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Young Men's Preferences for Design and Delivery of Physical Activity and Nutrition Interventions: A Mixed-Methods Study

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Abstract

Young adult men are under-represented in health research, and little is known about how to reach and engage them in lifestyle interventions. This mixed-methods study aimed to explore young males' preferences for recruitment strategies, content, format (delivery mode and program duration and frequency), and facilitator characteristics for future physical activity and nutrition interventions. Ten focus groups involving 61 men (aged 18–25 years) in the Hunter region, New South Wales, Australia and an online survey distributed within Australia were completed by 282 males (aged 18–25 years). Key focus group themes included a preference for recruitment via multiple sources, ensuring images and recruiters were relatable; intervention facilitators to be engaging and refrain from discussing negative consequences of being unhealthy. Key program content preferences included skill development and individualized goals and feedback. Focus groups and the survey confirmed a preference for multiple delivery modes, including; face-to-face (group and individual), with support using eHealth technologies. Survey results confirmed the most favored program content as: "healthy eating on a budget," "quick and easy meals," and "resistance training." Focus group responses suggested a program duration of ≥6 months, with 2–3 combined face-to-face and supportive eHealth sessions per week. Survey intervention duration preference was 3 months with 4 face-to-face sessions per month. Findings can guide the design, conduct, and evaluation of relevant contemporary physical activity and or nutrition interventions for young men. There is a need to identify the most effective ways to address young men's individual preferences in intervention research.

Keywords

nutrition, general health and wellness, physical activity, young men

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Young adult men (aged 18–25 years) from developed countries commonly fail to meet recommended guidelines for physical activity (PA) and dietary behaviors (Hall, Moore, Harper, & Lynch, 2009; Hallal et al., 2012). During young adulthood poor diet and physical inactivity can contribute toward immediate health risks such as weight gain (Racette, Deusinger, Strube, Highstein, & Deusinger, 2008) and adverse psychosocial issues (Borojevic, 2016). Poor diet and inactivity in young adulthood frequently persist into middle-age and older adulthood (Spring et al., 2014), influencing risk of chronic disease in later life including cardiovascular disease, hypertension, and type 2 diabetes (Liu et al., 2012; Parker, Schmitz, Jacobs, Dengel, & Schreiner, 2007; Pereira et al., 2005). As a result, young adulthood is a pivotal time period to establish individual health promoting behaviors (Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2008). By contrast, young men have been under-represented in nutrition and PA interventions (Ashton, Hutchesson, Rollo, Morgan, & Collins, 2014; Ashton, Morgan, et al., 2015), attributed in part to problems

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associated with reach, engagement and retention (Ashton et al., 2014; Ashton, Morgan, et al., 2015). Therefore, limited evidence exists to guide development of effective nutrition and PA interventions targeting this population segment.

The challenge is to develop interventions for young men that are appealing, engaging, effective, and sustainable. However, a number of difficulties have been suggested regarding reaching and engaging this population group. These include a perceived irrelevance given current life-stage (Bost, 2005), competing time demands which take priority (i.e., study, work, socializing, relationships) (Moe, Lytle, Nanney, Linde, & Laska, 2016), and previous studies' failure to account for the sociocultural values and preferences of young men in informing recruitment strategies and developing intervention components (Morgan, Young, Smith, & Lubans, 2016). Furthermore, early work has suggested that men who demonstrate key masculine ideals such as strength, feelings of invincibility, courage, independence, physical risk, and toughness limit their help-seeking behaviors, which provides further justification as to why young men are classified as "hard-to-reach" (Connell & Messerschmidt, 2005; Robertson & Baker, 2016). Obtaining an understanding of young men's preferences can inform development, implementation, and translation of targeted lifestyle interventions. It has been acknowledged that aligning intervention approaches with the needs and interests of the target group can contribute to successful health behavior change programs (King et al., 2005; Klem, Viteri, & Wing, 2000).

