaluation is:
  HAPA-based: mentions/ref. HAPA as basis OR
  HAPA-like: as per Fig 1 includes self-efficacy plus 4 of 6 other defined HAPA components, at least 1 motivational (1-3) and 1 volitional (4-6).
• Targets on-going (not once off) behaviour.
And for this analysis focussing on weight loss:
Intervention: Targets physical activity AND diet to promote weight loss.
Comparator: Usual care/minimal intervention
Outcome: Comparative data on weight.
Study design: Controlled trial.

Methods
Relevant studies identified through bibliographic database and citation searching, author contacts and reference lists were selected, categorised and synthesised as per our protocol:
http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD4201303596

Fig 1 Health Action Process Approach Model¹

Fig 2 Studies selected for inclusion and analysis

5987 records identified from searches
5318 excluded after title/abstract screening, duplicates removed
668 abstracts reviewed
58 disagreements/unclear to 3rd reviewer
448 full texts reviewed
36 agreed inclusions
42 additional inclusions
47 further papers from reference lists
352 agreed exclusions
16 additional exclusions
80 papers for 67 studies included for study categorisation
11 observer studies, 2 studies with HAPA in evaluation only excluded
13 exclusions: weight not key target (6), no control group (4), BMI data only (2), inadequate data (1)

Fig 3 Countries in which trials conducted (n=54)

Fig 4 Behaviour targets & outcomes in trials (n=54)

Fig 5 HAPA components in trials (n=54)

Characteristics of weight loss trials (n=7)
• Though interventions were HAPA-like none directly referenced the HAPA model.
• None included all 6 HAPA components but all but 1 included 5 components.
• As well as self-efficacy, all included outcome expectancies, intention formation (e.g. goal setting), action planning and other self-regulation strategies (e.g. self-monitoring), and all but one included coping planning. None addressed risk perceptions.
• 2 focussed on chronic disease management (1 diabetes, 1 various), others prevention in at-risk.
• 4 studies involved group sessions, 3 individual contacts and 3 web-based delivery (3 mixed), most with initial weekly contacts, then follow up contacts for between up to 2 and 18 months.
• Follow up ranged from 6m to 36m.
• Risk of bias was highest in relation to allocation concealment and incomplete outcome data, with no suggestions of selective outcome reporting.

Fig 6 Effects on weight loss up to 6m & 12m (n=7)

Conclusions
• Of the growing number of trials of HAPA-based and HAPA-like interventions identified, most targeted physical activity, diet and weight loss.
• HAPA-like interventions resulted in statistically and clinically significant weight loss of 3.15kg up to 6m (p<0.001) and 2.63kg at 12m (p=0.02).
• Despite including many previously identified effective techniques and targets for weight loss interventions² this is comparable to typical weight loss reported in a previous review of reviews³, and resulting from commercial programmes⁴.
• Significant heterogeneity across studies is being further explored and analyses of other outcomes (e.g. physical activity) in this review is ongoing.

References
3. Olivier et al. BMC Public Health 2011; 11:110

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