

Some Strategies for Sustaining a Walking Routine: Insights From Experienced Walkers

Jason Duvall and Raymond De Young

Background: This study explores the strategies that experienced walkers felt were most useful for sustaining outdoor walking routines. To investigate this issue, a survey-based instrument was used in combination with a Conceptual Content Cognitive Mapping (3CM) exercise. **Methods:** Seventy-one experienced walkers were asked to complete the 3CM exercise to explore the strategies that have helped them regularly walk outdoors. After 1 week these same individuals received a survey investigating these same issues as well as demographics and physical activity participation. **Results:** There was general agreement between 3CM and survey data with respect to the strategies used by experienced walkers. The most highly endorsed strategies involved using health goals and supportive walking environments. Survey results also revealed that those more likely to endorse the use of social support took fewer walks per week, but engaged in more nonwalking related physical activity. **Conclusions:** Overall, the findings suggest that experienced walkers use a variety of strategies. Strategies such as focusing on the positive health outcomes, using attractive natural settings, and developing realistic action plans appeared to be the most useful. These results also indicate the 3CM technique may be an effective way to explore beliefs and motivations regarding physical activity.

Keywords: behavioral strategies, motivation, Conceptual Content Cognitive Mapping (3CM)

During the last several decades the problem of obesity and inactivity has become a major public health concern.¹⁻⁴ Fortunately, research indicates that encouraging individuals to walk for as little as 30 minutes each day may be an effective way to address this growing public health crisis.⁵ Getting people to adopt a regular walking routine, however, has proven to be an extremely difficult task. As a result, many researchers and public health practitioners have focused their attention on identifying and understanding how various psychological, social, situational, and environmental factors impact an individual's physical activity participation. While this effort has led to a much richer and more comprehensive understanding of the forces that influence walking, translating these insights into concrete strategies which can be used to help individuals adopt and maintain a regular walking routine has remained a challenge.^{6,7}

The research presented here is part of an ongoing effort to deal with this challenge by investigating how individuals naturally cope with the variety of problems associated with maintaining physical activity routines. With that objective in mind, this study:

1. Identifies the strategies and techniques used by experienced walkers

2. Explores which of these strategies and techniques are associated with higher or lower levels of physical activity
3. Presents the Conceptual Content Cognitive Mapping (3CM) technique as a useful tool for investigating walking behavior.

Before providing a more detailed description of this research, it is useful to review the factors that have been found to influence physical activity participation.

Individual Factors

Knowledge of physical activity's benefits would seem to be an important factor in encouraging regular walking; however, there is very little evidence that successfully correlates one's knowledge about health benefits with adherence to a physical activity routine.^{8,9} These findings have led to speculation that knowledge about health benefits may only increase the chances one will initiate, rather than sustain, physical activity.

In contrast, motivation does seem to play a critical role in sustaining activity. Research indicates that individuals with stronger motivations related to obtaining personal health benefits are more likely to initiate and sustain a walking routine.^{10,11} There is also evidence which suggests that one's level of enjoyment of physical activity can be a significant factor for sticking with a

The authors are with the School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI.

physical activity routine,^{12–14} suggesting that the development of intrinsic motives may be particularly important.

Social Factors

Research has consistently indicated that social support is a significant factor in determining physical activity participation.^{8,9,15} This support seems to be effective whether offered directly by a significant other actually engaging in the activity¹⁶ or in more indirect ways, such as when one receives words of encouragement from a friend or family member.¹⁷

Situational and Environmental Factors

Numerous studies have identified lack of time as a major factor influencing physical activity participation.^{11,18–20} This issue may be especially prevalent for women and those with low socioeconomic status since they are likely to take on greater care-giving and family responsibilities.⁷

Attributes of the physical environments can also make it difficult to remain physically active. The most obvious example may be related to one's climate and geographic location. For example, evidence suggests that physical activity participation is lower in areas that experience more precipitation and greater fluctuations in temperature and humidity.^{21,22} Researchers investigating the role of the environment have also found that individuals are less active if they reside in neighborhoods which lack trails, sidewalks, and destinations.^{16,20,23,24} In addition, studies have highlighted the influence of safety related issues, such as automobile traffic²⁵ and street lighting.²³ Finally, research has shown that the aesthetic quality of the environment can impact physical activity participation, with factors such as the presence of natural features,^{16,26} attractive and interesting scenery²⁷ and a variety of views²⁸ all positively influencing activity levels.