Research examining intervention preferences for nutrition and PA interventions is scarce in men, particularly in young men. The majority of research to date has focused on preferences for PA intervention delivery mode (Booth, Bauman, Owen, & Gore, 1997; Daley et al., 2011; Forbes, Plotnikoff, Courneya, & Boulé, 2010; Jones & Courneya, 2002; Short, Vandelanotte, & Duncan, 2014). However, these have predominantly been conducted in post-menopausal women (Daley et al., 2011), among chronic disease groups (Forbes et al., 2010; Jones & Courneya, 2002) and in the general population (Booth et al., 1997; Short et al., 2014). Generally, results demonstrate preferences for face-to-face delivery (both individualized and group based) over mediated approaches such as online, telephone, and print-based interventions. Two studies exploring the general populations' delivery mode preferences (Booth et al., 1997; Short et al., 2014) stratified responses by demographic characteristics and highlighted key differences by specific target groups. Booth et al. reported a preference for group-based support among women and young people, while individualized face-to-face support was favored among men and older people (Booth et al., 1997). Short et al. found men preferred mediated (print and online) interventions more than women (Short et al., 2014). None of these studies specifically explored preferences by young adult men, yet the heterogeneity in psychological, social, and physical differences between sexes and age groups (Oliffe & Greaves, 2012) suggests that young men's preferences may be different to other population groups, which may explain the under-representation of young men within health-related research (Ashton et al., 2014; Ashton, Morgan, et al., 2015). Program reach and impact may be improved if intervention preferences can be matched to the target population (King et al., 2005; Klem et al., 2000). Hence, this study aims to explore young men's preferences for recruitment strategies, content, format, and facilitator characteristics in nutrition and PA interventions.

Methods

The aim was framed around a conceptual model to guide a targeted approach to the design and delivery of health behavior interventions (Morgan et al., 2016). A mixed-methods design was used to explore specific preferences for nutrition and PA interventions among young men aged 18–25 years. Qualitative data were first obtained through focus groups conducted in a sample of Australian young men from the Hunter region, New South Wales. Secondly, quantitative data were captured via an online survey distributed within Australia. Ethics approval was obtained from the University of Newcastle Human Research Ethics Committee (H-2013-0344). Written informed consent was obtained from all subjects.

Focus Group Development, Design, and Sampling

Focus group questions were generated using an evidence-based conceptual model to guide a sociocultural targeted approach to intervention design and delivery (Morgan et al., 2016). The model proposes that recruitment, engagement, and outcome effects of interventions are optimized when the needs and preferences of the target population are incorporated across core program components of content, format, and facilitator characteristics. Therefore, focus group questions focused on these main model constructs.

Australian men aged 18–25 years were recruited via flyers distributed around the University of Newcastle and local technical colleges, with advertisements posted on their respective website and social media pages. A media release (newspaper, local radio) was also carried out to target young males in the local community. Focus groups were conducted in a private venue at the university or technical college. Consenting participants received a $25 gift voucher to cover time and travel costs.

Focus Group Data Collection

Ten focus groups were conducted by a male PhD student (aged 25 years). An assistant moderator (male, aged 27 years) attended all sessions to provide assistance with recording. Each focus group included 3 to 9 participants and lasted between 32 and 63 min, depending on group size. A total of 11 questions were asked but only the responses to 2 questions are included in this article. Responses to the other questions are published elsewhere (Ashton, Hutchesson, et al., 2015). Specifically, participants were asked: "If you were developing a healthy lifestyle program for guys your age, what would you include? And what would you not include?" Probes were used to clarify and explore the topic, including: *delivery method preferences? Program content preferences? Ideal program duration and frequency? Facilitator preferences?* And *ideal/appealing recruitment strategies?*

Demographic data were collected during the online eligibility screen prior to the focus group sessions and included date of birth, marital status, highest level of education, and income. Participants were asked to self-report their height (cm) and weight (kg), and body mass index (BMI) was calculated. Data saturation was achieved which was confirmed during data analysis.

Online Survey Development, Design, and Sampling

A cross-sectional online survey was developed using the focus group results and questions generated using a developmental model (Brancato et al., 2006) using five stages of questionnaire design and testing: (a) conceptualization, (b) design, (c) testing, (d) revision, and (e) data collection. Initial survey questions were pretested in 30 young men to ensure questions were clearly understood, length was appropriate and to assess test-retest reliability, with more detail provided elsewhere (Ashton, Hutchesson, Rollo, Morgan, & Collins, 2016). After testing and refinement, the final survey was then distributed to young men, with the survey design enabling broader reach to obtain responses from a larger more representative population sample.

The same inclusion criteria and recruitment strategies as the focus groups were applied, with the addition of flyers distributed via sports clubs and advertisements on the social media pages of a local newspaper and the Hunter Medical Research Institute. A specific media release generated state-wide radio interviews. In addition survey completers were asked to share the survey via e-mail and/or Facebook. Participants completing the survey entered a prize draw to win an iPad Mini or one of five gift vouchers valued at A$150 each. The survey was open from July 6, 2015 to September 27, 2015.

