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ARTICLE

Understanding older owners' motivation to dog-walk utilizing the Self-Determination Theory.

Ashley E. Hope¹, Jocelyn (Joey) M. Farrell¹, and Sandi J. Spaulding²

Abstract

Background: Dog ownership in older adulthood has been connected with increased likelihood of meeting the physical activity guidelines. However, there are older dog owners who do not walk their dogs. *Purpose:* We utilized the Self-Determination Theory to identify differences in motivation between regular and infrequent dog-walkers, while qualitative investigation helped identify and explore factors that influence motivation (basic psychological needs). *Methods:* Ninety-four dog owners, aged 55 yr and older, participated in the study. Participants completed the Behavioural Regulations in Exercise Questionnaire 2, a measure of motivation, a questionnaire to measure dog walking behaviour, and demographic information. *T* and Mann-Whitney *U* tests were used to identify differences in motivation. Nine regular dog-walkers participated in interviews to explore factors, including the basic psychological needs that may influence motivation to dog-walk. *Results:* Regular dog-walkers had significantly higher levels of intrinsic motivation ($U_{(80)} = 355.50, Z = -4.001, p < 0.002$), integrated regulation ($t_{(79)} = -4.050, p < 0.002$), and identified regulation ($U_{(80)} = 186.00, Z = 5.549, p < 0.002$), as well as lower levels of amotivation ($U_{(80)} = 530.50, Z = -3.404, p < 0.002$). Interviews supported that the basic psychological needs were satisfied in dog walking. *Conclusions:* The findings revealed that regular dog-walkers possessed higher levels of self-determined motivation, which is connected to higher levels of physical activity. Interviews suggest that the basic psychological needs are potentially facilitated through dog walking. **Health & Fitness Journal of Canada 2014;7(3):3-17.**

Keywords: Motivation, self-determination theory, dog walking, older adults

From ¹ School of Kinesiology, Lakehead University, Thunder Bay, ON, CANADA; ² School of Occupational Therapy, Western University, London, ON, CANADA.
Email: joey.farrell@lakeheadu.ca

Introduction

Physical activity offers individuals an enjoyable way to accrue health and well-being benefits (Paterson and Warburton, 2010; Warburton et al., 2006). Older adults can engage in sessions as little as 10 minute in length in order to complete a the recommended 150-min of moderate-intensity aerobic physical activity over the course of a given week (World Health Organization [WHO], 2011). Walking is an appealing form of activity, because it does not require a great deal of money or much equipment, and it can be done almost anywhere. It also can have numerous benefits for health, examples of which include physiological, psychological, and/or social benefits for an individual (Lee and Buchner, 2008; Warburton et al., 2006). Despite the numerous positive benefits of a physically active lifestyle, a large proportion of older adults are not physically active. According to data collected for the Canadian Health Measures Survey, approximately 85% of individuals 40 to 59, and 87% of individuals aged 60 to 79 are not meeting recommended guidelines (Colley et al., 2011). These results indicate that only 13 and 15%, respectively, of older adults in these age categories are completing enough physical activity to total 2.5 hr (150-min) over the course of a 168-hr week (Colley et al., 2011). Dog ownership,

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however, is a form of activity that may help individuals achieve the recommended levels.

Literature supports that owning a dog can lend benefits for physical activity (Brown and Rhodes, 2006; Oka and Shibata, 2009; Thorpe et al., 2006a). Dog walking, for instance, can help achieve recommended levels of physical activity (Hoerster et al., 2011; Oka and Shibata, 2009; Reeves et al., 2011; Thorpe et al., 2006b). Dog-walkers may experience benefits such as faster walking speeds (Thorpe et al., 2006b), health benefits (e.g., lower body mass indices, lower odds than non-owners for self-reported diabetes, hypertension, depression, and hypercholesterolemia (Lentino et al., 2012), or increased parasympathetic activity (Motooka et al., 2006). As well, dog owners may experience benefits related to maintenance of physical activity, despite seasonal changes (Lail et al., 2011). Evidence has illustrated that dog walking is associated with different factors connected to dogs, with examples including self-efficacy related to dog walking, encouragement from dog (Hoerster et al. 2011), obligation to one's dog (Brown and Rhodes, 2006; Hoerster et al., 2011), or feelings of support and motivation from dog (Christian nee Cutt et al., 2010). There may be wide variety of reasons dogs are perceived to motivate walking. For instance, individuals may feel a sense of accountability to their dogs (role in health, avoid guilt), recognize their dogs specific needs (exercise/behaviour control), or perceive dog ownership as inherently motivating (Cutt et al., 2008a). The role of dogs as motivators has also been described in other studies (e.g., Johnson and Meadows, 2010; Knight and Edwards, 2008). Closer evaluation of motivation, then, can

