

Evaluation of New Information Technologies Exposure on Knowledge Retention Regarding Benefits of Physical Activity on Health Status

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Abstract: Physical inactivity is an important risk factor in several highly prevalent diseases, being associated with worse quality of life and higher mortality. Despite the implementation of a several global, national and local policy instruments and strategies to promote physical activity (PA), including Internet platforms and advertising campaign, approximately two thirds of the European adult population reports low adherence to an active lifestyle, impairing health benefits that exercise can provide.

Increasing efforts to provide adequate information have been made, and the use of new technologies tools has increased, but little investigation focus on the effect of information exposure on knowledge retention, regarding effects of physical inactivity in health.

The objective of the present study is to evaluate differences among people in the use of new information technologies as information source on PA, regarding their perceptions of benefits of an active lifestyle and characteristics of adequate physical activity to health improvement.

The study included a randomly recruited sample of 879 subjects (53% males; 47% females), age 42.3±19.4 years old.

A survey was designed to (1) identify main information sources; (2) relate perceived knowledge and PA information sources; (3) relate knowledge retention on adequate PA for health benefits and PA information sources; (4) relate perceived necessity of more information regarding PA and information sources and (5) relate PA levels and information sources.

Results show that two information sources (teacher and sport professionals) positively influence perception of proper PA information. Results also found teachers, Internet and sport professionals as PA information sources that most influence their users, regarding Knowledge retention. We also found that rely on friends/family; teachers, Internet and sport professionals as PA information sources positively influence the adoption of an active lifestyle.

Keywords: e-health, information technologies exposure, knowledge retention

1. Introduction

In 2009 approximately 25% of the world's population had access to the Internet, with estimates of 50% in Europe and 74% in North America (Webb et al. 2010). Recent data report more than one billion Internet users worldwide (Steele et al. 2007) what altered the way people work, communicate, travel, learn, play and leisure. Internet changed the access to information, the amount of information and the characteristics of information itself.

This explosive growth of the Information Technology/Information Systems (IT/IS) caused an increment on use innovative applications, in order to promote behaviours related to healthy lifestyle, such as lack of physical activity, low consumption of fruit, cigarette-smoking, unprotected sex and excessive alcohol consumption (Crutzen et al. 2008).

The Internet is considered an interesting medium for such interventions since (1) it provides the option of delivering versions of individualized computer-tailored interventions at any time and place (Brouwer

et al. 2009); (2) have the potential to service large numbers of the population; (3) have convenience, novelty, appeal and flexibility of use (Leslie et al. 2005); (4) permit automated data collection; (5) allows proactive recruitment (contacting potential participants and offering them services, (Leslie et al. 2005); (6) can be delivered through various non-face-to-face channels, thus reducing the influence of barriers associated with face-to-face interventions (e.g., time constraints, childcare), (Marcus et al. 2007); (7) participants can access large amounts of information and choose the time to interact and receive information (Van den Berg et al. 2007) and (8) offer the advantages of cost savings (Steele et al. 2007).

Rice (2006) consider that the use of Internet as information source regarding healthy lifestyle has advantages (availability of a wide array of information, support for interpersonal interaction and social support, tailored information, anonymity), disadvantages (cost, technical language, unequal access), obstacles (overload, disorganization), and dangers (lack of peer review, inaccurate or misleading information, risk-promoting messages).

The Internet has been acknowledged as a valuable means of health promotion, with information in web spread throw static health educational sites, peer support groups, online health consultations and delivery of Internet interventions (Mitchell et al. 2009).

Recently, Web applications that facilitate collective knowledge creation and exchange and social networking (referred to as “web 2.0”) have become increasingly popular, including weblogs, wikis, social networking sites, social bookmarking, tags and tag clouds (which give rise to folksonomies), pod- and vod-casts, mash-ups and RSS feeds (Adams 2010). These tools emphasize the value of user-generated content, collective knowledge production and the exchange of personal experiences. Lewis et al. (2009) refer that interactive health communication applications are effective for increasing knowledge and may improve outcomes, regarding the adoption of healthier lifestyle.

1.1. Internet use to increase PA

Regular moderate-intensity PA has an important influence on health and well-being, with important role in the prevention of various chronic diseases (cardiovascular diseases, ischemic stroke, hypertension, obesity, diabetes mellitus, osteoporosis, etc.), (Warburton et al. 2006; Klavestrand and Vingård 2009).

