

Development and evaluation of four short, animated videos promoting positive health behaviours for women in midlife

Karin Hammarberg, Mridula Bandyopadhyay, Hau Nguyen, Flavia Cicuttini, Karin Stanzel, Helen Brown, Martha Hickey, Jane Fisher

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Karin Hammarberg¹ RNC, MSc, PhD; Mridula Bandyopadhyay² PhD; Hau Nguyen¹ BA; Flavia Cicuttini¹ MD, PhD; Karin Stanzel¹ RNC, PhD; Helen Brown³ PhD; Martha Hickey² MD, PhD; Jane Fisher¹ PhD

¹Monash University Melbourne AU

²Melbourne University Melbourne AU

³Deakin University Melbourne AU

Corresponding Author:

Karin Hammarberg RNC, MSc, PhD
Monash University
Level 4, 553 St Kilda Road
Melbourne
AU

Abstract

Background: Health and health behaviours in midlife are important determinants of healthy ageing. There is evidence of unmet needs for health promoting information for women from culturally and linguistically diverse backgrounds and women with low literacy.

Objective: The aims were to develop accessible short, animated videos promoting positive health behaviours for women in midlife and evaluate their accessibility, acceptability, understanding, and usability.

Methods: In collaboration with a video production company, a multidisciplinary team of academics and health professionals developed two short, animated videos on self-management of menopause health and two promoting joint health. Their accessibility, acceptability, understanding, and usability to women were evaluated in an anonymous online survey.

Results: In all 490 women viewed the videos and responded to the survey. Of these 353 completed all questions (72%). Almost all agreed that the information in the videos was 'very easy to understand'. The proportions reporting that all or some of the information in the video was new to them varied between videos from 36% to 66%; the reported likelihood of using the practical tips offered in the videos varied from 70% to 89%; and between 61% and 78% of respondents stated that they would recommend the videos to others.

Conclusions: Most women found the videos easy to understand, learned something new from watching them, planned to use the practical tips they offered and were likely to recommend them to other women. This suggests that short, animated videos about health self-management strategies in midlife to improve the chance of healthy ageing are perceived as accessible, acceptable, easy to understand, and useful by women. Clinical Trial: N/A

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Original Manuscript

Development and evaluation of four short, animated videos promoting positive health behaviours for women in midlife

Karin Hammarberg [ORCID 0000-0002-5988-5865](https://orcid.org/0000-0002-5988-5865)^{1*}, Mridula Bandyopadhyay [ORCID 0000-0003-4397-2072](https://orcid.org/0000-0003-4397-2072)², Hau Nguyen [ORCID 0000-0001-9893-2866](https://orcid.org/0000-0001-9893-2866)¹, Flavia Cicuttini [ORCID 0000-0002-8200-1618](https://orcid.org/0000-0002-8200-1618)¹, Karin Stanzel [ORCID 0000-0001-9582-7913](https://orcid.org/0000-0001-9582-7913)¹, Helen Brown [ORCID 0000-0002-5460-3654](https://orcid.org/0000-0002-5460-3654)³, Martha Hickey [ORCID 0000-0002-3941-082X](https://orcid.org/0000-0002-3941-082X)², Jane Fisher [ORCID 0000-0002-1959-6807](https://orcid.org/0000-0002-1959-6807)¹

¹School of Public Health and Preventive Medicine, Monash University, Melbourne Australia

²Department of Obstetrics, Gynaecology & Newborn Health, The University of Melbourne, Melbourne, Australia

³School of Exercise and Nutrition Sciences, Deakin University, Melbourne, Australia

* **Corresponding author:** Karin Hammarberg, School of Public Health and Preventive Medicine, Monash University, 553 St Kilda Road, Melbourne 3004, Karin.hammarberg@monash.edu

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Conclusion: Most women found the videos easy to understand, learned something new from watching them, planned to use the practical tips they offered and were likely to recommend them to other women. This suggests that short, animated videos about health self-management strategies in midlife to improve the chance of healthy ageing are perceived as accessible, acceptable, easy to understand, and useful by women.

