

INFORMATION BEHAVIOR IN STAGES OF EXERCISE BEHAVIOR CHANGE

THIS POSTER IS BASED ON THE ORIGINAL ARTICLE

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AIM

To understand young men's needs for and practices of obtaining and avoiding information on physical activity and exercise in relation to their readiness to change exercise behavior

BACKGROUND

- The provision of information has long been a basic method for promoting healthy behaviors
- The Transtheoretical model of behavior change (Prochaska & DiClemente, 1983) implies that individuals at different stages of change would benefit from stage-tailored health communications
- Nevertheless, the understanding of how individuals in different stages of change interact with health information is scarce.
- By further enhancing this understanding the means of health communication could be better employed to persuade individuals to adopt healthier behaviors

- Information behavior = the ways in which individuals interact with information (Bates, 2010)
- Information need = an individual's recognition that the knowledge he or she has is inadequate to satisfy a certain goal (Case, 2007) or to make sense of the situation or the surrounding world (Dervin, 1983)
- Information practices = the way by which individuals acquire information (McKenzie's, 2003)
- Active seeking = actions in which individuals specifically seek out a known source, conduct a systematic search or ask a planned question from someone
- Active scanning = actions in which individuals identify a particular source as likely to be helpful or a particular location as a potential information ground
- Non-directed monitoring = situations in which individuals encounter information by chance or in an unlikely place
- Receiving information by proxy = situations in which individuals encounter sources through the initiative of a mediator such as a family member or a health professional (McKenzie's, 2003)
- Avoidance of information = any behavior designed to prevent or delay the acquisition of available but potentially unwanted information (Sweeney, Melnyk, Miller, & Shepperd, 2010)

METHODS

- A population-based survey (n=616) among young Finnish men at the Finnish Defence Force's call-ups
- Statistical analyses included calculation of distributions and mean and standard deviation values, correlation analyses, analysis of variance, and cross-tabulations with Fisher's exact test

In Finland all men are required to do military service with the option of exemption, unarmed service, non-military service or imprisonment. All men turning 18 the current year are annually called up for service by the Finnish Defence Forces. Thus, at the call-ups a large, population-wide, representative sample of young men can be reached.

Information behavior scale

- 12 items focusing on information behavior related to physical activity and exercise
- Included the following subscales: 1) information needs; information practices of 2) active seeking, 3) active scanning, 4) non-directed monitoring, and 5) receiving information by proxy; and 6) avoiding information

The stage of exercise behavior change scale

- From a picture of a ladder with five descriptors (0 = precontemplation, 1 = contemplation, 2 = preparation, 3 = action, 4 = maintenance) the respondents were instructed to select a rung that best described their regular exercise behavior and intentions to exercise
- Regular exercise was defined as 20 minutes or more of continuous physical activity performed at a vigorous pace three or more times a week

Stage of exercise behavior change	Descriptor
MAINTENANCE (M)	I currently exercise regularly and have been doing so for longer than six months.
ACTION (A)	I currently exercise regularly but I'm have only begun doing so within the past six months.
PREPARATION (P)	I currently do not exercise regularly but I'm think about starting to exercise within the next month.
CONTEMPLATION (C)	I currently do not exercise regularly but I'm think about starting to exercise within the next six months.
PRECONTEMPLATION (PC)	I currently do not exercise regularly and I do not intend to start in the next six months.

RESULTS

- The majority of the young men were in the maintenance stage of exercise behavior change
- The information behavior of the men varied by their exercise behavior change (see Table 1)

Table 1. Mean scores, Kruskal-Wallis test results, and pairwise multiple comparisons results for self-efficacy, decisional balance, and change process variables across stages of change.

	PC 10.5 % (n=63)	C 13.0 % (n=78)	P 14.5 % (n=87)	A 13.0 % (n=78)	M 49.0 % (n=294)	p*	Pairwise multiple comparisons (p<0.05)
Information need	1.4**	1.85	1.96	2.17	2.52	<0.000	PC<C,P,A,M; C,P<M
Active seeking	1.77	2.21	2.30	2.77	2.97	<0.000	PC,C<A,M; P<M
Active scanning	1.73	2.21	2.40	2.43	3.26	<0.000	PC<P,A,M; PC,C,P,A<M
Non-directed monitoring	2.07	2.47	2.60	2.61	3.02	<0.000	PC<P,A,M; PC,C,P,A<M
By proxy	1.63	1.88	2.00	2.05	2.36	<0.000	PC<A,M; C,P<M
Avoidance	1.91	1.65	1.60	1.77	1.81	0.217	n s
Information behavior sum	1.06	1.44	1.54	1.66	2.04	<0.000	PC<C,P,A<M