Despite widespread awareness of dangers of inactivity, rates remain high, with 66% of the European adult populations insufficiently physically active for optimal health benefits, leading to approximately 600 000 deaths/year (WHO 2006).

Increasing PA is a public health priority in most developed countries (ACSM 2006; WHO 2006). Attempts to promote and maintain higher levels of PA include interventions based on informational, behavioural and/or environmental approaches.

Due to the widespread scope of this problem, prevention and intervention strategies that include media-based messages are needed to reach large population segments at reasonable costs (Marks et al. 2006; Spittaels et al. 2007) so, researchers have focused upon innovative information technology applications as a mean of engaging populations behaviour change to increase PA (Steele et al. 2007). IT/IS have become a viable means of gathering and disseminating physical activity education (Ahern 2007).

Two different approaches can be found, regarding IT/IS use to lead to a more active lifestyle: behavior-change interventions and information dissemination.

1.1.1. Internet based interventions to increase PA

Behavior-change interventions aim to change individual behavior towards a more active lifestyle. The impact on behavior is influenced by (1) the theoretical basis of the intervention (most common used are theory of planned behavior, the transtheoretical model or social cognitive theory); (2) the behavior change techniques (most used: providing information on the consequences of behavior in general; prompting self-monitoring of behavior and identifying barriers and/or problem solving) and (3) the mode of delivery (Webb et al. 2010).

Among Internet based interventions, considerably differences were found, regarding mode of delivery, such as (1) interactivity; (2) integration with other delivery modes (e.g., telephone, interactive voice response, short message service, email or videoconferencing); (3) use of automated functions (automated tailored feedback; automated follow-up messages); (4) communicative functions (access to an advisor to request advice or peer-to-peer access) (Webb et al. 2010).

Ferney et al. (2009) refer previous Internet interventions on PA promote modest increases in PA. Authors consider that overall the effect of these interventions has been low and has declined substantially over time.

Crutzen et al. (2008) refer that have been reports about the efficacy of Internet-interventions for increasing PA, nevertheless the actual reach of Internet interventions do not meet expectations, with use of Internet interventions quite low, and when implemented in real life, exposure rates even lower. Authors conclude that in spite of considerable growth of Internet interventions in order to increase PA, the outcome results are far from expected, since exposure rates are extremely low.

Concerning this low exposure rates Brouwer et al. (2009) suggest that motivation to change a health behavior and curiosity about the intervention issue were important factors in the decision of adults whether to visit an Internet intervention, while interest in the topic and characteristics of the intervention itself (such as visual appeal, the structure of the web site, the length of the program, the use of web 2.0 contents and the existence of a registration procedure) as factors of importance in the decision to continue the visit.

Regarding the curiosity about the intervention issue, considered a main factor to the success of the intervention, Rice (2006) reported an increase on PA information demand: 35% in December 2002 and 42% in November 2004, concerning the most popular health topics searched for by Internet users. This data reveal a high interest on PA issue, from general population, in opposite to low effect of Internet-based interventions for increasing PA reported. From this contradiction we can infer that people look for PA information but do not get engaged on special design interventions.

1.1.2. Internet as information source to increase PA

Webb et al. (2010) reported that 30% or more of Internet interventions regarding increasing PA use only one mode of delivery and the main goal is provide an enriched information environment.

Users of these Internet applications can access large amounts of information and choose the time to interact and receive information (Van den Berg et al. 2007). Dissemination of information regarding health benefits of PA may promote major adherence to an active lifestyle.

Unfortunately Chalmers (2005) consider that the majority of the exercise information on the Web does not meet the high standards of quality requested and many times are associated with commercial interests, where information is confounded with product promotion. Adams (2010) refers the problem of blending advertising with informative content, considering commercial interest behind information as a major impairment to reliability of web-based information.

Nevertheless, Chalmers (2005) also acknowledge the existence of high quality sites that provide the best sources of introductory exercise information, for free. Most of those sites are associated to universities, research centres, governmental institutions, scientific publishers and others.

Brouwer et al. (2009) consider that most of Internet applications that aim to provide information have a static mode of delivery, where information does not change over time, has little interactivity and maintenance, compared to those with commercial background.