Online Survey Data Collection

The online survey was managed using Survey Monkey (www.surveymonkey.com.au). It included a total of 67 questions, with 13 reported in the current article, the responses to the other questions have been published elsewhere (Ashton et al., 2016). Participants were asked to indicate their delivery mode preference for various intervention components relating to healthy eating (*cooking lessons, healthy eating on a budget, adding variety to diet, portion size, food labels, quick & easy meals, alcohol education*) and PA (*resistance training, aerobic exercise, exercise for weight control, skill development*) with the option to select multiple responses if multiple delivery methods were preferred. All response options were informed from the focus group responses. Specifically, participants were asked: *if you were to participate in a healthy lifestyle program for young men, which delivery method would you prefer?* Response options included: (a) *in person, onsite in a one-on-one setting*, (b) *in person, onsite in a group setting*, (c) *video call* (*e.g., Skype, Google Hangouts*) *in a one-on-one setting*, (d) *video call* (*e.g., Skype, Google Hangouts) in a group setting*, (e) *website*, (f) *mobile apps*, and (g) *none* (*e.g., no preference for delivery of particular component*). Participants were also asked to report intervention length preference and frequency of face-to-face sessions preferred per month in open-ended questions. Demographic data were collected including: date of birth, country of birth, languages spoken at home, employment status, marital status, highest level of education and income.

Data Analysis

Basic descriptive statistics for both samples were computed using Stata version 12.0 software (StataCorp, College Station, TX). For the qualitative data, a computer program (NVIVO 10, QSR International, Melbourne, Australia) was used to assist with the organizational aspects of data analysis. Analysis was conducted by an independent qualitative researcher. Full detail of the analysis can be found elsewhere (Ashton, Hutchesson, et al., 2015). Briefly, a hybrid approach of inductive and deductive analysis was adopted (Fereday & Muir-Cochrane, 2008) allowing for an in-depth exploration of data-driven, as well as theory-driven concepts. Common themes were identified which were felt to capture the multifaceted views, experiences, and insights of participants. For the quantitative survey, frequency data for number of face-to-face sessions and length of program are presented as median—inter quartile range (IQR) scores. The remaining data are presented as the number and proportion of total participants that selected each option.

Results

Qualitative Focus Group

Sixty-one young men (20.8 ± 2.3 years) from the Hunter region, New South Wales, Australia participated in 10 focus groups (average 6.1 participants/group, range: 3–9). Of these, 35 (57.4%) were healthy weight and 26 (42.6%) overweight or obese. Participants were predominantly single ($n = 56$, 91.8%) with the high school certificate as the highest education level attained ($n = 40$, 65.6%). Approximately half were university students ($n = 32$, 52.5%), 22.9% ($n = 14$) were technical college students, 16.4% ($n = 10$) worked full time, 4.9% ($n = 3$) worked casually, and 3.3% ($n = 2$) unemployed. Most participants were in the lower income bracket ($n = 35$, 57.3% income A$0–$299/week). The most common themes expressed in regard to preferences for a healthy lifestyle program are presented in Table 1.

Recruitment Strategy Preferences. Frequently mentioned recruitment preferences included advertisements through social media, noticeboards (colleges and university), billboards, pubs, and via employers of young people. Many young men alluded to the need to promote the program on social media via potential participants and peers, not just program organizers. One said:

> "I think a lot of people our age are quite engaged in the social media space but whether there's any correlation between being engaged in that and then getting off the couch and doing something about it…there might be a bit of a gap there, so I think through your friend networks is probably a good way to go."

In addition, the importance of perceived program legitimacy in the recruitment materials (e.g., affiliation with University) was highlighted.

There were conflicting thoughts presented on whether online advertisements (via Facebook and YouTube advertisements) were suitable recruitment modes due to the amount and low quality of advertisements and subsequent suspicion of advertisers' motives. Many expressed that email recruitment would be ignored due to the large number of spam emails. Additionally, most expressed that the program should not be advertised as involving any radical lifestyle changes, for example one young man said: "Making you aware that you're not going to eat five things of lettuce for lunch every day for the rest of your life." It was considered important to avoid overly masculine or physically fit images or recruiters, as this would act as a deterrent. One young man said: "…I think there'd be a tendency to lean towards more, almost overtly an aggressively masculine images and things like that and that's probably best to be avoided. If I see a flyer and it's got like flexing men all over I wouldn't be interested."

