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BRIEF REPORT

# Likeability and perceived effectiveness of messages designed to encourage physical activity participation among older adults

## Abstract

**Issue addressed:** Older adults are significantly less likely than their younger counterparts to engage in physical activity. Comprehensive policies to support healthy ageing thus need to include components encouraging greater participation in physical activity in later life. This study tested potential messages for use in health communication campaigns aimed at increasing physical activity among older adults.

**Methods:** Twelve written messages designed to encourage older adults to increase their levels of physical activity were rated by Australians aged 60-92 years (n = 369; 54% female) on the variables of likeability and perceived effectiveness.

**Results:** Ratings for all the tested messages were high across both outcome variables. The message *Move more, live longer* scored most favourably, with large majorities of participants liking this message (87%) and considering it effective (81%). Messages featuring rhyming or alliteration were rated significantly higher on both outcomes than messages without these attributes (all *P*s < .001).

**Conclusions:** Results provide insights into the types of messages that are likely to be accepted by older adults. Statements that use the phonological patterns of rhyming or alliteration are likely to be especially well received.

**So What?:** Increasing participation in physical activity among older adults is critical to promoting the sustainability of health care systems and enhancing quality of life. The specific messaging attributes identified in the present study as being effective could be used by public health practitioners to inform their approach to physical activity messaging to older adults and incorporated into future health communication campaigns to increase their potential effectiveness with this target group.

## 1 | INTRODUCTION

There is substantial evidence of the health benefits conferred by physical activity, especially among older adults. Participation reduces the risk of multiple chronic medical conditions, including cardiovascular disease, ischemic heart disease, type 2 diabetes, hypertension, and some cancers.[1] Physical activity has also been found to lower the risk of cognitive impairment, reduce the rate of falls, and prevent fall-related injuries.[2,3] Despite these benefits, older adults are significantly less likely than their younger counterparts to engage in physical activity,[4,5] highlighting an important need to increase participation rates in older age groups.

The World Health Organization's (2018) *Global Action Plan on Physical Activity 2018-2030*[6] recommends the implementation of best practice communication campaigns to raise awareness of the health benefits of physical activity and promote behaviour change. To help guide the creation of messages that could be used in such campaigns, the Physical Activity Messaging Framework[7] was developed in 2021. This framework features three overarching sections: 1 (who, when, what, how, and why), 2 (message content), and 3 (message format and delivery). Of interest to the present study were Sections 1 and 2.

When communicating about physical activity in health campaigns, it is important to use messages that are relevant to the intended target audience.[8] However, a recent scoping review concluded that the evidence relating to physical activity messaging directed at older adults is limited and there is a need for researchers to identify effective message content to include in campaigns designed for members of this population.[8]

The limited research on message content conducted to date indicates messages that (i) communicate the benefits of physical activity, (ii) raise awareness of the relationship between physical activity and health in older adults, and (iii) address older adults' motivations for engaging in physical activity can increase participation.[2,9-11] In terms of the latter, older adults report that age-related health conditions serve as a reminder of the need to take greater responsibility for their health

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to prevent functional decline and maintain their independence,[10,12,13] potentially motivating them to engage in physical activity. These findings point to the potential effectiveness of messages that focus on the health benefits of physical activity for older adults and motivate them to manage their health as they age to prevent illness.

According to the Communication-Persuasion Matrix,[14] message style is an important variable that can enhance the persuasiveness of communications. Evidence from the advertising literature indicates phonological patterns such as rhyming and alliteration can evoke positive affective responses, facilitate message processing, enhance attitudes to advertisements, and contribute to more persuasive advertising language.[15,16] Advertisements featuring rhyming or alliteration are also more likely to be shared among audience members and influence their behaviour.[15-17] To date, there appears to be a lack of research assessing the extent to which these phonological patterns may be effective in promoting physical activity in general and to older adults in particular.