This may lead to a bigger problem: "serious" information is much less appealing than commercial one. Leslie et al. (2005) reinforce this idea, referring that websites with PA information may be more 'passive' than has been previously assumed and defend the need to discuss with web designers the necessity to make websites more dynamic, to update website material regularly and to make them more appealing and useful to potential users.

Wanner et al. (2010) propose that to maximize effectiveness of dissemination information related to PA through Internet applications, it is important for developers to know more about user characteristics

and kinds of information they seek and adopt more appealing modes of delivery. Internet potentialities are yet to explore, in this field (Mitchell et al. 2009).

1.1.3. Evaluation of effect of IT/IS exposure in PA

Kefi (2003) refers that IS/IT evaluation is an important investigation issue, with several studies presenting different evaluation perspectives, such as (1) technical perspective: monitoring, data quality management, technological viability, risk evaluation; (2) economic perspective: assessment of IS/IT contributions to performance, productivity ratios, return over investment ratios, financial auditing; (3) strategic perspective: IS/IT value chain, IS/IT-based competitive advantages; and (4) organizational perspective: IS/IT contribution to organizational effectiveness, IS/IT-enabled organizational change.

Al-Yaseen et al. (2010) consider that IS/IT evaluation can also be considered in terms of the effectiveness of the IT system in situ – what a system actually accomplishes in relation to its stated goals.

New communication technologies may promote PA (King et al. 2008) but evaluation their effectiveness (in relation to stated goals) has little investigation.

Previous evaluation on Internet as an instrument to increase PA comprehended Internet base interventions and information dissemination. Those studies used controlled Internet exposure, in order to evaluate its effects. Effects of Internet exposure in natural settings (the normal use for each individual, excluding specially design interventions where Internet access is controlled) in efforts to change health behaviours gained increasing interest (King et al. 2008) since general populations access Internet in “natural setting” situation.

As far as our knowledge, no investigation focuses on evaluating the effect of Internet exposure in natural settings on knowledge retention regarding PA, using a large sample. This is the major objective of present investigation.

From this major objective, specific investigation problems emerged, in order to evaluate the effectiveness of IS/IT on knowledge retention regarding PA and levels of PA:

1. Identification of PA main information sources.
2. Relation between perceived PA knowledge and main information sources
3. Relation between knowledge retention on adequate PA for health benefits and different information sources
4. Relation on perceived PA information need and information sources
5. Relation on PA level with different information sources

2. Methods

This study used a survey specifically designed to evaluate the investigations questions previously established. This survey was applied during first trimester, 2010, on interview form.

2.1. Participants

A main goal was to reach a large number of interviewed people. The study included a randomly recruited sample of 879 subjects (53% males; 47% females), age 42.3 ± 19.4 years old. All interviews were conducted face to face, on public places from all over Portugal, in the first trimester of 2010. All interviews were completed.

2.2. Survey design

A survey was designed to gather information about effect of Internet exposure in natural settings on knowledge retention regarding benefits and characteristics of a physical active life style. Five items were considered for the study: (1) Identification of main information sources; (2) relation of perceived knowledge and PA information sources; (3) relation of knowledge retention on adequate PA for health benefits and PA information sources; (4) relation of perceived necessity of more information regarding PA and information sources and (5) relation of PA levels and information sources.

To ensure clarity, comprehension and time to complete all items, survey were reviewed by two experts and by five individuals that not participate in the study.

The survey consisted of closed questions structured with items in the form of multiple choice questions and Likert scales. Statistical analysis used the PASW 18.0.

3. Results

3.1. Information Sources

Several PA information sources were evaluated, using the question: "I obtained information on PA by...". Likert scales were used (5="strongly agree", 4="agree", 3="not sure", 2="disagree", and 1="strongly disagree") to evaluate the importance of each information source on the information regarding PA.

Items evaluated were consistent with typical information sources for PA (Verheijden et al. 2007): Medical personnel; TV; Friends/family; Teachers; Advertising/governmental information/public health campaigns; Internet/social networks and Sport professionals. Results are shown in Table 1.