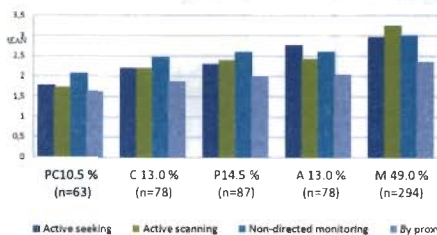


Figure 1. Practices of obtaining exercise and physical activity information among young Finnish men in five stages of readiness to change exercise behavior (n=616)

- In pre-action stages (precontemplation, contemplation, preparation) where individuals do not exercise regularly and are uninformed, or lack motivation, commitment or skills to change behaviors, information was most often encountered through the passive practice of non-directed monitoring (see Figure 1)
- In the action stage, where individuals have recently changed their exercise behaviors information was obtained most frequently by active seeking
- In the maintenance stage, where individuals maintain earlier adopted behaviors, information was habitually obtained through active scanning

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CONCLUSIONS

- This study is among the first to examine information behavior in terms of the stages of exercise behavior change
- The results add to the existing knowledge of the varying roles of information in a behavior change process
- The results show that those who aspire to an active lifestyle are more likely to obtain health information actively, while those less motivated to be active rely on passive practices of information acquisition and receive less information altogether through the various practices of obtaining information
- To increase the persuasiveness of health messages, health promoters might consider stage-tailored communications, where both the content and the delivery channels of interventions are tailored according to the stage of change

This study is part of



studies which aim to promote physical activity among young men and prevent their social marginalisation

Read more: http://www.tuunsaamopo.fi/sivu/fi/mopo-study_in_english

Youth leaders' representations about the role of youth organizations in physical activity promotion



Marc CLOES



Sophie WILKIN

Statement of the problem

- ♦ Multisectorial actions are needed to fight against sedentariness and all components of the community should be integrated into a general project (Sallis et al. 2006).
- ♦ Youth organizations (YO) gather thousands of children and adolescents each weekend. In a survey focusing on the leisure activities of Belgian adolescents (Wallonia), 23.9% of them answered that they were attending to YO (Cloes et al., 1997).
- ♦ YO propose to develop all dimensions of the individuals and to contribute to the education of the youth (Jadin, 2007): non-formal education, education by action, learning of group living, action for the youth by the youth. YO are firstly involved in the social development.
- ♦ Few studies have reported data about the impact of the YO on physical activity (PA) and healthy lifestyle (Dworkin et al., 2002; Rosenkrantz et al., 2010).

Goals of the study

- ♦ To analyze youth leaders' (YL) representations about PA.
- ♦ To describe their representations about the role of YO in PA promotion.



Methods

- ♦ Development of a questionnaire (pilot study designed to determine the most effective way to collect data among youth leaders): paper-pencil questionnaire comprising closed-ended questions (4-point Likert scale, multiple choices), short open-ended questions and one critical incident.
- ♦ The representations about PA focused on the PA definition, examples of PA, recommendations for PA in youth and adults, PA benefits, assessment of the PA level of the youth; the representations about the role of YO analyzed three levels (YO in general, activities organized by the staff, impact on youth's PA). The critical incident collected data about concrete examples of specific activities during which PA was promoted.
- ♦ 232 youth leaders (21,9 ± 7 years) fulfilled the questionnaire during their meetings (preparation of the activities during the week, special periods for continued education during the weekends).

Results and discussion



Youth Organizations and ...



✓ ... their role in PA promotion

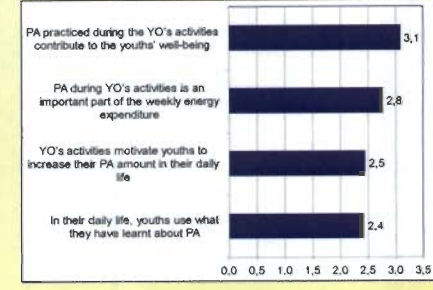
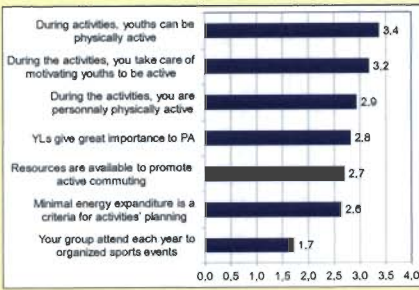
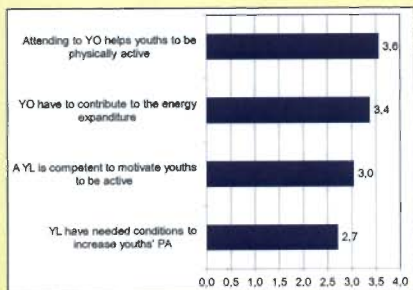
- ♦ YOs are clearly considered as a context in which youths can be physically active. It points out that more studies should analyze the real impact of these activities on the youth overall energy expenditure, particularly during weekend days.