Program Content Preferences. There was unanimity that content should focus on education and skill development for healthy eating and increasing PA levels. Examples included: provision of guidelines, food suggestions (recipes and shopping lists), cooking classes, and ideas/demonstration of correct workout techniques and routines. Many also viewed the necessity for a gradual build-up of fitness and strength, taking into account the different baseline capabilities within the group. Essential program components included: regular feedback, monitoring of progress, setting realistic and individualized goals, and positive reinforcement and encouragement. One young man said: "If you've got that supportive and encouraging environment around you then you're more likely to engage and participate in things."

Many suggested avoidance of too much intragroup competition and the sharing of one's progress. One young man said: "It could be dangerous though if you introduce too much competition because the people who aren't [into competition] then you know feel demotivated." It was regarded as highly important not to have unachievable goals. One young man stated: "Any strict goals so like you don't want to feel like you've failed or you're not making progress." Also, many articulated the need for the content to avoid drastic changes to lifestyle.

Format Preferences

(a) **Delivery mode:** Participants were in general agreement that program delivery had to be flexible. Face-to-face components combined with web-based technologies and mobile apps were considered essential. One young man said: "Yeah there's different things that work for different people so giving them the options that work for them but I think like they said, the face-to-face element is definitely a necessity." In addition, many suggested the need for the face-to-face sessions to be a mixture of both individualized and group based. Several highlighted that delivery over the telephone was not viable for this population group.

(b) **Program duration and frequency**: All agreed the program should be of sufficient duration to allow outcomes to be achieved. The majority felt that at least 6 months was a suitable time period, as one young man said: "At least 6 months and that also gives you time to get to know people, build friendships to the point where you can exchange numbers and you can talk to each other and say look "I'm going to the gym" *or* "I'm going to go and do this now do you want to come and join me." In terms of frequency of sessions, participants suggested around 2–3 sessions per week would be sufficient, including face-to-face sessions and online or "homework" components. Several highlighted

Table 1. Focus Group Responses Examining Young Men's (n = 61) Preferences for Nutrition, Physical Activity, and Healthy Lifestyle Intervention Components for All Participants.

	Themes	
	To include	To not include
Recruitment strategies	• Advertisement through social media, noticeboards (colleges and university), billboards on public transport, pubs and employers of young people • Promotion of program through potential participants and peers, (not just program organizers) via social media, e.g., share function on Facebook • Affiliation of a credible source (e.g., University)	• Overly masculine or physically fit and toned connotations (images or recruiters), as this would act as a deterrent • Advertised as making radical lifestyle changes • Uncertainties with recruitment via online advertisements (e.g., Facebook advertisements) due to the amount and low quality of advertisements and subsequent suspicion of the motive of advertisers • Recruitment via email due to large number of spam emails received
Content	• Education and skill development (e.g., cooking skills) • Gradual build-up of fitness and strength • Positive reinforcement and encouragement • Goals to be realistic, individualized and flexible • Regular individualized progress/ feedback is required	• Avoidance of intragroup competition. • Unachievable goals and drastic changes to lifestyle
Format ***Delivery mode***	• Multiple delivery modes: face-to-face combined with online technologies (e.g., website) and mobile apps • Face-to-face sessions to include both individual and group based sessions	• Over the telephone
Program duration & frequency	• At least 6 months of involvement • 2–3 sessions per week. This included face-to-face sessions and online or 'homework' component. • A flexible timetable allowing participants to choose from several options of which session to attend each week	• Avoid anything too short as program should be of sufficient duration to allow for a given outcome to be achieved, and for new habits to be formed and old habits broken
Facilitator	• Facilitators to make the program fun and interesting with lots of variety • Facilitators to present in positive light	• Unrealistic expectations set my facilitator • Avoid focusing on the negative consequences of being unhealthy (e.g., morbidity and or mortality)

the need for a flexible timetable with option to choose from different sessions each week.

Facilitator Preferences. Many felt that facilitators needed to make the program fun and interesting with lots of variety. For instance, one young man said: "I'd want it to be fun and interesting, like I wouldn't want to go on if it was boring." Several wanted the facilitators to present content positively and to not continually focus on the negatives, one said: "Yeah we don't want someone

Table 2. Survey Responses of Young Men's (n = 282) Delivery Mode Preferences by Nutrition Components.