Table 1: Evaluation of main PA information sources

	Mean rating	s
Medical personnel	2.76	1.316
TV	2.40	1.111
Friends/family	2.92	1.103
Teachers	2.55	1.425
Advertising/governmental information/public health campaigns	2.22	1.135
Internet/social networks	1.98	1.176
Sport professionals	2.73	1.433

All investigated items show a low mean rating, reporting little importance as PA information source. Most of interviewed (67.7%) do not receive PA information from Internet and social networks, the item with lower mean rating. These results present a paradox: typical PA information sources (according to literature) are not particularly used by general population. So, what are the main PA information sources?

3.2. Relation of perceived knowledge and PA information source

The evaluation of the perceived knowledge used two questions: QA - "I know the benefits of PA on my health" and QB - "I have proper information, regarding PA benefits on health". Answers were based on a Likert scale (5="strongly agree" 1="strongly disagree") to evaluate the level of perceived knowledge.

75.5% of inquired population consider that has a very good knowledge on benefits of PA on health (QA), presenting an average of 4.10±0.954, while 65.6% reported have proper information (QB), 3.83±1.2043.

Results of statistic relations of perceived knowledge (QA) and proper information (QB) and information sources were obtained by an ANOVA and a Tukey HSD, p=0.05 and are synthesised on Table 2 and Table 3.

Results found no statistical differences on knowledge perceived, among information sources investigated, meaning that the perception on PA knowledge is independent on source of PA information. For all information sources investigated, interviewed perceive that have a good knowledge on benefits of PA on health.

Table 2: Perceived knowledge on PA – QA

	Mean rating	s
Medical personnel	2.76	1.316
TV	2.40	1.111
Friends/family	2.92	1.103
Teachers	2.55	1.425
Advertising/governmental information/public health campaigns	2.22	1.135
Internet/social networks	1.98	1.176
Sport professionals	2.73	1.433

Table 3: Perceived information on PA – QB

	G					G 2					G 3				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Medical personnel	2.4	2.8	2.7	2.7	2.8										
TV	1.8	2.0	2.5	2.4	2.3										
Friends/family	2.5	2.5	2.8	2.9	3.0										
Teachers	1.8	1.5	2.0	2.6		1.8		2.0	2.6	3.1					
Public health campaigns	1.4	1.6	2.0	2.3	2.4										
Internet/social networks	1.4	1.2	1.7	2.0	2.3										
Sport professionals	1.4	1.5	2.3				1.5	2.3	2.4				2.3	2.4	3.3

Results found that two information sources (teacher and sport professionals) positively influence perception of proper PA information. This means that interviewed that rely on teacher and sport professional as PA information providers perceive that information is more accurate.

3.3. Relation of knowledge retention on adequate PA for health benefits and information sources

The knowledge retention regarding the characteristics (type of exercise, intensity, duration and frequency) of adequate PA for the enhancement of health was evaluated by multiple choice questions, where different options could be considered. The right answer was the one consistent with literature recommendations (ACSM 2006).

Regarding a question on adequate PA' frequency, duration and intensity for health benefits (QC), we obtained an unexpected 74.5% of wrong answers. On evaluation of knowledge regarding adequate heart rate interval during exercise (QD) we found even more wrong answers: 82.1%. These results present a paradox with elevated perceived knowledge (QA) and proper information (QB) reported. The relation between right (R) and wrong (W) answers and information sources was made using a t-test. Results are presented on Table 4 and Table 5.

Table 4: Relation between R and W answers and information sources (QC) (df=879)

		t-test for equality of means (95% Confidence)			
		Mean rating	s	t	Significance* (two-tailed)
Medical personnel	R	2.58	1.269	2.364	0.180
	W	2.82	1.327		
TV	R	2.44	1.072	-0.621	0.535
	W	2.39	1.125		
Friends/family	R	2.92	1.113	0.590	0.953
	W	2.92	1.101		
Teachers	R	3.00	1.384	-5.640	0.000*
	W	2.39	1.406		
Public health campaigns	R	2.22	1.107	-0.15	0.988
	W	2.22	1.145		
Internet/social networks	R	2.34	1.214	-5.327	0.000*
	W	1.86	1.138		
Sport professionals	R	3.24	1.364	-6.232	0.000*
	W	2.56	1.416		

Results on Table 3 found that teachers, Internet and sport professionals are the only information sources that influence their users. Statistical analysis also reports a positive effect of referred sources on % of right answers, regarding adequate PA' characteristics for health benefits. Sport professionals are the only source that reports a positive mean rating (3.24±1.364).