Typically, recommendations designed to help individuals initiate and maintain a walking routine have focused on addressing these psychological, social, situational, and environmental factors by first establishing the benefits of being physically active, then encouraging individuals to set goals, develop a schedule, walk with a partner, and track their activity. While these strategies have been found to be useful in some cases,^{11,20,29–31} it is clear that many individuals still find it extremely difficult to sustain year-round walking routines.

One way to improve this situation is to seek advice from individuals who have been successful at maintaining a weekly walking routine. Initially, we might question the usefulness of advice from these experienced walkers since external conditions vary so widely from one individual to the next. It is certainly possible that experienced walkers live in areas more supportive of walking or have fewer

constraints on their time. However, experienced walkers likely have faced considerable challenges themselves. These insights are worth investigating for a number of reasons. They have managed to cope effectively with barriers by using specific techniques. Knowing what these techniques are and which ones have been more effective may give us clues about what might work well for others. Furthermore, having access to walkable environments or fewer daily demands does not necessarily ensure that individuals will initiate and maintain an outdoor walking routine. Many individuals who do have the opportunity to use walkable settings fail to take advantage of them. Finding out more about what helps some individuals use these settings is, therefore, potentially useful. As a result, the primary goal of this research is to investigate the strategies that have proven most beneficial to experienced walkers.

Methods

Participants

Seventy-one adults from southeast Michigan were recruited by posting announcements in several local newspapers and community health bulletins. Eligible participants were at least 18 years of age and were required to have already been walking at least 3 days per week for at least 30 minutes per day. The study was reviewed by a university affiliated Institutional Review Board and deemed exempt from IRB oversight. Participants first completed the Conceptual Content Cognitive Mapping (3CM) exercise, described below. One week later they were mailed the survey instrument. Sixty-two participants ($n = 62$) returned the survey instrument (87% return rate). Survey respondents were predominately female, well-educated, married, and between 50–59 years old (see Table 1). Respondents, on average, indicated they had maintained a walking routine for almost 15 years and went on just over 6 walks per week, with each lasting approximately 44 minutes.

Instruments

Two different methods were used to investigate the strategies used by experienced walkers. One of these was a standard questionnaire-based instrument which investigated demographic information and participant walking behavior. The second method, the Conceptual Content Cognitive Mapping (3CM) exercise, has been used successfully to explore individuals' knowledge about a diverse number of issues, including hazardous waste facility placement,³² forest management practices,³³ sustainable development,³⁴ cancer treatment,³⁵ pediatric pain assessment,³⁶ and low-income housing,³⁷ but has not previously been used to study physical activity participation.

Table 1 Characteristics of Participants

Characteristics	
Gender (%) ^a	
Female	89.8
Male	8.5
Age (%)	
20–29	9.8
30–39	14.8
40–49	14.8
50–59	47.5
60+	13.1
Education (%)	
High school	3.3
Some college	19.7
4-year degree	42.6
Postgraduate degree	34.4
Marital status (%)	
Single	22.6
Married	54.8
Divorced	16.1
Widowed	6.5
Number of years walking regularly (mean / median)	14.8 / 10.0
Number of walks taken each week (mean / median)	6.6 / 5.0
Duration (minutes) of each outing (mean / median)	43.5 / 45.0

^a The percentage of female and male participants is incomplete because several individuals did not indicate their gender on the survey instrument.

3CM. The 3CM was used to better understand the strategies experienced walkers used to sustain their routine. The 3CM is a card sorting exercise that reveals one's knowledge structure about a particular issue.³⁸ The exercise begins by asking participants the following question:

“A lot of people say they have trouble sustaining a walking routine. If you were going to tell someone about what you have found helps you to walk regularly, what are all the things you would mention?”