	F2F (1-to-1)	F2F (group)	Video, e.g., skype (1-to-1)	Video, e.g., skype (group)	Website	Mobile apps	None#
Nutrition components							
Cooking lessons	26% (n = 74)	46.8% (n = 132)	2.1% (n = 6)	4.3% (n = 12)	51.4% (n = 145)	33.3% (n = 94)	6.7% (n = 19)
Healthy eating on a budget	24.8% (n = 70)	32.3% (n = 91)	5.3% (n = 15)	3.5% (n = 10)	61.0% (n = 172)	46.1% (n = 130)	4.3% (n = 12)
Adding variety to diet	19.5% (n = 55)	31.6% (n = 89)	4.3% (n = 12)	5.3% (n = 15)	61.0% (n = 172)	44.3% (n = 125)	6.4% (n = 18)
Portion size	17.4% (n = 49)	31.2% (n = 88)	2.8% (n = 8)	5.0% (n = 14)	53.9% (n = 152)	35.8% (n = 101)	12.7% (n = 36)
Food labels	14.5% (n = 41)	30.9% (n = 87)	3.9% (n = 11)	4.6% (n = 13)	51.4% (n = 145)	37.2% (n = 105)	17.0% (n = 48)
Quick & easy meals	23.4% (n = 66)	35.5% (n = 115)	3.9% (n = 11)	5.3% (n = 15)	60.6% (n = 171)	46.5% (n = 131)	4.3% (n = 12)
Alcohol	14.5% (n = 41)	27.3% (n = 77)	3.2% (n = 9)	4.6% (n = 13)	46.5% (n = 131)	25.9% (n = 73)	30.5% (n = 86)
Average for 7 nutrition components*	**20.1% (n = 57)**	**34.4% (n = 97)**	**3.6% (n = 10)**	**4.7% (n = 13)**	**55.1% (n = 155)**	**38.4% (n = 108)**	**11.7% (n = 33)**

Note. *>100% as multiple responses could be selected; #no preference for delivery of particular health-eating component. F2F = face-to-face.

Table 3. Survey Responses of Young Men's (n = 282) Delivery Mode Preferences by Physical Activity Components.

	F2F (1-to-1)	F2F (group)	Video (1-to-1)	Video (group)	Website	Mobile apps	None#
Physical activity components							
Resistance training	71.3% (n = 201)	37.2% (n = 105)	3.2% (n = 9)	2.5% (n = 7)	28.0% (n = 79)	25.9% (n = 73)	5.3% (n = 15)
Aerobic exercise	46.5% (n = 131)	52.8% (n = 149)	1.4% (n = 4)	1.4% (n = 4)	24.5% (n = 69)	20.9% (n = 59)	7.8% (n = 22)
Exercise for weight control	51.8% (n = 146)	40.4% (n = 114)	3.2% (n = 9)	2.8% (n = 8)	27.7% (n = 78)	24.1% (n = 68)	13.1% (n = 37)
Skill development	48.9% (n = 137)	60.3% (n = 170)	2.5% (n = 7)	2.1% (n = 6)	19.9% (n = 56)	13.5% (n = 38)	11.3% (n = 32)
Average for 4 PA components*	**54.6% (n = 154)**	**47.9% (n = 135)**	**2.5% (n = 7)**	**2.1% (n = 6)**	**30.1% (n = 85)**	**21.3% (n = 60)**	**9.6% (n = 27)**

Note. *>100% as multiple responses could be selected; #no preference for delivery of particular PA component. F2F = face-to-face.

who keeps saying you're going to die if you don't do this."

Quantitative Online Survey

A total of 419 people consented to participate, with 370 eligible (11 did not complete the eligibility screen, 6 were female, 25 were not aged between 18 and 25 years, 7 were not living in Australia) and 282 (76.2% of those eligible) completed the full survey and were included in the final analysis. Survey responders were young (22.3 ± 2.1 years) men, predominantly single (n = 227, 80.5%), and with the high school certificate as the highest education level attained (n = 156, 55.3%). Most were healthy weight (n = 165, 58.5%), with 39.0% (n = 110) overweight or obese. Over half were studying at university (n = 165, 58.5%), 28.1% (n = 79) in employment, and 7.4% (n = 21) unemployed. Most (n = 115, 42.6%) were in the middle income bracket (A$300–$999/week).