supplement understanding of dog walking behaviour.

Motivation is related to action (Ryan and Deci, 2000), which may have implications for understanding the adoption and maintenance of a physically active lifestyle. Categorization of motivation, within the Self-Determination Theory (SDT), depends upon the level of autonomous or controlled regulation that underlies each type of motivation (Deci and Ryan, 2000, 2008a, 2008b; Ryan and Deci, 2002). The different types of motivation, then, could mean different things in terms of dog walking activity. Intrinsic motivation (most autonomous) means individuals are not driven by peripheral outcomes, but would dog-walk because they really enjoy it (Deci and Ryan, 2000, 2008a; Ryan and Deci, 2000, 2002). Integrated regulation (also very autonomous) means an individual would dog-walk because he/she perceived dog walking as valuable; although it is value-mediated, it would be entirely derived from within (Deci and Ryan, 2000, 2008a; Ryan and Deci, 2000, 2002). Identified regulation is slightly less autonomous than integrated, but still means an individual would dog-walk because he/she believes dog walking is important (e.g., health benefits) and because he/she wants to dog-walk (Deci and Ryan, 2000, 2008a; Ryan and Deci, 2000, 2002). Introjected regulation is a more controlled form of extrinsic motivation and means an individual would dog-walk as the result of perceived external forces that are self-applied, such as to avoid feeling guilty about not walking (Deci and Ryan, 2000, 2008a; Ryan and Deci, 2000, 2002). External regulation is the most controlled form of motivation, meaning that an individual would walk his/her dog to achieve separate outcomes (e.g., avoid

getting in trouble with partner for not walking the dog; Deci and Ryan, 2000; Ryan and Deci, 2000, 2002). Finally, amotivation represents an absence of motivation or resolve to dog-walk (Deci and Ryan, 2000, 2008a, 2008b; Ryan and Deci, 2000, 2002). Although the different types of regulations, associated with varying degrees of autonomy, propel an individual to act, the level of engagement in that behaviour and the subsequent maintenance can be influenced by the extent to which it is self-determined¹. In other words, continued engagement in an activity can be supported by greater self-determination (Deci and Ryan, 2008b; Stephan et al., 2010). The SDT outlines three basic psychological needs (autonomy, competence, and relatedness) or “nutriments” (Ryan and Deci, 2002: p. 7). The need for autonomy, relates to “...an internal locus of control and the perception that behaviors are freely chosen”. The second need, competence, denotes an individual’s feelings of “...a sense of mastery and a perception of being effective in the things [they] do”. Finally, the need for relatedness refers to an individual’s “...satisfaction and involvement with the social world” (Kilpatrick et al., 2002, p.37). When the basic psychological needs are fulfilled, intrinsic motivation and the internalization of extrinsic motivation may be influenced (i.e., maintaining/increasing self-determination; Deci and Ryan, 2000, 2008a; Ryan and Deci, 2000, 2002).

Theoretical investigation using the SDT has established that self-determined motivation has positive consequences for physical activity (e.g., Dacey et al., 2008;

Standage et al., 2008). Determining if self-determined motivation differs between individuals who regularly dog walk (meeting 150 min of physical activity through dog walking) and those who infrequently dog walk will help further understand dog walking as a form of physical activity. Additionally, exploration of whether dog walking satisfies the basic psychological needs is important, because their satisfaction may facilitate forms of motivation that promote sustained activity. This investigation could be helpful as a jumping off point for deriving an intervention informed by the SDT, because a proportion of dog owners, young and old, do not walk with their dogs (Cutt et al., 2008b; Reeves et al., 2011; Thorpe et al., 2006a). The purpose of the study, then, was to investigate the differences in types of motivation between individuals who regularly walk their dogs and those who infrequently walk their dogs, as well as to determine which type(s) of motivation predict dog walking behaviour, from a sample of dog owners aged 55 and older. Additionally, interviews were conducted to explore factors, including the basic psychological needs that influenced motivation to dog-walk in a sub-sample of regular dog-walkers.