✓ ... the place provided to PA during the activities

- ♦ The traditional organization and content of the activities proposed to the youths is based on an active model, corresponding to the general guidelines of the YOs. Physical skills are naturally developed (Thurber, 2007).

✓ ... their influence on youths' daily PA

- ♦ YO leaders were convinced that the energy expenditure amounted during the activities brings positive effects on youth well-being. This is related to the positive climate that is sought through socialization rather than on competition.



✗ ... their role in PA promotion

- ♦ If the YO leaders felt competent to motivate the youths to be physically active, they considered that they do not have enough resources to reach high levels. This might be related to the multidimensional educational goals that are stated.

✗ ... the place provided to PA during the activities

- ♦ If many physically active situations are proposed during the activities, their sports facet is not presented as determining; PA is integrated to the natural way of life in YOs but nothing is specifically planned to improve it.

✗ ... their influence on youths' daily PA

- ♦ Again, the answers confirmed that PA is a mean and not an end. All situations planned during the activities aimed to develop the individuals, through a large array of tasks, but PA promotion itself is not one primary objective.

In conclusion: YOs represent a real interesting contributor to youth weekly PA. This context of life should be more investigated in lifestyle studies.

Which characteristics for an Internet-delivered intervention to promote physical activity?

Opinions and usages of older adults



Jérôme Rompen, Alexandre Mouton & Marc Cloes

Highlights

- ✓ **Bouger plus** : web-based intervention to promote physical activity (PA) among older adults (website + tailored e-mails)
- ✓ **Purpose** : determine which components of the intervention are the most used by the participants and which components are the most useful to improve their PA level
- ✓ **Results** : information about local environment and personal tips seem to be particularly useful, according to participants
- ✓ **Future interventions** should include a social forum and some regular sessions of collective PA with a coach

Introduction

- ✓ Physical activity level declines with age¹, particularly after 50 years old²
- ✓ 55% of Belgian from 55 to 74 years old are weekly users of Internet³
- ✓ Internet-based interventions showed promising effects to promote PA among older adults⁴⁻⁵
- ✓ **Bouger plus** : web-based intervention to promote PA among older adults

Purpose

- ✓ To determine which components of the **Bouger plus** intervention are the most used by the participants and which components are the most useful to improve their PA level

Methods

Public :

- ✓ 87 older adults over 50 years old (dropout : 27%)
- ✓ 60.7 ± 7.9 years
- ✓ Inhabitants of the same municipality (semi-rural, 15 000 citizens, Liège area)
- ✓ Regular Internet access

Intervention :

- ✓ A 2 months access to a PA promotion website
- ✓ 2 tailored e-mails based on the PA stages of change theory⁶

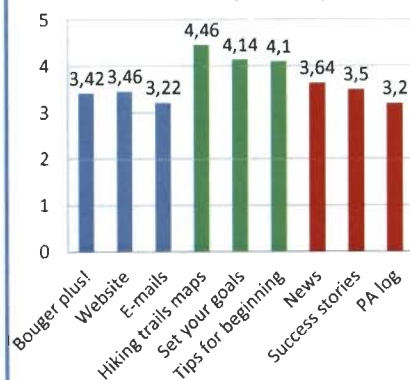
Assessment tools :

- ✓ A post-intervention questionnaire (utility of each component of the intervention, general opinion, suggestions for future actions)
- ✓ The measure of the number of visits of each page of the website

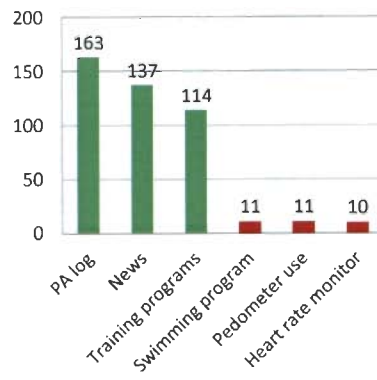


Results

Utility of the components of the intervention (score /6)