Format Preferences. The preferred delivery mode for nutrition and PA intervention components are summarized in Table 2 and Table 3. For the combined nutrition components, delivery via a website was most favored (n = 155, 55.1%), followed by mobile apps (n = 108, 38.4%) and face-to-face sessions in a group setting (n = 97, 34.4%). Delivery by website was most favored for all of the individual nutrition components. For the combined PA components, delivery via face-to-face sessions in a one-to-one setting was preferred (n = 154, 54.6%), followed by face-to-face sessions in a group setting (n = 135, 47.9%) and website (n = 85, 30.1%). For the individual components for PA, face-to-face sessions in a one-to-one setting was favored for resistance training (n = 201, 71.3%) and exercise for weight control (n = 146, 51.8%). While face-to-face sessions in a group setting was most preferred for aerobic exercise (n = 149, 52.8%) and skill development (n = 170, 60.3%), duration preference for a healthy lifestyle program was suggested as 3 months (IQR 2–4) with a median of 4 (IQR 2–4) face-to-face sessions per month.

Program Content Preferences. Content preferences for nutrition and PA were established based on the proportion of young men who selected "none" in Table 2 and Table 3, indicating no preference for delivery of that particular

component. For nutrition, most popular components were "healthy eating on a budget" and "quick and easy meals" as these had the lowest proportion of respondents selecting no preference for those particular components (both 4.3%, n = 12). The least favored was "alcohol education" as almost a third of participants (30.5%, n = 86) selected no preference for this topic, followed by "information on food labels" (17.0%, n = 48). For PA, the most preferred component was "resistance training" with only 5.3% (n = 15) selecting no preference for delivery of this topic, while "exercise for weight control" was least favored 11.3% (n = 32).

Discussion

This mixed-methods study is the first to examine young men's preferences for nutrition and PA interventions. Key themes included a requirement for *content* to focus on skill development, with emphasis on individualized goals and feedback. Survey responses confirmed "healthy eating on a budget," "quick and easy meals," and "resistance training" as most favored program components. There was a preference for engaging *facilitators* who vary sessions and refrain from discussing negative consequences of being unhealthy. It was considered important that *recruitment strategies* advertise through multiple sources while avoiding overly masculine or physically fit stereotypes. For *format*, both the focus groups and online survey confirmed a preference for multiple delivery modes, including: face-to-face sessions (both group and individual) and additional support from eHealth technologies (i.e., website). Discrepancies were evident between focus groups and survey responses for program duration and frequency with a preference for a longer program with regular contact expressed in the focus groups.

Delivery Mode Preferences

In comparison to other population groups (Booth et al., 1997; Daley et al., 2011; Forbes et al., 2010; Jones & Courneya, 2002; Short et al., 2014), our findings demonstrated a preference for nutrition and PA interventions in young men to involve a mix of both individual and group face-to-face sessions. However, the current study also established a need for additional support using eHealth technologies which was not evident in previous studies. The preference for multiple, simultaneous delivery modes in young men is likely to reflect key barriers common in this population group including "busy lifestyles" and "lack of time" (Ashton et al., 2016; Ashton, Hutchesson, et al., 2015). These barriers are associated with major life changes occurring during this life-stage, including starting and completing further education, beginning employment or unemployment, co-habiting with peers or a partner, getting married and/or becoming a parent (Mullen, Watson, Swift, & Black, 2007; Poobalan, Aucott, Precious, Crombie, & Smith, 2010). Multiple delivery modes would enable greater flexibility and variety to potentially achieve greater reach, engagement and retention, and thereby positive health behavior change. A recent systematic review of health behavior interventions in young men (Ashton, Morgan, et al., 2015) found none to be delivered using face-to-face with eHealth support. There is a need to explore the effectiveness and sustainability of interventions that are matched on these preferences.

The online survey confirmed that delivery mode preferences differed according to the health behavior, with delivery via website most favored for nutrition components and individualized face-to-face sessions for PA components. Currently, there is limited evidence on delivery mode preferences, but findings from the current study are consistent with those among middle-aged men who expressed support for use of the internet to improve dietary behaviors (Vandelanotte et al., 2013). Masculine ideologies, norms and gender roles may play a part in discouraging males from seeking nutrition help in a face-to-face environment. Traditionally, healthy eating and dieting may be deemed as "unmanly" (Gough, 2007; Levi, Chan, & Pence, 2006), therefore delivery online enables privacy, without perceived judgment from others. The current findings indicate young men's preference of face-to-face for PA is different to older age groups who expressed preferences for programs to be completed independently via website or print-based materials (Short et al., 2014). Young men's preferences for individualized face-to-face sessions for PA may be related to their content preference for resistance training which may be easier with face-to-face instruction, with this delivery mode for PA (i.e., delivery by personal trainer in a gym) appearing more appealing than other mediums (e.g., online delivery). The unique findings for young men support the conclusion by Short et al., who suggested that the design and implementation of PA programs need to be targeted for the specific population groups (Short et al., 2014).