Methods

Participants and Sampling Techniques

A sample of 94 adults, aged 55 and older, were recruited after gaining ethical approval from Lakehead University’s Research Ethics Board. Participants had owned one or more dogs for a minimum of 8 months. To be included in the study, individuals had to be able to ambulate independently, which included those who were able to walk without assistance from another person or those who were

¹ More self-determined forms of motivation include intrinsic motivation, as well as integrated and identified regulations.

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able to walk with an assistive device (e.g., cane or walker). Purposive sampling techniques were used, in order to recruit individuals who possessed attributes integral to answering the research question. Snowball sampling was also used, which allowed individuals to recommend other potential participants (Trochim, 2005).

Recruitment was carried out in areas accessed by the general public, as well locations that were likely to be frequented by older individuals who owned dogs. Locations were directed toward dog owners (e.g., veterinary offices, dog training facilities, dog parks), individuals aged 55 or older (e.g., 55+ Centre, seniors' newspaper), as well as general areas (grocery store, recreation centre, the university). Finally, contacts in the community were able to recommend potential participants.

In recruitment locations, to gain permission, individuals in charge were contacted and provided with information outlining key characteristics of the study. Depending on the facility, participants were recruited at a table or by walking around the facility. If it was not feasible for the recruiting researcher to be at the facility, the location was provided with posters to display that provided contact information.

Research Design

The study employed a mixed methods design and, more specifically, a sequential strategy. Using mixed methods allowed for both qualitative and quantitative data to answer the research question (Creswell, 2003).

Procedure

Phase one - quantitative. The quantitative data provided a description

of dog-owners aged 55 and older, measured different forms of motivation, and provided basic information about dog walking behaviour in order to proceed into Phase two (qualitative inquiry). Prior to inclusion in phase one of the study, participants read an information letter and provided their consent to participate. The participant then completed the instrumentation package, which included a demographic questionnaire, Behavioural Regulations in Exercise Questionnaire-2 (BREQ-2), as well as a measure of dog walking behaviour. In situations in which the questionnaires could not be easily completed or when potential participants did not have time, consent was obtained and the instrumentation package was provided in a stamped envelope for return to the researcher when completed. Once quantitative data were collected from approximately 40 participants, preliminary analysis of the dog walking behaviour was completed, to identify regular dog-walkers who could be contacted for participation in phase two of the study.

Phase two - qualitative. Nine regular dog-walkers (>150 min·week⁻¹) participated in follow-up interviews. Interviews were conducted at the participants' homes or in an interview room at the university. Prior to the interview, the researcher reviewed the purpose, provided an information letter, gained consent for phase two, and addressed any questions. The interview process took between 30 and 60 min. An interview protocol was used to collect participant information and record field notes. Interviews were documented using an audiotape recorder, to allow for later transcription and analysis. The interview

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was transcribed, coded, and analyzed in relation to the basic psychological needs.

Instrumentation

The information package, used to collect quantitative data, included: 1) the BREQ-2 adapted for dog walking, to measure behavioural regulations for dog walking behaviour, 2) a questionnaire to collect information about dog walking practice, and 3) a questionnaire to collect demographic information from the participant (including information about his/her dog(s)). The researcher used an interview protocol in the second phase of the study to guide the interview, in order to provide a better understanding of factors such as the basic psychological needs that influenced regular dog-walkers' motivation to walk.

