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Get in Motion: An Evaluation of the Reach and Effectiveness of a Physical Activity
Telephone Counseling Service for Canadians Living with Spinal Cord Injury

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24 **Abstract**

25 **Background:** Telephone-based counseling is an efficacious intervention strategy for
26 maintaining leisure-time physical activity (LTPA) intentions and increasing LTPA
27 behavior among adults with spinal cord injury (SCI). However, no research has examined
28 the real-world application of this intervention strategy within the SCI community.

29 **Objective:** To assess the individual-level impact of a previously tested telephone-
30 based counselling intervention among adults within the SCI community, using the first
31 two components of Glasgow et al.'s Reach, Effectiveness, Adoption, Implementation,
32 and Maintenance (RE-AIM) framework.

33 **Design:** Prospective study

34 **Setting:** General community, tertiary care.

35 **Participants:** Community-dwelling adults with SCI ($N = 65$; 57% male, mean age
36 $\pm$ SD, 50.4 ± 12.8 yrs; mean years postinjury $\pm$ SD, 14.5 ± 12.7 yrs) living in Canada who
37 enrolled in a national telephone-based counseling service. Of the 65 clients who enrolled,
38 53 participated in the effectiveness evaluation component of the Get in Motion service.

39 **Intervention:** A 6-month, individualized telephone-counseling program with a
40 trained exercise counselor. The program was based on a previously tested intervention
41 that used aspects of the Health Action Process Approach model, with a particular focus
42 on developing and strengthening clients' social cognitions for engaging in self-managed
43 LTPA.

44 **Main Outcome Measures:** Upon enrolment, all 65 clients completed
45 demographics and staging questionnaires. The 53 clients participating in the
46 effectiveness evaluation also completed a validated LTPA intentions item, and the 7-day,

self-report LTPA Questionnaire for People with SCI [LTPAQ-SCI] over the telephone at baseline, 2-, 4-, and 6-months.

Results: In terms of the reach of Get in Motion, a total of 65 clients enrolled in the service between June 2008 and June 2011, and were representative of the larger Canadian SCI population on most measured demographic characteristics. Evaluation of the effectiveness of the service showed that, as hypothesized, intentions for engaging in LTPA remained high throughout enrolment ($p = .44$), with a trend for more clients engaging in moderate-to-heavy intensity LTPA at 6-months (52%) versus baseline (35%; $p = .09$)

Conclusions: Telephone-based counseling is a promising strategy for promoting community-based LTPA behavior among Canadian adults with SCI. Continued evaluation of all five RE-AIM components of Get in Motion will help establish the real-world impact of this intervention strategy on community-based LTPA participation within the SCI population.

Keywords: Exercise; Spinal cord injuries; Counseling; Program evaluation

71
72 Leisure-time physical activity (LTPA) improves health and quality of life among
73 persons with spinal cord injury (SCI).^{1,2} Unfortunately, most of this population does not
74 engage in LTPA at sufficient levels to achieve these benefits.³ Lack of knowledge,
75 motivation, and resources are common barriers hindering participation for persons with
76 SCI.⁴ Providing LTPA informational and support services are essential for influencing
77 knowledge, skills, and participation in LTPA, and should be a priority for the SCI
78 community.

79 One emerging informational and support delivery strategy is telehealth, which uses
80 telecommunications strategies to support long-distance health care and education.⁵
81 Telephone-based counseling is an example of a telehealth service and provides several
82 advantages over traditional face-to-face counseling. For example, telephone-based
83 counseling has the potential for wide population reach because the telephone is the most
84 widely available communication medium,⁶ and does not require any travel on the part of
85 the user or provider. It also facilitates on-going patient education, which is essential for
86 the management of chronic conditions and maintenance of healthy behaviors.⁷ Thus,
87 telephone-based counseling has the potential to increase LTPA participation as it can
88 mitigate the barriers of accessing LTPA education and counseling among individuals
89 with SCI.

90 Several literature reviews have assessed the utility of telephone-based counseling
91 for promoting LTPA among symptomatic and asymptomatic populations within a variety
92 of settings.^{6,8,9,10} These reviews suggest that telephone-based counseling has a highly
93 variable reach, and leads to medium-sized intervention effects for LTPA-related

94 outcomes.^{6,9} Less emphasis has been devoted to examining the utility of telephone-based
95 counseling for promoting community-based LTPA among persons with a physical
96 disability. However, telephone-mediated health promotion counseling has been shown to
97 lead to increases in LTPA among individuals with multiple sclerosis,¹¹ suggesting this
98 type of intervention strategy may be useful among individuals with other physical
99 disabilities.