Table 5: Relation between R and W answers and information sources (QD) (df=879)

		t-test for equality of means (95% Confidence)			
		Mean rating	s	t	Significance* (two-tailed)
Medical personnel	R	2.71	1.308	0.536	0.592
	W	2.77	1.319		
TV	R	2.46	1.149	0.749	0.454
	W	2.39	1.103		
Friends/family	R	2.83	1.113	1.136	0.256
	W	2.94	1.101		
Teachers	R	2.54	1.508	0.035	0.972
	W	2.55	1.407		
Public health campaigns	R	2.12	1.142	1.193	0.233
	W	2.24	1.133		
Internet/social networks	R	2.01	1.208	-0.276	0.783
	W	1.98	1.170		
Sport professionals	R	2.82	1.512	-0.873	0.383
	W	2.71	1.415		

For all information sources there were no statistically significant differences between the mean scores of people with right and wrong answers. The knowledge of adequate heart rate in exercise is statistically independent on PA information source.

3.4. Relation of perceived necessity of more PA information and information sources

The evaluation of the perceived necessity for more information on PA used one questions: QE - "I would like to know more about adequate PA" with answers based on a Likert scale (5="strongly agree" - 1="strongly disagree").

33.9% of inquired population reported a high interest in have more information related to PA, presenting an average of 3.82 ± 1.210 .

Statistic relations between QE and information sources reported were obtained by an ANOVA and a Tukey HSD, $p=0.05$ and presented on Table 6.

Table 6: Relations between perceived need of more PA information and information sources

	G					G 2					G				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Medical personnel	2.5	2.3		2.6		2.5		2.8	2.6	2.9					
TV	1.7						2.3	2.4	2.3	2.5					
Friends/family	2.6	2.7	2.9	2.9	2.9										
Teachers	2.0	2.3		2.4		2.3	2.5	2.4	2.7						
Public health campaigns	1.5	1.8				1.8	2.1					2.1	2.3	2.2	
Internet/social networks	1.3	1.6				1.6	1.9	2.0				1.9	2.0	2.1	
Sport professionals	2.1	2.4	2.6			2.4	2.6	2.7				2.6	2.7	2.9	

As expected, lower mean ratings refer to little use on information sources, meaning that people that do not use information sources do not need more information on PA.

Friends/family shows no influence on perceived necessity of more PA information. Statistical results found two different groups, regarding information necessity, for medical personnel, TV and teachers and three distinct groups for other information sources. In all groups, there is a low necessity (mean rate < 3) for more PA information.

3.5. PA levels

Assessment of PA level was made using the International Physical Activity Questionnaire (IPAQ), validated to Portugal by Craig et al. 2003.

Adequate PA level was defined as 1260 MET-minutes per week (Craig et al. 2009) so in our analyze we considered two groups: people with adequate level of PA, if MET-minutes per week ≥ 1260 (GA) and people with no adequate level (GNA) - MET-minutes per week < 1260 .

28.9% of interviewed presented an inadequate level of PA, with serious consequences to health status. This result is consistent with information that a large percentage of population is not active enough.

t-test was performed to find statistical relations between adequate PA level and information sources. Results can be found in Table 7.

Table 7: Relation of adequate PA level and information sources (df=879)

		t-test for equality of means (95% Confidence)			
		Mean rating	s	t	Significance [*] (two-tailed)
Medical personnel	GA	2.78	1.315	-0.563	0.574
	GNA	2.72	1.320		
TV	GA	2.39	1.126	0.594	0.553
	GNA	2.44	1.075		
Friends/family	GA	2.97	1.105	-2.263	0.024*
	GNA	2.79	1.090		
Teachers	GA	2.66	1.429	-3.689	0.000*
	GNA	2.27	1.381		
Public health campaigns	GA	2.23	1.123	-0.610	0.542
	GNA	2.18	1.165		
Internet/social networks	GA	2.04	1.191	-2.314	0.024*
	GNA	1.84	1.128		
Sport professionals	GA	2.85	1.434	-3.877	0.000*
	GNA	2.44	1.390		

For four information sources (Friends/family; teachers, Internet and sport professionals) there were statistically significant differences between the mean scores of people with adequate and no adequate (low) PA level, meaning that those sources influence (positively) adoption of an active lifestyle.