BREQ-2. The BREQ-2 questionnaire was developed to measure exercise behavioural regulations, based on Deci and Ryan's conceptualization of motivation. It includes intrinsic, identified, introjected, external regulation, and amotivation subscales. It has appropriate factorial validity and reliability with Cronbach's alpha values ranging from .72 to .86 (Markland and Tobin, 2004). Questions were arranged along a five-point Likert scale ranging from 0, 'Not true for me', to 4, 'Very true for me'. A scale of integrated motivation was added to the questionnaire based on development by Wilson et al. (2006). Although it was designed for the BREQ, the author of the BREQ-2 confirmed it was suitable to include (D. Markland, personal communication, December 12, 2011). To adapt its use for the study, the phrases 'walk my dog' or 'dog walking' were substituted for exercise, in order to

evaluate behavioural regulations specific to dog walking.

Dog walking behaviour. To collect a measure of dog walking behaviour of older adult dog owners, questions focused on establishing the frequency of dog walking in an average week, as well as the average duration of these walks. These two measures were used to calculate an average of weekly dog walking activity. Participants were asked to report dog walking based on more temperate conditions of the summer, as well as more extreme weather associated with the winter.

Data Analysis

Data analysis was conducted for both the quantitative and qualitative phases and subsequently interpreted in unison. An index of dog walking behaviour was calculated by summing the daily duration of dog walking sessions provided in an average week in the winter and spring/summer periods. An average of these two indices then categorized individuals as regular dog-walkers (>150 min·week⁻¹) or infrequent dog-walkers (<120 min·week⁻¹). Although there were participants who accumulated between 120 and 150 min of dog walking in an average week, these parameters were used to differentiate the groups and to allow for sufficient distinction between those who walked regularly and those who did not dog-walk or did so less frequently. Cronbach's alpha was calculated for each of the BREQ-2 subscales, in order to establish internal consistency of the scale.

A paired-samples *t*-test was used to determine if dog-walking behaviour differed from the summer to winter months. In addition, a series of

independent *t*-tests were conducted to determine if regular dog-walkers differed significantly in terms of types of motivation. If the data did not meet the assumptions of the independent samples *t*-test, determined by the Levene's test, Mann-Whitney *U* tests were used as a non-parametric alternative. Finally, a logistic regression was conducted to determine if any of the types of motivation predicted meeting 150-min of dog walking. All of the tests were interpreted using the Bonferroni adjustment, to control for increased chance of type I error, with statistical significance for each test determined at the $p < .002$ level (two-tailed significance; Vincent, 2005).

Qualitative. Information collected from semi-structured, open-ended qualitative interviews acted as a way to explore motivation to dog-walk, including the basic psychological needs. More directive questions helped explore the basic psychological needs in the context of dog walking, while other ideas that emerged during conversation added to the information gained from the directive questions. As such, thematic analysis was used, which meant reoccurring ideas were determined, by becoming acquainted with the data, coding the data, and developing, describing, and revising themes (Braun and Clarke, 2006). Sensitizing concepts provide a jumping off point to suggest routes to explore (Blumer, 1954) and the three basic psychological needs acted as sensitizing concepts during the interview process, as well as for data analysis.

Results

Sample Characteristics

The sample consisted of 94 older dog owners (65 females, 25 males, 4 individuals did not indicate their gender). The majority of participants reported ages between 55 to 69 yr (~82% of the sample). Thirty-four percent of participants fell within the 60 to 64 yr of age range, making it the largest age group in the sample. Additionally, 70% reported college or trade/vocational school level of education or higher, with 33% who reported a graduate or professional degree. The vast majority of participants lived in detached homes (90.4%), while only 6.4% of the sample lived in a townhouse and 1.1% in assisted living. Urban locations were most frequently reported and only 18 participants lived in rural areas. Almost three-quarters (71%) of the sample were married, while the remaining participants reported being separated/divorced, widowed, single, or common-law.

Internal Consistency of the BREQ-2

Cronbach's α was computed to determine internal consistency of each of the subscales. The α values, with the exception of the introjected subscale, were above 0.7 (intrinsic = 0.909, integrated = 0.892, identified = 0.754, external regulation = 0.765, amotivation = 0.791); and thus, had acceptable levels of internal consistency (George and Mallery, 2003). Although the introjected subscale was slightly lower than 0.7 (0.602), a reliability coefficient of 0.6 may be appropriate, when scales have less than ten items. A low number of items can make it more difficult to reach higher reliability coefficients (Loewenthal, 2001), and the scale only had three items. These results indicate that the BREQ-2

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had appropriate internal consistency within our sample of dog owners.