Participants are then given a set of 45 pregenerated response cards and told to select all the responses they feel are appropriate or, if necessary, create new responses on blank cards. After participants finish selecting responses, they are asked to organize the cards into categories and then create descriptive names for each category they have created. The cards are then collected and the structure of the emergent categories is recorded. In this study, no 2 participants selected the exact same set of items or created the same categories. However, meaningful and cohesive categories are identified from across the participants' data using the latent partition analysis technique described

below. Each 3CM interview lasted approximately 20 minutes.

Survey. A brief survey instrument was used both to further investigate the strategies participants used to sustain their walking routines and to validate the 3CM results. Similar to the 3CM task, participants were asked to think about what they would tell someone who wanted to know what has helped them to walk regularly. Participants then used a 5-point Likert scale to rate how likely they would be to mention different techniques, strategies, and motivations, such as setting a schedule, walking in nature, and preventing health problems. The techniques, strategies, and motivations included on the survey were identical to the 45 pregenerated 3CM responses (see Table 2).

The survey instrument was also used to assess demographic information and physical activity participation. Physical activity participation was investigated by asking participants to self-report the number of years they had walked regularly, the number of separate walks taken in a typical week, time spent walking during a typical outing, and amount of non-walking-related physical activity.

Table 2 Techniques Recommended by Experienced Walkers (3CM)

Category name and items included	Frequency item was mentioned
Use health goals	
Manage health	44
Prevent health problems	39
Manage your weight	47
To be more energized	35
Many personal benefits	30
Use nearby nature	
Walking in the woods	18
Scenery	28
Walking near water	17
Quiet places	18
Wildlife	19
Nature	26
Seasons	18
Watch changes along route	18
Mindful planning	
Good walkways/paths	33
Safe place	18
Set a schedule	31
Vary route	28
Make part of routine/habit	52
Don't overdo it	13
Start slowly	21
Monitor progress	21
Identify obstacles/barriers	7
Seeing other walkers	13
Set goals (e.g., distance, time)	31
Walking partner(s)	35
Time with friends	21
Walking group/club	21
Do mental tasks while walking	14
Walk pet	13
Vary intensity	13
Listen to music	15
Prepare for bad weather	18
Use devices	20
Fit in with other activities	21
Walk everywhere	27
Right clothing/gear	27
Make a priority	38

Statistical Analyses

The 3CM data were analyzed using latent partition analysis (LPA). Originally designed to analyze card sorting tasks, LPA is used to determine latent categories and intercategory relationships shared by a group regarding a particular issue.³⁹ Once categories were identified they were given a short descriptive name to reflect the overall concept represented.

To validate the 3CM categories and identify a common set of themes, factor analysis was used to explore the 45 survey items measuring the strategies used to sustain a walking routine. Similar to latent partition analysis, factor analysis identified categories of items that have correlated response patterns. Principal-axis factoring with Varimax rotation was used. Factor structure was based on item loadings of at least .45, Eigenvalues greater than 1.0 and alpha coefficients of at least .55. Items loading on more than 1 factor above the .45 level were excluded. Once the categories were identified, each was given a short descriptive name and a mean score was calculated based on the average rating of items within each category, across all respondents. Paired-samples *t* tests were then used to investigate differences between mean scores of each category. Finally, stepwise linear regression (stepping method criteria used probability of 0.05 for entry and 0.10 for removal) was used to explore the relationships among participants' self-reported physical activity and the factor analysis categories generated from the survey items that investigated the techniques, strategies, and motivations that participants rely on to sustain their walking routine.

Results

3CM

Latent partition analysis identified 3 separate clusters of items (see Table 2). The first cluster, *Use of health goals*, was composed of items associated with motivations to avoid health problems and/or attain health benefits. The second cluster, *Use nearby nature*, was made up of items related to aesthetic and natural features of the walking environment. The final cluster, which was labeled *Mindful planning*, included a combination of items associated with how to maintain motivation/interest, set appropriate expectations, and cope with environmental and situational issues.