Key words: health promotion; midlife women; healthy ageing; self-management

Introduction

In high income countries women's life expectancy is now around 85 years [1] and women over the age of 50 are one of the fastest growing demographic groups [2]. It is well established that health and health behaviours in midlife are important determinants of healthy ageing [3]. In women, midlife usually coincides with the menopausal transition, a life stage when physiologic changes occur that are linked to bone, cardiovascular, cognitive, and musculoskeletal health [3]. Furthermore, as

populations globally are aging, the proportion of people suffering osteoarthritis is increasing [4]. The joint pain caused by osteoarthritis can be debilitating and studies show that anxiety and depression are common among patients with this condition [5]. Postmenopausal weight gain is common, and a recent systematic review concluded that weight gain in adults is associated with increased risk of knee osteoarthritis [6].

Healthy ageing is governed by complex interactions between biological, environmental, socioeconomic, and cultural factors [7-9]. Some of these factors are beyond personal control. Others, including smoking, poor nutrition, weight gain, and lack of physical activity, are potentially modifiable. Because these factors are associated with the development of chronic conditions such as Type 2 diabetes, joint pain, and cardiovascular disease, it is important to improve health literacy relating to self-care strategies for optimising health in midlife to increase the chance of healthy ageing [8, 10].

Health literacy is the capacity "...to obtain, process and understand health information and services needed to make appropriate health decisions" [11]. Socioeconomic disadvantage, including having a low income, low educational attainment, low literacy, and being a non-native English speaker are associated with lower health literacy and poorer health [12, 13].

The internet is increasingly used to access health information. While access to the internet has been shown to reduce health inequalities [14], readability of online health information is mostly above the average reading level [15, 16] making it inaccessible to people with low literacy and those with English as a second language [17].

We used content analysis to assess the accessibility of the information on 16 Australian websites with health information for women in midlife and found that most offered written factsheets with content above the average adult reading ability, only four included written resources in languages other than English, and only two had information in audio-visual format in languages other than English. We concluded that more accessible information resources for health self-management to reduce the risk of chronic disease are needed for women in midlife for whom English is not their first language and those with low literacy [18].

Digital health promotion resources have the potential to reach many people from diverse backgrounds with health promoting messages [19]. Based on the evidence of unmet needs for health promoting information for women from culturally and linguistically diverse backgrounds and women with low literacy, the aims of this project were to: 1) promote positive health behaviours in women in midlife through the development of accessible short, animated videos viewable and downloadable from YouTube and 2) evaluate their accessibility, acceptability, understanding, and usability.

Method

Video development

A multidisciplinary team of academics and health professionals with extensive research, professional, and personal experience of menopause and healthy ageing developed the template for short, explanatory, animated videos with practical evidence-informed tips about maintaining good health in midlife. In addition to their research experience, team members have clinical expertise in psychology, rheumatology, health promotion, gynaecology, and women's health nursing.

The decision to use narrated animated videos was based on a review of 38 trials demonstrating the efficacy of this medium in improving knowledge about medical procedures, management of chronic conditions, health-promotion, and disease prevention [20]. In addition, evidence from a study of colorectal cancer screening found that people with low health literacy recalled as much information as their more health literate counterparts when given the opportunity to watch spoken videos [21].

After reviewing the evidence about menopause and potentially modifiable factors in midlife that can affect women's future health trajectory, the team decided to create four two-minute videos covering; 1) explanation of the physiology of menopause, common menopause related symptoms and how they can be managed, positive aspects of menopause, and a recommendation to seek medical advice if symptoms are severe ('What is menopause?'); 2) practical steps women can take to optimise their health during the menopausal transition and in later life ('How to stay healthy after menopause'); 3) practical advice on managing joint and back pain ('Slowing weight gain to reduce joint pain'); and 4) simple strategies to reduce joint pain by avoiding weight gain ('Maintaining weight for joint health'). The development of the video content was informed by a review of the literature which identified "... focus on enjoyment, health benefits including healthy ageing, social support, clear messages, and integration of behaviours into lifestyle" as facilitators for the uptake and maintenance of positive health behaviours by people in midlife [22].

After expert advice from an animated explanatory video production agency, Punchy Media [23], that videos should ideally be up to only two minutes long and have less than 300 spoken words, draft scripts were developed with particular attention to simple language (Australian education Year 8 readability) and short sentences, framing messages in a clear and positive way, and offering advice about health behaviours that can be integrated into daily life [22]. The scripts were then edited by the agency's experts and a final script was agreed on. Using these scripts, the agency then developed a storyboard for the narration for each video in consultation with the research team. The animations were then created in an iterative process where feedback from the researchers was integrated until a final version was agreed on. The final animations had images of women with different body shapes,

age, skin colour, and clothing conveying ethnic and cultural diversity.