Number of views of the website pages



Conclusions

- ✓ Information about local environment and personal tips seem to be particularly useful, according to participants
- ✓ On the other side, older adults does not seem interested in technological tools like pedometers, heart rate monitors or PA logs. Some approaches should be implemented to point out their usefulness.
- ✓ However, all parts of this intervention were useful, according to the participants (scores higher than 3/6)
- ✓ In future interventions, all components could be preserved
- ✓ Some elements might be added, like a social forum or some regular sessions of collective PA with a coach

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All components received a score above 3/6

Total views : 1634

Top pages : « Hiking trails maps », « Set your goals » and « Tips for beginning »

Top views : « PA log », « News » and « Training programs »

Flop pages : « News », « Success stories » and « PA log »

Flop views : « Swimming program », « Pedometer use » and « Heart rate monitor »

Knowledge about physical activity among older adults: Short term effects of a neighbourhood environment Internet-based intervention

Alexandre Mouton, Jérôme Rompen & Marc Cloes

1 min

Highlights

- ✓ Intervention is composed of a 2 month access to a neighbourhood environment website and of 2 monthly tailored emails
- ✓ The intervention resulted in short term improvements of the knowledge about physical activity (PA) recommendations by the intervention groups
- ✓ Knowledge about the environmental opportunities for PA increased slightly during intervention but remains rather poor
- ✓ Relationships between premotivational constructs, such as PA knowledge, and motivation about PA in a long term perspective are still unclear

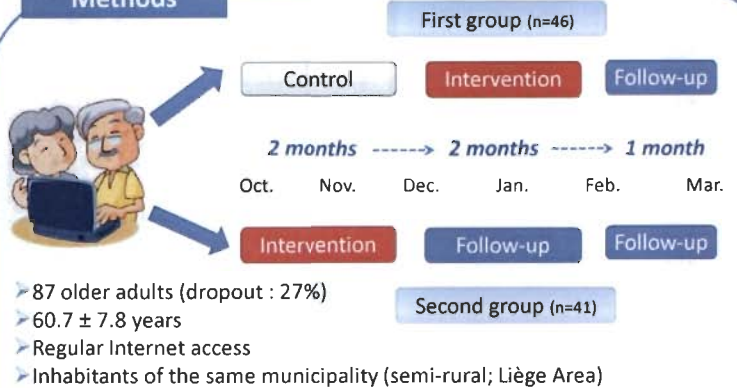
Background

- ✓ Despite multiple proven health benefits¹, population in Western countries meet less and less the public health recommendations for PA when they get older²⁻³
- ✓ Recent studies have shown that Web-based interventions to promote PA exposed promising effects⁴, with at least as many positive outcomes as non Web-based interventions, and at a lower cost⁵⁻⁶
- ✓ Older adults are the fastest growing group of Internet users⁷ and use it for health-related subjects⁸
- ✓ Knowledge about PA, a premotivational construct, could be increased using Internet-based interventions⁹⁻¹⁰

Aim

Explore the effects of a neighbourhood environment Internet-based intervention on knowledge about PA among older adults

Methods



- 87 older adults (dropout : 27%)
- 60.7 ± 7.8 years
- Regular Internet access
- Inhabitants of the same municipality (semi-rural; Liège Area)

Knowledge about PA recommendations (/4) :

- Minutes/week of endurance activities (/1)
- Days/week of strengthening activities (/1)
- Days/week of stretching activities (/1)
- Minimum amount (minutes) of effective PA (/1)

Monthly online assessment

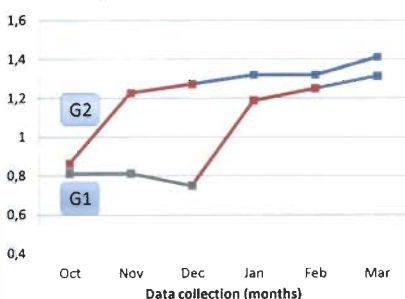
Knowledge of local opportunities for PA
Open-ended question (1pt per cited opportunity)

Intervention : Environmentally PA website + tailored emails



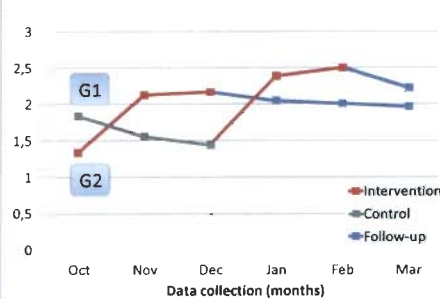
Results

Knowledge about PA recommendations (/4)



- ✓ Significant increase during intervention in group 1 ($p=0.044$), overall for group 2 ($p=0.032$)
- ✓ During follow-up, knowledge remains quite stable and increases slightly

Knowledge of local opportunities for PA (n)