4. Discussion

Internet interventions should comprehend information dissemination and appliance in real-world settings (Lewis 2007). Our results report that only 13.8% of interviewed use Internet as information source, concluding a low use of Internet as PA information dissemination. However the younger groups (younger than 26 years) tend to do a more intensive use of the Internet for PA information (22.5%). Other studies even found a higher Internet use (e.g. Borzekowski and Rickert, 2001, refer that half of the teenagers look for fitness and exercise information on the Internet).

The PA information available on the Internet is raising (Mitchell et al. 2009) even though our findings don't report Internet as a major information source.

Perceived knowledge on PA is independent on PA source reported, and in spite of mean ratings for all information sources investigated were low, the perceived knowledge on PA is high, meaning that people consider that have a good PA knowledge, but that knowledge is not driven by any of the information sources investigated.

This antagonist result can be explained by a divergence between perceived knowledge and knowledge retention. Result on % of right answers (17.9 and 25.5) seem to support this hypothesis. So, a gap exists between real and perceived knowledge regarding PA characteristics that enhance health status.

The perception of have good knowledge may impair information seeking, what may be related with low mean ratings found for all information sources and 48.8% of inquired population reported low interest in have more PA information.

Perception on adequate PA information is influenced by teachers and sport professionals. From these results we can infer that a better access to teachers and sport professionals enhances the perception that the information obtained is more adequate, compared with the use of other investigation sources. Evaluation of Knowledge retention found that for more general information on PA characteristics (QC), teachers, Internet and sport professionals influence knowledge retention whereas for more specific knowledge (QD), no significant differences were found between right and wrong answers and information sources. These results suggest that specific knowledge on PA may not be available among information sources investigated.

Regarding influence of information sources on active lifestyle, results report that interviews with friends/family; teachers, Internet and sport professionals as information sources have a more adequate PA level. This is an important finding, in the sense that the use of four information sources seems to have a positive impact on PA level.

Verheijden et al. (2007) refer that PA information seeking is related with literacy level of each individual, in the sense that higher educated look for more information related to PA. Our results show that teachers influence PA level, what may be related to Verheijden et al. (2007) findings.

Results refereeing the influence of friends/family on PA level are not consistent with other researches that reports dubious influence of parenthood on PA-related behaviours (Hamilton and White 2010) and limited effect of social context on effective active lifestyle (Wilson and Spink 2010).

The low influence of health professionals on PA level has been reported in literature. Horne et al. (2010) refer that health care professionals' advice and support was found to be a motivator to the initiation of exercise and physical activity, but not generally improves or increases activity levels. These authors also refer that health care practitioners need to be able to provide specific advice as to the quantity (frequency, duration, intensity and type) of exercise or physical activity to undertake – these information is usually provided by sport professionals.

Further research will be needed about this subject.

5. Conclusion

One major reason for IT/IS evaluation is to take actions based on the results of the evaluation, that should form a base of knowledge to be used to plan and perform knowledgeable actions (Lagsten and Goldkuhl 2008).

In spite of huge increment on Internet applications to promote healthy lifestyle, Internet presents the lowest usage as PA information source.

Internet as PA information source has a positive (but little) influence on knowledge retention and PA level, and is the only influent source with potential to reach large numbers of the population, with flexibility of use and easy access. So, Internet potentialities should be taking in account to Exercise Promotion Programs, in accordance to Nigg (2003) that points out three technologies potentialities for increase PA levels: a) the proactive recruitment of large populations, b) the individualization of interventions on a large scale, and c) the delivery of activity promoting interventions to large populations via differing channels.

No influences were found regarding knowledge retention on specific PA characteristics for health benefits, so we can infer that general PA information are more disseminated than specific ones. Internet has no influence nor on perceived knowledge neither on perceived necessity for new knowledge.

The information sources with higher positive influence are sport professional and teachers. Concluding, formation and educational skills of the information source have particular influence on PA information, knowledge retention and adherence to active lifestyle.

Promotion of internet use as PA information source should be considered, and actions to assure information quality and websites more appealing and useful to users must be taking.

These results should promote a reflection regarding what kind of information and technology should be considered, to increase active life style adherence. The study suggests internet interventions to promote PA should be combined with sessions with sport professionals, in order to potentiate the behaviour change towards more active lifestyles.

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