As the target populations included women from culturally and linguistically diverse backgrounds, the services of Ethnolink [24], an expert multicultural and multilingual communications agency used by government and health organisations across Australia, were sought. They translated the scripts into Vietnamese and Simplified Chinese, the two most commonly spoken non-English languages in Australia and tested the translations and animations with women from these language backgrounds. Some changes in the captions and voice-over were made in response to their feedback.

Evaluation of the English language version of the videos

The study was approved by Monash University's Human Research and Ethics Committee (2023-39025-93342).

Materials

The English versions of the educational videos were embedded in an anonymous online survey to ascertain women's perspectives on the videos' accessibility, acceptability, understanding, and usability. Participants were asked to view the four videos sequentially and answer four questions after each: 1) How easy was it to understand the information in the video? (Very easy, Quite easy, Quite hard, Very hard); 2) How new was the information in the video to you? (The information was completely new, Some of the information was new, A bit of the information was new, None of the information was new); 3) How likely are you to use some of the tips from the video? (Very likely, Quite likely, Not very likely, Not likely at all); and 4) Would you recommend this video to others? (Yes, Maybe, No). After viewing the four videos and answering the questions respondents were asked to state their age, highest level of completed education (No formal education, Primary school (Year 1- Year 6), Secondary school (Year 7- Year 12), Post-school qualification), state of residence, postcode, and main language. The survey was administered using Qualtrics software [25].

Participants and recruitment

Women aged 18 years or older were eligible to participate. They were recruited through advertising on social media platforms (Facebook and Twitter) and Jean Hailes for Women's Health's newsletter [26]. Jean Hailes for Women's Health is the national digital gateway for women's health funded by the Australian Government. The advertisement included detailed participant information and links to the videos and survey questions. The participant information stated that completion of the survey questions was taken as consent to participate in the study. In recognition of their time, women who completed the survey were offered the opportunity to enter a draw for one of ten AUD 40 gift cards. Those who wanted to participate in the draw were asked to provide an email address in a file not linked to their survey responses.

Data management and analysis

Responses entered by respondents in Qualtrics were downloaded into SPSS Version 28 [27]. Responses to the questions about the videos were dichotomised (ease of understanding information: Very easy vs Quite/Quite hard/Very hard; how much of the information was new: The information was completely new/Some of the information was new versus A bit of the information was new/None of the information was new; likelihood of using the tips from the videos: Very likely/Quite likely versus Not very likely/Not likely at all; likelihood of recommending videos to others: Yes versus Maybe/No). Postcodes were used to determine Socio-Economic Indexes for Areas (SEIFA) quintile. SEIFA is a ranking of areas in Australia according to relative socio-economic advantage and disadvantage. SEIFA quintile 1 represents the most disadvantaged and quintile 5 the most advantaged areas. Respondents were grouped by level of education (primary/secondary school versus post school qualification), and socioeconomic advantage (SEIFA 1 and 2 versus SEIFA 3, 4 and 5). Data were analysed using descriptive statistics and Chi square test for between group differences. Not all respondents answered all questions, the numbers who did are shown for each question in the tables.

Results

In all 490 women responded. Of these 353 completed all questions (72%). Respondent characteristics are shown in Table 1.

Table 1 Respondent characteristics

| | |
|--|------------|
| Age in years (n=452) Mean (SD) | 53.5 (8.8) |
| Level of education (n=446) | |
| Primary/secondary school | 13.5 % |
| Post school qualification | 86.5% |
| Main language (n=433) | |
| English | 97.2% |
| Other | 2.8% |
| Socio-Economic Indexes for Areas (N=434) | |
| Quintiles 1-2 | 24% |
| Quintiles 3-5 | 76% |

Respondents' mean age was around the age when most women experience menopause [28]. The proportions with post school qualifications (86.5% versus 63% [29]) and living in the three most advantaged SEIFA quintile areas (76% versus 60%) were much higher than in the general population suggesting that most respondents were well educated and living in relatively advantaged areas. Almost all reported that English was their main language.

Responses to the questions about the videos are shown on Table 2.