### 1.1 | Present study

There are multiple health benefits conferred by physical activity, especially for older adults. This highlights the importance of increasing physical activity levels among older people, with communication campaigns a possible means by which behaviour change can be promoted. Given the lack of data on potentially effective messaging approaches, the present exploratory study aimed to test the likeability and perceived effectiveness of a variety of physical activity promoting messages among older adults.

## 2 | METHODS

### 2.1 | Message selection and development

Findings from the physical activity, gerontology, and advertising literatures were used to inform the selection or development of 12 messages that could be incorporated into physical activity promotion campaigns directed at older adults.[2,9,10,15-18] The tested messages contained one or more of the following attributes found in previous research to be relevant to physical activity participation among older adults and/or increase message appeal: (i) information communicating the physical health benefits of physical activity, (ii) information about the importance of taking responsibility for physical activity and health, and (iii) phonological patterns of rhyming or alliteration. The attributes of each message are listed in Table 1.

### 2.2 | Recruitment

Participants were recruited as part of a broader study assessing the health and well-being of retired older adults, defined as those aged 60+ years who were no longer engaging in paid employment.[19] Recruitment occurred via radio and newspaper advertising and the distribution of flyers at events for older adults, at the offices of organisations frequented by older adults, and via various community organisations. As participation in the broader study involved on-campus data collection, those recruited were required to be sufficiently mobile to travel to and around a university site. The study was approved by a university Human Research Ethics Committee. All participants provided written informed consent.

### 2.3 | Measures and procedure

The 12 messages in Table 1 were presented to participants in written, plain text format during an interview with a member of the study team. Two outcomes commonly used in the advertising literature were assessed: message liking and perceived message effectiveness. Participants rated each message on 5-point scales assessing the extent to which they liked the message (1 = *do not like the message at all* to 5 = *like the message very much*; as per Fox et al[20]) and believed it to be effective in encouraging older adults to engage in physical activity (1 = *not effective at all* to 5 = *very effective*; adapted from Wackowski et al[21]).

### 2.4 | Statistical analysis

Descriptive analyses were conducted to assess the likeability and perceived effectiveness of each message. To assess outcomes according to message attributes, scores on messages that shared each of the following attributes were summed and a grand mean calculated: (i) information communicating the physical health benefits of physical activity, (ii) information about the importance of taking responsibility for physical activity and health, and (iii) rhyming or alliteration. Paired-sample t-tests were conducted to examine differences between each of the messages and the message attributes on likeability and effectiveness ratings. Missing data (1%-2% of cases per message) were treated listwise. Scores on the outcome variables were normally distributed.

## 3 | RESULTS

### 3.1 | Sample

Participants were 369 adults aged 60-92 years (M = 70.00, SD = 5.83), of whom 54% were women and 26% tertiary educated. A majority (70%) lived with their partner and/or other family members. Nearly three-quarters (72%) described their health as "good" or "very good."

### 3.2 | Ratings by individual message

Likeability and effectiveness ratings for each message and by message attributes are presented in Table 1. Scores on both outcome variables were high overall, with means across all messages

TABLE 1 Likeability and effectiveness ratings stratified by message and message attributes