The format of an intervention plays a critical role in both the recruitment and engagement of participants (Morgan et al., 2016). Although their preferences for delivery setting were not explored in the current study, this concept was highly regarded among males taking part in the Football Fans in Training program in the UK, who reported that the program setting (professional football stadiums) was the biggest drawcard for participation (Hunt et al., 2014).

Preferences for Content, Recruitment Strategies, and Facilitators

There is a paucity of evidence examining intervention preferences for content, facilitators, and recruitment strategies in any population. Regarding content preferences,

the qualitative findings indicated a need to focus on skill development with suggested recommendations including provision of guidelines, cooking classes, and exercise routines. This highlights that for many young men, basic skills required for healthy eating and PA have not been developed. This corroborates the importance of establishing healthy lifestyle skills and behaviors during this life-stage transition (Nelson et al., 2008).

Findings identified young men did not value intragroup competition. This is in contrast to the traditional research on masculinity which identified competitiveness as a key masculine ideal (Oliffe et al., 2010). Our findings support more recent work on masculinities which has suggested the traditional hegemonic masculinity may be decreasing due to changes in society, education, and employment. This is impacting young men constructing post-modern masculine identities which may have lost its masculine aura (Mullen et al., 2007). This also relates to other recent work in men who reported a preference of no competition, particularly for those who were unfamiliar, not engaged by, or "out of practice" with playing competitive sports (Pringle et al., 2013; Pringle et al., 2014). Rather than competition, programs could consider delivering graded activities with support for skill development, resistance training, and individualized goals and feedback.

Several behavior change techniques (BCTs) were suggested by young men that could be incorporated into the program content, including the need for positive reinforcement, encouragement, goal setting, and regular feedback. Including all of these BCTs into the intervention's content has the potential to positively influence several behavioral determinants including: skills, knowledge, motivation, beliefs about capabilities, and beliefs about consequences (Michie, Johnston, Francis, Hardeman, & Eccles, 2008) to assist young men in being more active and improving eating habits. Young men may consider these key BCTs to be useful as a "lack of motivation" was recognized as a major barrier to eating healthy and being physically active (Ashton et al., 2016). Also in a global study on self-esteem in over 325,000 individuals, it was identified that self-esteem was lowest in men aged 18–22 years when compared to all other age groups of men up until aged 70–79 years (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). This may explain why young men expressed a desire for encouragement and positive reinforcement in order to address this. Given that not all behavior change theories include all elements, an integrated theoretical approach may be appropriate for young men which has been proposed as the way forward in advancing physical activity research (Rhodes & Nigg, 2011). However, the challenge is to ensure that BCTs used within theoretical frameworks are socioculturally relevant for young men (Morgan et al., 2016). High quality trials in young men are required to determine which BCTs are most appropriate for young men in order to facilitate improvements in nutrition and PA behaviors.

Content preferences from the survey for "healthy eating on a budget" and "quick and easy meals" are likely to be in response to the aforementioned barriers in this population such as "busy lifestyles," "lack of time," and "financial restraints" (Ashton et al., 2016; Ashton, Hutchesson, et al., 2015). "Alcohol education" was least favored suggesting it is not perceived as problematic. However, national statistics indicate nearly 70% of young Australian men exceed maximum daily recommended alcohol intakes (Australian Bureau of Statistics, 2015). Sensitively educating young men using contexts such as focusing on alcohol's kilojoule content to assist with weight management, or informing them of negative impacts on sports performance, rather than providing alcohol guidelines or recommending prohibition may be more practical with this group. The content preference of "resistance training" for this group is likely to correspond with young men's desire to improve body image and increase strength as motivators for PA participation (Ashton et al., 2016; Ashton, Hutchesson, et al., 2015). This preference is likely to be unique to men given the aesthetic ideal of a lean, well-toned muscular physique in comparison to women who desire a thinner and fit physique (Bergeron & Tylka, 2007; Blashill, 2011; McCreary & Sasse, 2000).

