| Supplementary Table. Description of studies and example strategies to increase socio-cultural relevance. |
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| **Study design overview**  |  | **Example strategies to increase socio-cultural relevance a** |
| **SHED-IT (18, 22, 23)***Pilot RCT (N = 65 overweight/obese university staff/students)*Study arms:1. Online group: One group face-to-face information session plus program handbook, study website to self-monitor and personalized e-feedback.
2. Resources-only group: Information session and program handbook only.

*Community RCT (N = 159 overweight/obese community men)*Study arms:1. Online group: Self-directed weight loss pack (handbook, log book, DVD, pedometer). Website for self-monitoring plus personalized e-feedback.
2. Resources group: As above, but paper-based self-monitoring. No feedback provided.
3. Wait-list control group
 | *Recruitment:** Emphasized the program was developed specifically for men (6, 24)
* Promoted opportunity to lose weight without having to give up beer (6, 24)
* Highlight scientific credibility of the program (6, 29)

*Content*:* Resources included pictures of men and statistics about men (28)
* Emphasized scientific basis for recommendations (6, 29)
* Sensitive use of humor and a direct frank and realistic approach (24, 29)
* Information ‘masculinized’ using anecdotes men could relate to (28)

*Format:** Predominantly self-administered to appeal to men’s sense of autonomy and self-sufficiency (2)

*Facilitator:** Information session (pilot) and DVD (community) delivered by male chief investigator with expertise in men’s health and teaching qualifications (20).

*Pedagogy*:* DVD presenter lived a ‘day in the life’ with a middle aged, overweight man (relatable model) and provided him with strategies to avoid common weight loss pitfalls (i.e., narrative technique) (8).
 |
| **HDHK (19, 21)***Pilot RCT (N = 53 overweight/obese fathers and their children)*Study arms:1. Intervention: Fathers attended eight 90-minute face-to-face group sessions (three with their children) and received program resources (e.g., booklets, pedometers).
2. Wait-list control group

*Community RCT (N = 93 overweight/obese fathers and their children)*Study arms:1. Intervention: As above, but fathers attended seven sessions (three with their children).
2. Wait-list control group
 | *Recruitment:* * ‘Father-only’ focus (6, 24) and targeted paternal motivators (e.g. spend quality time with children, improve their self-esteem, engage in fun, rough-and-tumble play activities) (7).

*Content*:* Use of ‘reciprocal reinforcement’ (i.e., fathers and children independently encouraged to motivate and model health behaviors for the benefit of the other).
* Messages targeted valued paternal outcomes (e.g., child social-emotional benefits, bonding time).
* Fathers and children taught enjoyable and physically active games that aligned with the typical masculine interaction style of fathers (7).

*Format:** Most group sessions were for fathers (and their children) only.
* Number of father-child interactive nights increased in response to participant feedback.

*Facilitator:** Males with expertise in men’s health (pilot RCT) and male PE teachers (community RCT).

*Pedagogy*:* ‘Built-in’ opportunities for facilitator to share their own stories (narrative), to engage participants in interactive discussion and activities (substantive communication) (8).
* Facilitators role play common child responses to parenting efforts to engage fathers in real life examples, some of which may connect deeply with their own life experiences (8).
* Use of humor and relevant, informative and persuasive examples and motivators for behavior change discussed
 |
| **NEAT Girls (5, 14, 16)***Pilot RCT (N = 124 adolescents)*Study arms:1. Intervention: Ten enhanced school sport sessions, one researcher-led seminar, pedometers, handbooks and weekly emails. Parents received six newsletters.
2. Control: Minimal school sport intervention.

*Cluster RCT (N = 357 low-active adolescent girls attending schools in low-income communities).*Study arms:1. Intervention: One day professional learning workshop for teachers and fitness equipment for schools. Girls received 40 enhanced school sport sessions, three researcher-led seminars, three nutrition workshops, 30 lunch-time activity mentoring sessions, pedometers and motivational texts. Parents received four newsletters.
2. Wait-list control: Usual PE and school sport program.
 | *Recruitment*: Focus on enjoyable lifelong physical activities (e.g., yoga) in a female-only environment (1, 10, 17, 25).No cost to students (15). *Content:*Focus on mastery rather than competition (3).Student selection of music during sport sessions (27).*Format:*Delivered at schools (no cost for transport) (15).Text messaging to encourage activity and healthy eating (32).*Facilitator:** Delivered by female teachers (4).
* Professional learning for teachers regarding desired program delivery.

*Pedagogy** Focus on student-directed opportunities for peer leadership.
* Seminars included interactive learning activities (e.g., interactive quiz).
 |
| **ATLAS (13, 30)***Pilot RCT (N = 100 adolescent boys attending schools in low-income communities)*Study arms:1. Intervention: Boys participated in 3 x researcher-led seminars, 10 x enhanced school sport sessions, 8 x lunch-time physical activity sessions, 6 x leadership sessions and were provided with handbooks and pedometers for self-monitoring.
2. Wait list control: Usual PE and school sport program.

*Cluster RCT (N = 353 low-active adolescent boys attending schools in low-income communities)*Study arms:1. Intervention: School received professional learning for teachers and fitness equipment. Boys received 3 x researcher-led seminars, 20 x enhanced sport sessions, 6 x lunch activity mentoring sessions, pedometers, smartphone app and website. Parents received 4 x newsletters.
2. Wait-list control group: Usual PE and school sport program.
 | *Recruitment:*Focus on developing strength and fitness in a male-only environment (9, 12, 31). No cost to students (15). *Content:*Focus on autonomy and personal mastery but included co-operative and competitive games. Student selection of music during sport sessions.Focus on resistance training to improve strength.*Format:*Delivered at schools (no cost for transport) (15).Smartphone app/website developed. Motivational SMS messages using colloquial language (26) ‘CrossFit’-style workouts named after video games, superheroes and males athletes (28)*Facilitator:** Delivered by male teachers (4).
* Professional learning for teachers and accredited professional learning hours.
* First sport session in each school modelled by a member of research team.

*Pedagogy** Promotion of autonomy-supportive teaching strategies and opportunities for peer leadership (11).
* Professional learning informed teachers of ‘SAAFE’ teaching principles used to guide the delivery of the program (Supportive, Active, Autonomous, Fair, and Enjoyable).
* Researcher-led seminars included engaging learning opportunities (e.g., interactive polling).
* Observations of sport sessions to support teachers and provide feedback.
 |
| RCT, randomized controlled trial; PE, physical education.a Example strategies provided that were based on insights obtained through pilot work, focus groups, interviews, process evaluations, observations, personal researcher reflections and examination of existing literature. |

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