Dog walking Behaviour

The vast majority of dog owners reported some dog walking (88%). Dog owners walked an average of 5.2 days in a typical week during the warmer months ($SD = 2.47$), while they walked an average of 4.8 days in a typical week in the winter months. In addition, dog owners walked an average of approximately 247 ($SD = 176.75$) min during a typical week in the more temperate months. The time spent dog walking during a typical week in the winter months was significantly lower, with an average of 186 min ($SD = 142.22$; $t_{(92)} = 4.906$, $p < 0.002$). Both of these values were higher than the recommended level of physical activity, however, there was a large variability in the values.

Differences in Motivation Between Infrequent and Regular Dog-Walkers

In order to examine differences between individuals who do not walk or

infrequently walk their dogs and those who regularly walk their dogs (those who meet the recommended levels of physical activity through dog walking), individuals who walked less than 120 min a week were categorized as 'infrequent dog-walkers' ($n = 27$), while individuals who walked more than 150 min a week were categorized as 'regular dog-walkers' ($n = 55$). The categorization was based on the mean of the total number of min individuals walked during the winter and more temperate months combined.

The results revealed that regular dog-walkers had significantly higher levels of intrinsic motivation than infrequent dog-walkers (Table 1). Regular dog-walkers also reported higher levels of integrated and identified regulation, as well as lower levels of amotivation than infrequent dog-walkers.

Predicting Dog walking Behaviour

To examine what types of motivation might predict dog walking behaviour, a backwards regression was conducted. Each type of motivation was entered into

Table 1: Summary of Results from t-tests comparing regular and infrequent dog-walkers on the six types of motivation from the BREQ-2.

Type of Motivation	Dog-Walkers		Result	
	Regular (n = 55) M(SD)	Infrequent (n = 27) M(SD)	t/U~	p
Intrinsic	3.64(.50)	2.91(.98)	355.50~	0.000**
Integrated	2.79(1.12)	1.66(1.32)	-4.05	0.000**
Identified	3.51(.57)	2.29(1.03)	186.00~	0.000**
Amotivation	0.03(.14)	0.38(.79)	530.50~	0.001**
Introjected	1.59(.96)	1.20(1.0)	-1.71	0.091
External Regulation	0.25(.53)	0.30(.50)	0.38	0.703

Note. Possible range for scores on all subscales, except introjected, was 0 to 4. The introjected subscale could range from 0 to 3. * $p < 0.05$, ** $p < 0.002$

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the regression; however, only identified regulation was a significant predictor of dog walking behaviour. The final regression model indicated that 22% of the variance in dog walking behaviour was explained by identified regulation ($R^2 = 0.220$, $F_{(1,89)} = 25.133$, $p < .002$).

Qualitative Responses

To supplement the quantitative results, a preliminary investigation of factors that facilitate motivation was conducted, sensitized to the basic psychological needs.

Autonomy. To feel autonomous, individuals would value an activity and the performance of that activity, or the decision to engage in it, is “an expression of the self” (Ryan and Deci, 2002, p. 8). In other words, individuals who value and enjoy an activity are more likely to have higher levels of autonomy. It appeared that regular dog-walkers felt a sense of autonomy in dog walking behaviour. Individuals appreciated the benefits associated with dog walking and felt it was a valuable activity, which they enjoyed participating in. Below are selections that suggest participants’ experienced autonomy.