- ✓ No significant increase during intervention in both groups ($p=0.184$ & $p=0.259$)
- ✓ Knowledge remains versatile and rather poor (1 to 3 opportunities cited per participant)

Conclusions

- ✓ A neighbourhood environment Internet-based intervention resulted in short term improvements of the knowledge of PA recommendations by older adults
- ✓ Few improvements of the knowledge of the local opportunities for PA were observed despite the environmentally approach of the intervention
- ✓ A similar but longer (3 month) intervention with weekly tailored feedback exposed significant improvements¹⁰, but higher drop out rate (30%)
- ✓ Create more "senior friendly websites" could help to extend their exposure and engagement to an Internet-based intervention¹¹⁻¹²
- ✓ Further research must extend relationship between premotivational constructs, such as PA knowledge, and motivation about PA in a long

Psychological Predictors of Compensatory Responses to a Structured Exercise Program: A Pilot Study



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Introduction

Background

- For many, exercise interventions for weight management do not result in the expected degree of weight loss, and some participants may even gain weight.
- Behavior-related compensatory responses [i.e., decreased energy expenditure (EE) and/or increased energy intake (EI)] outside of the intervention are thought to underlie most of the difference between measured and expected weight loss with exercise.

Aim

This pilot study aimed to identify possible psychological predictors of behavioral compensation to structured exercise in young adults.

Hypotheses

- Compensation via increase in EI would be most highly related to trait impulsivity and reward sensitivity
- Compensation via outside EE would be most highly related to self-motivation and fatigue

Methods

- 20 college-aged subjects (20.6 ± 1.5 years, 65% female)
- 8-week exercise intervention, approximate dose of 120 minutes of moderate-to-vigorous structured exercise per week
- Diet and outside activity were measured at three time points (Baseline, Week 5, Week 8)
 - ActiGraph GT3X accelerometers worn for 7 consecutive days
 - 3-day food diary records using the NCI's ASA24 recall program
- Psychological constructs were measured at baseline (Self-Motivation Inventory, UPPS-P Impulsive Behavior Scale, Mental and Physical State and Trait Energy and Fatigue Scales)
- Subjects excluded from analyses if insufficient number of intake days or if Actigraph wear-time requirements not met

Results

Measuring Compensatory Responses

- There were no significant mean differences between EI and EE at baseline and Week 8; however, substantial inter-individual variability was observed in changes in both EI and EE

Table 1. Accelerometer Estimated Daily EE (kcal)

N	Baseline EE	Week 8 EE	Mean EE Change Score
11	2205.1 ± 588.8	2265.1 ± 585.7	73 ± 112.3

Data are presented are in $M \pm SD$

Table 2. ASA 24 Estimated Daily EI (kcal)

N	Baseline EI	Week 8 EI	Mean EI Change Score
15	1994.3 ± 582.0	1754.7 ± 819.6	-239.6 ± 667.1

Data are presented are in $M \pm SD$

Psychological Predictors of Compensatory Responses

- Self-motivation was significantly correlated to change in EI ($r = -0.61$)
- Positive urgency, a construct related to trait impulsivity, was significantly correlated with EE change ($r = -0.70$)
- Measures of fatigue and reward responsiveness were not related to EE or EI change in this sample

Psychological Construct	EI Change (N = 15)	EE Change (N = 11)
Self Motivation	-0.61*	-0.33
Physical Fatigue State Change	-0.04	0.23
Physical Energy State Change	-0.28	0.10
Physical Fatigue Trait	0.14	-0.17
Physical Energy Trait	0.06	-0.22
Reward Responsiveness	-0.19	-0.34
Positive Urgency	-0.10	-0.70*
Negative Urgency	-0.18	-0.26
Sensation-Seeking	0.03	-0.15

* Indicates significance, $p < 0.05$

Discussion

- Individuals with higher Self-Motivation scores were more likely to decrease EI during the intervention
 - Highly motivated individuals may have viewed the intervention as a way to adopt healthier habits from a dietary perspective, thus closely monitoring kcal intake
- Individuals with higher positive urgency scores were more likely to decrease their outside EE during the intervention
 - More impulsive individuals may reward themselves for exercise by increasing sedentary behavior for the rest of the day
- Future research should quantify behavior-related compensatory responses to exercise in larger samples

Conclusion & Implications

- Results suggest that psychological constructs such as self-motivation and trait impulsivity may help predict compensatory responses to structured exercise in college-aged students.
- Identifying psychological predictors of compensatory responses to structured exercise may lead to the development of weight management strategies tailored to an individual's propensity to compensate.