There was a preference to avoid overly masculine or physically fit connotations for recruitment strategies as it may deter potential participants. Self-Determination Theory, indicates human motivation requires consideration of innate psychological needs for competence, autonomy, and relatedness (Deci & Ryan, 1985), and it is the construct of relatedness, which appears to be the driver behind this preference for recruitment strategies, that is, young men may relate more to someone who is similar to them. Specifically, the similarity-attraction hypothesis suggests that individuals express an implicit bias in favor of those who are similar to themselves (Byrne & Nelson, 1965). Therefore, recruiters and recruitment materials need to portray a man that fits the profile of the group of men that the researchers are intending to target. Young men's need for program legitimacy and trust (e.g., affiliation through University) on recruitment materials corroborates other research in men which identified this as important for men's participation in health research (Robinson & Robertson, 2014; Young, Morgan, Plotnikoff, Callister, & Collins, 2012). Although not discussed by young men in the current study, the connection with sports clubs has emerged as a gendered cultural field that has utility for reaching and engaging men in health initiatives (Robertson et al., 2013). Specifically

the Premier League for Health program in the UK showed promise for reaching UK young men through sports clubs as 2,134 of the 3,779 recruited were aged between 18 and 34 years. Therefore, the opportunity to connect with trusted community initiatives, including sports clubs and highlighting this in recruitment materials, may potentially elicit a greater response and engagement from young men to seek help and address limitations with recruiting this hard-to-reach group.

Facilitator characteristics can impact on program efficacy (Morgan et al., 2016). According to the Dispositional Cluster Model (Faull, 2009) the five main dispositions of an effective teacher/facilitator include (a) committed, (b) creative, (c) communicative, (d) authentic, and (e) passionate. Young men's preference for facilitators to ensure participation is fun and provides variety, while focusing on the positive aspects of health behavior, specifically relate to creative and passionate dispositions. Intervention facilitators who portray these characteristics may increase attention to and retention of the intervention messages, thereby enhancing health behavior change. Although young men did not acknowledge a preference for the other effective dispositions it is still important to not disregard these, as these traits in facilitators can enhance the quality of the program (Morgan et al., 2016). The facilitator preferences identified in the current study are comparable to key facilitator characteristics from successful health interventions in men which have emphasized the use of humor and camaraderie to create a fun, friendly, relaxed, and engaging atmosphere (Gray et al., 2013; Morgan, Warren, Lubans, Collins, & Callister, 2011).

Strengths and Limitations

Methodologically, the use of both quantitative and qualitative findings is a strength of the current study and enabled a broad range of views to be canvassed. The current study has extended current knowledge about young men's preferences for intervention components and delivery modes for nutrition and PA interventions. Limitations include the use of nonrandom sampling. It was more feasible to administer in this hard-to-reach population, but the lack of generalizability to all young men may introduce bias, as the sample may not be truly representative of this demographic across the whole population. There were also some discrepancies between responses from the focus groups and survey worth noting. For instance, compared to survey responders, focus group participants reported a preference for a longer program with regular contact and there was a greater preference for "skill development" to be included in program content. The differences in responses could be attributed to differences in the populations, owing to the sampling methods used. For example, those that completed the survey were found to be more affluent than those that participated in the focus groups. Given this, care should be taken when generalizing these results as they may not be completely representative (Ward, Bertrand, & Brown, 1991). In addition, differences in responses may be due to any issues that are new or unknown to the respondent and therefore they may not have a well-formulated attitude on the topic and may either (a) respond somewhat illogically to the questions in the survey, or (b) seek out the safety of what is perceived as the socially correct response in the focus group (Ward et al., 1991). Participation in the focus group is based on the ebb and flow of the conversation, therefore having multiple questions may be considered a limitation as the themes that arose might have occurred as a result of the other questions asked in the session. Despite this, we used the established Krueger and Casey's framework for "five categories of questions" (Krueger & Casey, 2009) to generate focus group questions, this included an opening question, introductory question, transition questions, key questions, and a concluding question. Furthermore, the online survey only confirmed findings for content and format (both delivery mode and program duration and frequency), not recruitment strategies and facilitator characteristics. There may also be a mismatch between perceived attitudes and preferences and actual health behaviors in young men. To this extent, while it is worthwhile to explore intervention preferences to guide intervention planning, addressing these may still be limited in terms of the impact the intervention makes on young men's actual diet and exercise practices.

Conclusion

The study emphasizes the importance of consulting young men when developing nutrition and PA interventions. Future programs for young men may look to incorporate skill development, individualized goals and feedback, resistance training and information on quick, easy, and cheap meals into program content, using multiple modes to deliver program messages. It is important to use relatable sources for recruitment using multiple methods and employ engaging and positive facilitators who vary session content to make it enjoyable. Given the need for more engaging, effective and sustainable health behavior change approaches for young men, researchers and practitioners should match intervention design and implementation to young men's identified preferences for recruitment strategies, content, facilitators, and format. Further research is needed to identify the most effective ways to address young men's individual preferences in intervention research.

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