Survey

Factor analysis identified 8 distinct categories of strategies (the items composing each category appear underneath each category name in Table 3). Several of these categories closely complement the 3CM categories identified above. Interestingly, one category, *Use nearby nature*, contained exactly the same set of items as those included in the corresponding 3CM category. Likewise, the *Use of health goals* category, which emerged from

both the 3CM and survey data, included a very similar set of items. Factor analysis of the survey data, however, split the *Mindful planning* category identified from the 3CM data into several smaller, more specific categories. One of these, also labeled *Mindful planning*, was in this instance composed of strategies associated specifically with maintaining and supporting motivation. These strategies ranged from more procedure-based advice for getting started, to the use of various extrinsic reinforcements. Items that grouped to form the *Seek good routes* category suggest the important role safety and the presence of quality walking paths play in determining whether one can maintain a walking routine. The next category, *Use routines*, emphasized the need to develop and stick with a plan for incorporating regular walking into one's normal schedule. *Seek social support* emerged as the sixth category, reflecting strategies which rely on the use of social motives and group support. Two single items, *Prepare for bad weather* and *Walk pet* also emerged as salient.

Of these categories, *Seek good routes*, *Use health goals*, and *Prepare for bad weather* were the strategies most frequently endorsed by survey respondents. *Use routines* received the next highest level of endorsement, followed closely by *Use nearby nature*, *Mindful planning*, and *Seek social support*. *Walk pet* received the lowest level of endorsement from the survey participants.

The regression analysis results indicated that individuals who were more likely to endorse the *Seek social support* strategy took significantly fewer walks per week (see Table 4). *Seek social support* also explained a significant proportion of the variance in the walks per week measure. This negative relationship was stronger among individuals who endorsed both the *Seek social support* and *Seek good routes* strategies. Together, these 2 strategies explained a significant proportion of the variance in the walks per week measure. Interestingly, participants who were more likely to endorse the *Seek social support* strategy also reported spending significantly more time participating in other types of physical activity besides walking. *Seek social support* also explained a significant proportion of the variance in the other types of physical activity measure.

Discussion

Taken together these results suggest that experienced walkers use a wide range of strategies and motives to sustain their walking routines. All of the categories that emerged from the factor analysis received at least a modest level of endorsement and no single category emerged as dominant. This finding lends some support to recent evidence suggesting that individuals with a greater number of exercise-related motives are also more likely to engage in physical activity.¹⁸ It is also worth noting, however, that 2 of the more highly endorsed categories (ie, *Seek good routes*, *Use health goals*) confirm the widely held belief that personal health concerns and the need for walkable environments are important factors associated with sustaining a walking routine.^{10,40-43}

Table 3 Techniques Recommended by Experienced Walkers (Survey)

Category name and items included	Mean ^a	SD	Alpha
Seek good routes	4.18 ^a	.81	.61
Good walkways/paths			
Safe place			
Use health goals	4.17 ^a	.82	.86
Manage health			
Prevent health problems			
Manage your weight			
To be more energized			
Many personal benefits			
Make priority			
Use routines	3.73 ^{b,c}	.84	.55
Set a schedule			
Do not vary route			
Make part of routine/habit			
Use nearby nature	3.41 ^{b,d}	1.01	.93
Walking in the woods			
Scenery			
Walking near water			
Quiet places			
Wildlife			
Nature			
Seasons			
Watch changes along route			
Mindful planning	3.14 ^d	.97	.86
Don't overdo it			
Start slowly			
Reward yourself			
Monitor progress			
Family support/encouragement			
Identify obstacles/barriers			
Seeing other walkers			
Set goals (e.g., distance, time)			
Seek social support	3.12 ^d	1.38	.85
Walking partner(s)			
Time with friends			
Walking group/club			
Prepare for bad weather	3.90 ^{a,c}	1.20	—
Walk pet	2.51	1.57	—

^a Means are based on a 5-point rating scale with higher values denoting higher endorsement for the category. Means sharing a superscript are *not* significantly different from one another in a paired sample *t* test at $P \leq .01$.