| Messages | Attributes | | | Outcomes | | | |
|---|---|---|---|---|---|---|---|
| | | | | Likeability | | Effectiveness | |
| | Benefits of PA | Rhyming/ alliteration | Taking responsibility | M (SD) | %[a] | M (SD) | %[a] |
| Move more, live longer | ✓ | ✓ | | 4.48 (0.80) | 87 | 4.25 (0.99) | 81 |
| Use it or lose it | | ✓ | | 4.42 (0.98) | 85 | 4.14 (1.04) | 76 |
| Be active 30-60 min a day to stay fit and well | ✓ | | | 4.31 (0.94) | 81 | 3.98 (1.10) | 71 |
| Stay fit to stay functional | ✓ | ✓ | | 4.29 (1.00) | 78 | 3.99 (1.08) | 67 |
| This is your time – enjoy being strong and active | | | ✓ | 4.26 (1.03) | 79 | 3.94 (1.12) | 69 |
| Get going everyday | | ✓ | | 4.20 (1.01) | 75 | 3.90 (1.12) | 64 |
| Do not let them tell you to slow down – strong seniors live longer | ✓ | | ✓ | 4.18 (1.18) | 78 | 3.90 (1.17) | 67 |
| You are the boss of you – get yourself fit and active | | | ✓ | 4.15 (1.11) | 74 | 3.82 (1.17) | 62 |
| Be active, regain control | ✓ | | | 4.03 (1.18) | 70 | 3.72 (1.24) | 60 |
| Today is the day we stop making excuses and get active | | | ✓ | 4.02 (1.14) | 71 | 3.74 (1.18) | 58 |
| Let us take it on, one step at a time | | | ✓ | 4.01 (1.09) | 70 | 3.78 (1.15) | 61 |
| Do not let your kids inherit your superannuation – work out regularly to live longer | ✓ | | ✓ | 3.87 (1.39) | 66 | 3.63 (1.41) | 59 |
| **Message attributes** | | | | M (SD) | %[b] | M (SD) | %[b] |
| Rhyming/alliteration (n = 4 messages) | | ✓ | | 4.35[a] (0.69) | 81 | 4.07[a] (0.80) | 72 |
| Information communicating the benefits of PA (n = 6 messages) | ✓ | | | 4.20[b] (0.74) | 77 | 3.91[b] (0.83) | 68 |
| Taking responsibility for PA (n = 6 messages) | | | ✓ | 4.08[c] (0.82) | 73 | 3.80[c] (0.87) | 63 |

*Note:* Different superscript letters between rows for message attributes denote significant differences between means. The sample size for each outcome on each message ranged from 361 to 365.

Abbreviation: PA, physical activity.

[a]Selected 4 or 5 on 5-point scales of 1 (*do not like the message at all/not effective at all*) to 5 (*like the message very much/very effective*).

[b]Average % (sum of the proportions obtained for each of the messages comprising an attribute divided by the total number of messages comprising that attribute).

of 4.19 (SD = 0.70) for likeability and 3.90 (SD = 0.78) for effectiveness (scale ranges: 1-5). The message *Move more, live longer* was rated highest on both outcome variables, followed by *Use it or lose it*. *Move more, live longer* was rated significantly higher on both outcome variables compared to almost all messages (likeability: $P = .002$ to $P < .001$, $d = 0.16$ to 0.47; perceived effectiveness: all $P$s $< .001$, $d = 0.24$ to 0.45), the exception being *Use it or lose it* (likeability: $P = .227$, $d = 0.06$; perceived effectiveness: $P = .074$, $d = 0.09$).

### 3.3 | Ratings by message attributes

Table 2 presents results from the paired-sample t-tests comparing results for message attributes. Messages that used rhyming or alliteration were rated significantly higher on both outcomes compared to messages without these attributes (all comparisons $P < .001$). Messages that featured information communicating the physical health benefits of physical activity were also rated highly, significantly outperforming messages that emphasised personal responsibility for physical activity (all $P < .001$).

## 4 | DISCUSSION

Health communication campaigns represent a potential means by which older adults can be encouraged to become more physically active to improve their health and well-being. Numerous physical activity messages were tested in the present study, providing insights into communication approaches that are likely to be acceptable to the target population.

All 12 of the tested messages performed well, suggesting they would all be appropriate to use in health communication campaigns. Where a single message is required, *Move more, live longer* appears to hold the most potential, followed by *Use it or lose it*. The superior performance of these messages may be at least partially due to the phonological patterns of rhyming or alliteration. This outcome reflects research in the advertising field that has found these attributes enhance advertising effectiveness by eliciting positive affective and attitudinal responses.[15,16] Results also support recent research investigating taglines for communicating the Canadian 24-Hour Movement Guidelines that found the tagline *Move more. Sit less. Sleep better* was preferred.[22]

The present study provides an important contribution to the literature by testing physical activity messages designed for older people,