Table 2 Respondents' views about the videos

| | Video 1 ^a (N=386) | Video 2 ^b (N=373) | Video 3 ^c (N=363) | Video 4 ^d (N=353) |
|-------------------------------------|------------------------------------|------------------------------------|------------------------------------|---------------------------------|
| Information very easy to understand | 92% | 91% | 92% | 91% |
| All or some information was new | 36% | 57% | 42% | 66% |
| Very/quite likely to use the tips | 70% | 89% | 85% | 84% |
| Would recommend the video to others | 61% | 70% | 67% | 66% |

Data cells are percentages; ^a What is menopause?, ^b How to stay healthy after menopause, ^c Slowing weight gain to reduce joint pain, ^d Maintaining weight for joint health

Almost all respondents agreed that the information in the videos was 'very easy to understand'. The proportions of respondents reporting that all or some of the information provided in the video was new to them varied between one third for the video explaining menopause to two thirds for the video explaining how maintaining weight benefits joint health. The reported likelihood of using the practical tips offered in the videos was lowest for the video explaining menopause. For the other three videos more than 80% stated that they were very or quite likely to use the tips. Around two thirds of respondents stated that they would recommend the videos to others.

Education level group comparisons revealed few differences in opinions about the videos except that women with lower education were more likely than those with higher education to state that they would recommend the two joint health videos to others (80% vs 65% ($p=0.05$) for video 3 and 80% vs 64% ($p=0.04$) for video 4). There were no differences between women living in the least advantaged areas (SEIFA areas 1 and 2) and those living in the most advantaged areas (SEIFA areas 3,4 and 5) in their responses to any of the questions about the four videos.

Discussion

Menopause is ubiquitous at midlife and weight gain and joint pain are common in women as they age [30, 31]. High quality, accessible and evidence-based information is important to allow women to optimize their health in midlife and improve their chance of healthy ageing. However, accessing evidence-based and practical information about strategies in midlife to optimise health in older age can be difficult, especially for those with low literacy or from culturally and linguistic diverse backgrounds. To bridge this gap, we developed short, animated videos with practical tips on self-management of menopausal symptoms and joint pain. Evaluation of these videos showed that most women found them easy to understand, learned something new from watching them, planned to use

the practical tips they offered and were likely to recommend them to other women.

Socioeconomic disadvantage is known to be linked to poor health literacy i.e. the capacities to access, understand, appraise, and apply health information [32]. The videos were developed specifically to meet the needs of women who may have limited health literacy, and who therefore may not be reached by health promoting messages on existing websites [18]. However, since most survey respondents were well educated and living in socioeconomically advantaged areas, they were not representative of the target population. This likely reflects the known challenges of selection bias in survey research where people with higher social status and healthier lifestyle are overrepresented [33].

Despite this potential selection bias, the finding that there were no significant differences between the more or less educated groups or between those living in more or less socioeconomically advantaged areas in the proportions reporting that they learned something new from watching the videos suggests that health promotion messages delivered in short video format may benefit a cross-section of women in midlife. This supports the conclusion of a systematic review comparing the impact of video animations with other formats of information delivery on patient knowledge, attitudes, and behaviours, that 'video animations show promise as patient information tools, particularly for effects on knowledge' [20].

Health behaviours occur in a context of complex interactions between social, cultural, and economic factors. Most respondents stated that they acquired new knowledge from the videos and intended to use the tips in the videos. While increased knowledge alone might have limited effect on health behaviours, motivation and intention are known to be powerful drivers of behaviour change [34, 35]. The new knowledge respondents reported acquiring from the videos combined with their intention to use the tips in the videos suggest that they may contribute to positive health behaviour change among women in midlife.

The videos are available in English, Vietnamese and Simplified Chinese and currently reside on the website of the Centre for Research Excellence Women and Noncommunicable Diseases [36]. Based on the positive findings from this evaluation study, a multipronged dissemination strategy will be used to make these and other videos that are currently being developed accessible to as many women as possible. Pending funding we are also planning to evaluate the videos among Vietnamese and Chinese speaking women through interpreter assisted focus groups.

Conclusion

This study suggests that short, animated explanatory videos about health self-management strategies in midlife to improve the chance of healthy ageing are perceived as accessible, acceptable, easy to

understand, and useful by women and associated with high rates of intention to change health behaviours. Future research is needed to determine if and for whom this is followed by more positive health behaviours.

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Conflicts of interest

The authors declare no conflicts of interest.

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