“It’s something I enjoy doing-walking. And it’s nice to have a furry guy beside you.”- P4

“Oh sure. Absolutely. It gives you quality time with your pet. You know one on one time with your pet (although she does run off on us). She goes and does her own exploring and then we do our own exploring...”-P1

“I guess if I think of comparing with a dog to walking without a dog, I much prefer walking with a dog...It’s just an enjoyable event that I partake in

whenever it’s necessary, whenever it’s desired.”-P2

“Well he’s such a character for starters and I love walking myself, so it’s an excuse for me to get out. He pushes me to go out walking. I see things that I perhaps might not see if I was not with him. And he’s a real pleasure to be around. Yeah it’s a really enjoyable experience.”-P5

Competence. To feel competent, individuals need to feel that they are successful in realizing the tasks they do, or that they have a “sense of confidence and effectance in action” (Ryan and Deci, 2002, p. 7). Quotations from participants reflect that dog walking does, in some cases, make individuals feel that they have achieved something. Also, most of the participants discussed how it was their role as an owner to walk their dog(s) and it was evident that they felt their dog(s) enjoyed and needed this activity, regardless of season. The following quotations are some examples of competence within the context of dog walking.

“I suppose in a way it does because I’ve gone out and I’ve walked the dog. I mean I could have easily said no we’re not going. So I’ve gotten off my butt and I’ve actually walked and gone out. Yeah I guess there is a sense of accomplishment there- you know, I’ve done something.”- P1

“There’s a sense of pleasure when you’ve done that golf course when it’s minus 25- not pleasure, achievement. There’s no pleasure at minus 25 with a wind chill. So a sense of achievement when I’ve gone all the way around and got back. And he comes in here and he’s pumped. You know, we’ve had a good walk- I’m pleased we have done it.”-P5

“There’s a feeling of accomplishment in everything you do. Every different thing that you do with your dog. Every bit of communication you have with your dog. It’s an alien species that you are relating to. That’s satisfying!”-P7

Relatedness. Finally, relatedness makes individuals feel that they are able to “connect with and be integral to and accepted by others” (Ryan and Deci, 2002, p. 7). The group of regular dog-walkers interviewed portrayed feelings of relatedness to their dogs, to their friends, to their significant other, and to informal contacts in the community. It was evident that owners felt companionship with their dog(s) during and outside of dog walking and that dog walking brought them into contact with others. The following quotations provide examples of relatedness.

“With a dog you have a companion with you almost, you know. She’s, in my case, she’s a very loyal dog and she listens. Yeah it’s just having a companion-it’s almost as if you’re not doing it on your own. And it’s always nicer to do things with a companion and she is.”-P2

“Can’t help [interacting with other people] when you’ve got a dog [laughs]. Oh yeah. A lot of the people I know, you see the same people all the time that are out there, you know.”-P6

“So it’s actually been, in an interesting way, a way of integrating into the neighbourhood. We don’t necessarily know each other’s names, but we know all the dogs’ names. So it’s also a positive social thing in terms of the connection to the community or the neighbourhood.”-P8

Discussion **Motivation Differences between Infrequent and Regular Dog-Walkers**

Evidence indicated that regular dog-walkers had significantly higher levels of intrinsic, integrated, and identified forms of motivation, while they had significantly lower levels of amotivation. In other words, regular dog-walkers had higher levels of motivation that reflected enjoyment and value of, as well as interest in dog walking. The motivational differences were congruent with what one would expect based on the SDT. Self-determination, conceptualized in the SDT, can play an important role in the engagement and maintenance of behaviour (Stephan et al., 2010). Maintenance of an activity, for example, may be most effective when an activity is pursued solely for pleasure or satisfaction (Kilpatrick et al., 2002). Older adults who exercised, for instance, had significantly higher levels of intrinsic motivation and self-determined extrinsic motivation than older adults who did not exercise (Kirkland et al., 2011). Additionally, regular dog-walkers had lower levels of amotivation, which is logical since amotivation means an individual is not geared towards action (Deci and Ryan, 2000, 2008a; Ryan and Deci, 2000, 2002). Infrequent dog-walkers had higher levels of amotivation, which reflects their lack of dog walking or orientation to dog-walk.

Results from the regression analysis supplement the previous findings. The regression revealed that identified regulation was a significant predictor of dog walking behaviour, which indicated that acknowledging the associated benefit or the value it holds may be important to this behaviour (Deci and Ryan, 2000, 2008a; Ryan and Deci, 2000, 2002). The influence of this specific regulation is

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logical and supported by the participants who completed the qualitative interviews who suggested that one of the reasons they engaged in dog walking was due to benefits for themselves and their dog(s). Owners recognized the importance of dog walking activity, which ultimately influenced their behaviour. The quantitative and qualitative data supported that the older dog-walkers were autonomous in their decisions to dog-walk, yet the decision also was mediated by the values they believed dog walking possessed.