**TABLE 2** Paired-sample t-test results comparing message attributes

| | Likeability | Effectiveness |
|---|---|---|
| Rhyming/alliteration vs. benefits of physical activity | $M_{diff} = 0.15$; $t(364) = 6.10$, $P < .001$, 95% CI = 0.10, 0.20, $d = 0.32$ | $M_{diff} = 0.16$; $t(361) = 5.84$, $P < .001$, 95% CI = 0.11, 0.21, $d = 0.31$ |
| Rhyming/alliteration vs. taking responsibility | $M_{diff} = 0.26$; $t(364) = 8.33$, $P < .001$, 95% CI = 0.20, 0.32, $d = 0.44$ | $M_{diff} = 0.27$; $t(361) = 7.93$, $P < .001$, 95% CI = 0.20, 0.34, $d = 0.42$ |
| Benefits of physical activity vs. taking responsibility | $M_{diff} = 0.11$; $t(364) = 5.44$, $P < .001$, 95% CI = 0.07, 0.15, $d = 0.29$ | $M_{diff} = 0.11$; $t(361) = 5.13$, $P < .001$, 95% CI = 0.07, 0.15, $d = 0.27$ |

thereby generating practical insights for those tasked with promoting active ageing and reducing physical inactivity among members of this age group. Supporting previous research examining the motivators of physical activity among older adults,[2,9,10] messages that featured information about the physical health benefits of physical activity in older adults (eg staying functional) performed well. Although the need to take greater responsibility for their health as they age is reported by older adults to be a motivator of physical activity engagement,[10] messages using this theme performed least favourably. However, future research could assess the extent to which these varying message types are differentially preferred by sub-segments of the older population as there may be meaningful differences between groups.

### 4.1 | Limitations and future research directions

The present study has some limitations. First, only message liking and perceived effectiveness were explored as outcomes, and a single item was used to assess each. Research is needed that (i) uses multiple-item scales to assess message effectiveness and (ii) explores the behavioural outcomes of the messages found in the present study to be most appealing. Second, some of the message types were not mutually exclusive, which may have introduced a confound. Additional research examining attributes in isolation and in various combinations would be useful. Third, this study focused on two of the three overarching sections of the Physical Activity Messaging Framework.[7] The third section, message format and delivery, was not examined. Research investigating the most effective means of communicating the messages (eg message location; message source; use of images, audio, and video) will be important to guide future efforts.[8,14] Fourth, the sample comprised community-dwelling older adults from one Australian city (Perth) who self-selected into the study. Caution should thus be exercised when generalising the findings to all older adults. Finally, co-design principles were not adopted, with the tested messages selected or developed based on findings in the literature. Research that actively involves older adults in the development of physical activity promoting messages may assist with identifying additional effective communication approaches.

### 4.2 | Conclusion

This exploratory study blended findings from the physical activity, gerontology, and advertising literatures to test a series of messages promoting older adults' engagement in physical activity. The results provide insight into the types of messages that are likely to be suitable for the target audience. The specific content and style attributes identified as being effective could be used by practitioners and policy makers to inform their approach to physical activity messaging to older adults. Messages that use the phonological patterns of rhyming or alliteration and feature information about the physical health benefits of physical activity in older adults may be especially well received. The message *Move more, live longer* performed best, likely owing to its use of these highest performing attributes.

#### KEYWORDS

alliteration, attributes, health communication, messages, older adults, physical activity, rhyming

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#### CONFLICT OF INTEREST

None to declare.

#### AUTHOR CONTRIBUTIONS

Michelle I Jongenelis: Conceptualisation, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review and editing. Ben Jackson: Methodology, Writing – review and editing. Robert U Newton: Methodology, Writing – review and editing. Simone Pettigrew: Funding acquisition, Conceptualisation, Methodology, Writing – review and editing, Supervision, Project administration.

#### ETHICAL APPROVAL

This study was approved by Curtin University's Human Research Ethics Committee (HR21/2014). All participants in the study provided informed written consent.

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