Table 4 Stepwise Regression Models Predicting Number of Walks per Week and Amount of Nonwalking-Related Physical Activity per Week

Number of walks per week	Step 1			Step 2		
	<i>b</i>	<i>SE b</i>	β	<i>b</i>	<i>SE b</i>	β
Constant	9.58	1.39	-.29*	15.71	3.27	-.32*
Seek social support	-.96	.41	—	-1.04	.40	-.25*
Seek good routes	—	—	—	-1.41	.68	—
	<i>F</i> = 5.55*			<i>F</i> = 5.04**		
	<i>R</i> ² = .09			<i>R</i> ² = .15		
	Adjusted <i>R</i> ² = .07			Adjusted <i>R</i> ² = .12		

Amount of nonwalking physical activity per week	Step 1		
	<i>b</i>	<i>SE b</i>	β
Constant	18.50	11.25	.32*
Seek social support	7.83	3.21	—
	<i>F</i> = 5.93*		
	<i>R</i> ² = .10		
	Adjusted <i>R</i> ² = .09		

Note. * $P < .05$; ** $P \leq .01$.

Three categories of techniques (ie, *Use routines*, *Use nearby nature*, *Mindful planning*) illustrate the importance of being engaged and aware of the interaction between the external/physical environment and one's mental state. Routines, for instance, may owe much of their effectiveness to the fact that both structure and order are usually present in the external environment. As a result, the need for one to constantly reassess a situation is decreased and predictability is enhanced, reducing the demand on mental resources involved in planning and self-regulation. Indeed, once a routine has been developed, considerably less mental effort is needed to determine when, where, and how to walk, which in turn makes it easier to know what to expect before, during, and after the walk.

The use of nearby nature can also be explained in terms of this interaction. Physical environments, which include natural features such as trees, water, and animals, are a source of ready-made fascination for humans.^{44,45} What's more, arranging enough of these natural elements in the right way can greatly enhance the aesthetic quality of the environment.⁴⁶ This combination of fascinating elements and aesthetic beauty may result in a more engaging and pleasant walking experience, increasing the chances one will continue to walk in the future.

Finally, the *Mindful planning* category suggests the importance of taking steps to manage expectations and maintain motivation. Experienced walkers seemed to recognize that feelings of frustration can often occur while one is struggling to adopt and stick with a routine and therefore recommend that individuals adopt a much gentler, more thoughtful approach. Experienced walkers

also seemed to recommend a broad range of strategies for sustaining motivation, some involving material incentives and others focused on the achievement-based intrinsic satisfaction that results from successfully accomplishing a goal.

In addition, it is interesting that the strategy to *Seek social support* was not more highly endorsed given its popularity in interventions designed to encourage physical activity through the use of walking partners, groups, or clubs. In fact, those more likely to endorse the use of social support and good routes actually took fewer walks per week and were more likely to engage in nonwalking related physical activity. It is possible that this counterintuitive finding can be attributed to the fact that reliance on either or both techniques may actually psychologically limit the number of walking opportunities, creating a ceiling effect. This raises the possibility that while seeking social support and/or good routes are effective in promoting walking among those currently inactive, these same strategies may have reduced and even reversed effectiveness as one gains more walking experience. In the case of social support, walkers share the routine with others, possibly making it less likely they would walk alone or at unscheduled times. As a consequence, they may find themselves seeking out other types of physical activity. Likewise, requiring safe, quality walking routes may limit the number of settings deemed acceptable in one's community, thus reducing the number of walking opportunities. While this latter finding may seem obvious, it highlights the fact that one's perception of the walking environment is at least as important as objective measures of environmental quality. This suggests that efforts to

alter individual perceptions of the outdoor environment should not be overlooked. Several studies, in fact, have found that efforts to enhance perceptions of the walking setting can have a marked positive impact.^{47,48}

Conclusion

While these findings suggest that experienced walkers rely on a variety of different strategies to help them sustain their outdoor walking routines, they also indicate that strategies related to achieving positive health outcomes, utilizing attractive natural settings and developing realistic action plans are widely endorsed. There is reason to suspect that the effectiveness of some strategies, such as relying on social support, may diminish as one attempts to sustain an outdoor walking routine over the long-term.

Given the similarities between the Conceptual Content Cognitive Mapping (3CM) exercise and the survey results, this study also indicates that the 3CM technique can be a valuable method for exploring issues related to physical activity participation. This technique may be a particularly useful way for health practitioners to understand how individuals conceptualize the barriers and motivations associated with physical activity.

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