Given the findings that regular dog-walkers had higher levels of self-determined forms of motivation and lower levels of amotivation than those who dog-walked infrequently, it would be desirable to develop theoretically-informed interventions to increase self-determination for dog walking. As Cutt et al. (2008b) recognized, meeting recommended amounts of walking would rise, if individuals who do not walk their dogs had even modest increases in this behaviour. Such an intervention, if successful, could help support dog owners in acquiring beneficial levels of activity. Since the SDT proposes that fostering the three basic psychological needs, aid processes that can enhance self-determination (Deci and Ryan, 2000, 2008a; Ryan and Deci, 2000, 2002), qualitative investigation to explore these factors within a group of regular dog-walkers helped flesh out if the basic psychological needs are relevant to and being fulfilled through this activity. Interviews allowed for an exploration of motivation to dog-walk, sensitized to basic psychological needs satisfaction in dog walking.

It was evident that regular dog-walkers, in general, presented ideas and

feelings that indicated they felt autonomous, competent, and a sense of relatedness. Although further investigation is necessary to support these findings, these initial results did illustrate that regular dog-walkers greatly enjoyed the activity. Participants expressed emphatically that owning a dog influenced them to walk and that it was an activity they believed was good for themselves and their dogs. This is a significant consideration, because external influence does not preclude autonomy, rather “one can quite autonomously enact values and behaviors that others have requested or put forward, provided one congruently endorses them” (Ryan and Deci, 2002, p. 8). In addition, some of the individuals reported feelings of goal achievement or satisfaction that they had accomplished something. Many individuals felt that their dog(s) enjoyed walking and indicated that it was important to ensure their dogs were walked for their dog’s health and well-being. Positive feedback from one’s dog and feeling a sense of achievement could reinforce competence towards dog walking. Finally, participants relayed that dog walking was a way to connect with their dog, to spend time with a friend or family member, or to interact with other individuals in the community. Dogs can facilitate contact with people outside of one’s direct social contact (McNicholas and Collis, 2000), which was highlighted in the interviews. Participants, however, noted that walks were enjoyable whether or not they encountered other people. They did express that they were content to walk alone with their dogs and felt their dogs acted as companions on their walks.

Dog Walking Behaviour in Older Adulthood

To get a better sense of dog walking throughout the year, in a climate that has very distinct summer and winter seasons, the current study differentiated between minutes walked in the more temperate compared to the winter months. Both of the mean values of dog walking (247-min in temperate months and 186-min during winter months) met WHO's (2011) guidelines for physical activity, in terms of duration. Regardless of a significant decrease from the summer to winter months, these dog owners walked large amounts. Dog walking in the present study was similar to values found in a Californian study. Dog owners walked approximately 140-min a week when the whole sample was considered and 186-min when solely dog-walkers were included (Hoerster et al., 2011). It appears the older dog owners in this sample had similar to slightly higher levels of dog walking those from individuals in the Californian sample. The older dog owners walked a great deal throughout the week, which was a positive finding, considering the current level of inactivity in Canada.

Again, there was a significant decrease in dog walking behaviour from summer to winter months, but both values were high enough to satisfy the advised level of physical activity. A study conducted in Calgary illustrated that dog owners walked 253-min for recreation during the winter and walked 213-min weekly in the summer, while individuals who did not own dogs decreased time walked from summer to winter months (Lail et al., 2011). A comparison to the values obtained from the older dog owners in this study was difficult, however, because the current study

simply measured dog walking behaviour, while the study conducted in Calgary looked at all walking for recreation (which included dog walking). Despite a decrease in dog walking during the winter months, it was evident that dog walking was a way for dog owners to maintain levels of physical activity throughout the year. During the interviews, many of the participants indicated that they walked consistently with their dogs because of the routine, the role of being an owner, and the benefits to both parties. A systematic review by Tucker and Gilliland (2007) highlighted that physical activity can be impacted by season; specifically, inclement months can impede physical activity. It appeared that owning a dog helped older dog owners to overcome the hindrance of poor weather conditions associated with winter months, helping to promote continuity to physical activity.

Furthermore, a very large proportion of the sample engaged in some level of dog walking. Evidence revealed that 88% of the sample walked their dogs. It was evident that the majority of these older dog owners walked their dog to some degree, which is a critical point to consider. Regardless of the number of minutes each week these dog owners completed, the vast majority took some time during their week to get outside and be active with their dogs.

Conclusions

The results from this study illustrated that individuals who regularly walked their dogs reported significantly higher levels of self-determined forms of motivation (intrinsic, integrated, and identified) and lower levels of amotivation, than those who did not walk their dogs or did so infrequently. Additionally, identified regulation was

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found to be a significant predictor of dog walking behaviour. These results provided valuable information about the application of the SDT to the context of dog walking in older adulthood. The differences observed in self-determined motivation and amotivation between the two groups supported what one would expect based on the theory, as well as previous investigation into motivation in physical activity. In other words, individuals who engage in greater levels of physical activity are more apt to have higher levels of self-determined forms of motivation, than individuals who do not engage in physical activity or do so at lower levels; a finding that has been supported in a sample of older adults (Kirkland et al., 2011).

In addition to support for the application of the SDT to dog walking in a sample of older adults, the results supplied beneficial information for practical application. The knowledge that these two groups differed in levels of self-determined motivation indicated an avenue to be explored when trying to increase dog-walking behaviour. The results suggested that promoting intrinsic motivation and self-determined extrinsic motivation (integrated and identified regulation), may help encourage individuals who dog-walk less frequently to become more regular dog-walkers. Since identified regulation was found to significantly predict dog walking behaviour, it was highlighted that recognizing the value of this behaviour was of particular importance to dog walking in older adulthood. Promoting the values associated with dog walking will be an important area to address when encouraging individuals who do not dog walk to initiate this activity. Looking at factors proposed to promote these

forms of motivation such as basic psychological needs, then, is a logical stepping-stone toward intervention. The interviews were advantageous inclusions given the previous findings, as we were able to learn more from regular dog-walkers about their motivation to dog-walk, and to explore whether the basic psychological needs were satisfied, as well as how they applied to the dog walking context.

The interviews suggested that autonomy, competence, and relatedness were relevant to regular dog-walkers. Participants discussed the bond that they have with their dogs, that dog walking served as an activity to engage in with one's partner or family, and that informal contacts were encountered within the community while dog walking. Additionally, some regular dog-walkers felt a sense of satisfaction or accomplishment after their walks, or were motivated because they knew their dogs enjoyed and benefited from the physical activity. Dog walking was viewed as a valuable activity to engage in to help promote health and well-being of both owner and dog, a way to relax, and method to maintain a physical activity routine during the summer and winter. The interview data supplemented the quantitative data by providing an initial understanding of factors that could be used to support the types of motivation, ideally leading to maintained dog walking.

In addition to further clarifying basic psychological needs satisfaction in older adult regular dog-walkers, interviewing infrequent dog-walkers is a reasonable next step in the pursuit of understanding motivation and dog walking behaviour. Understanding lower levels of self-determined forms of motivation and higher levels of amotivation may be

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helpful when determining ways to promote dog walking. The results of this study highlighted that older dog owners, on average, walked a great deal during the summer and winter months. There were, however, individuals who did not dog-walk or did so less frequently. Dog walking should be looked at as a tool to promote consistent physical activity for dog owners throughout the aging process. Increasing dog walking of infrequent dog-walkers will help promote dog-walking behaviour that satisfies or exceeds the recommended levels of physical activity, which ultimately influences health and well-being for both the human and dog.

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Authors' Qualifications

The authors' qualifications are: Ashley E. Hope MSc, HBK (Hons); Jocelyn (Joey) M. Farrell PhD, MA, BSc (Hons); Sandi J. Spaulding PhD, MSc, BSc (OT).

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