100 Two randomized controlled trials (RCTs) conducted by our research team have
101 demonstrated the efficacy of telephone-based counseling for promoting LTPA intentions
102 and behavior among individuals with SCI.^{12,13} In both RCTs, the experimental groups
103 who received LTPA telephone counseling reported greater post-intervention LTPA
104 behavior compared to controls. The first RCT¹² also showed that telephone counseling
105 helped to sustain positive intentions for engaging in LTPA, whereas control participants'
106 intentions waned over time. These findings suggest that telephone-based counseling may
107 be a promising intervention strategy for maintaining LTPA intentions and increasing
108 LTPA behavior in the SCI community. However, no research has determined the real-
109 world application of this intervention strategy among community-dwelling individuals
110 with SCI.

111 In order to address this research to practice gap, SCI Action Canada, a community-
112 university research alliance that aims to develop and mobilize strategies to increase
113 LTPA participation in the SCI community,¹⁴ established Get in Motion in June 2008. Get
114 in Motion the first service of its kind, is a community-based telephone LTPA counseling
115 service that is based on the LTPA telephone counseling intervention framework tested in
116 our earlier RCTs.^{12,13} Get in Motion was implemented nation-wide at no cost to all

Canadian adults with SCI to provide informational and motivational support for initiating and maintaining a regular LTPA routine within the community. The current study sought to evaluate the individual-level impact of the telephone-based counseling intervention strategy among those clients who enrolled in the Get in Motion service between June 2008 and June 2011.

The evaluation of the Get in Motion service was conducted using the first two components of a well-established knowledge translation framework called RE-AIM (i.e., Reach, Effectiveness, Adoption, Implementation, and Maintenance).¹⁵ RE-AIM was developed to evaluate the external validity of controlled intervention strategies to improve “the sustainable adoption and implementation of effective, generalizable, and evidence-based interventions”.¹⁶ According to the framework, external validity of an intervention is a function of five elements (reach, efficacy, adoption, implementation, and maintenance).^{15,16} *Reach* is an individual-level measure of participation that examines the absolute number, proportion, and representativeness (characteristics) of the target population. *Efficacy* measures the individual-level impact of an intervention on important positive and (potentially) negative outcomes. *Adoption* refers to the absolute number, proportion, and representativeness of settings that initiate a given intervention. *Implementation* measures an interventionist’s fidelity to the intended protocol as well as the participants’ use of the intervention strategies. *Maintenance*, the final factor, consists of both individual and institutional components. At the individual level, maintenance refers to the long-term (≥ 6 months) intervention effects on measured outcomes. At the institutional level, maintenance concerns the extent to which an intervention has been implemented into standard practice or policy.^{15,16} RE-AIM has been consistently shown

to be useful in the evaluation of LTPA-enhancing interventions,¹⁷ thus it was deemed an appropriate framework for evaluating the individual-level impact of the Get in Motion service within the SCI community.

For the current study, we examined both the reach (i.e., absolute number and representativeness) of the Get in Motion service across Canada and its effectiveness on LTPA intentions and behavior among adults with SCI. In terms of reach, we hypothesized that the Get in Motion clientele would be representative of the larger Canadian SCI population on all key demographic variables. In terms of effectiveness, we predicted that Get in Motion clients would report high intentions at baseline, and that these high intentions would be sustained throughout enrolment.¹² Also consistent with our RCT evidence,^{12,13} we hypothesized that moderate and heavy-intensity LTPA behavior would increase during clients' 6-month enrolment in the service.

Methods

Client Recruitment

A variety of methods were used to advertise the service to potential clients, such as public announcements at events hosted by the SCI Action Canada research team, a Get in Motion webpage hosted on the SCI Action Canada website, printed advertisements in SCI-relevant Canadian publications, and word of mouth. A partnership was also formed between SCI Action Canada and an Ontario-based organization for individuals with SCI, which resulted in the distribution of Get in Motion advertising cards to all its new members, and during selected events. Participants from studies conducted by SCI Action

Canada researchers were also provided with information about the service upon study completion. Informed consent was obtained from all participants, and the study was approved by the institutional Research Ethics Board.

Protocol

Initial telephone meeting. Interested clients contacted the service coordinator via the toll-free service phone number, email, or postal mail. Clients underwent an initial 15-minute session with the coordinator, which involved administration of a demographic questionnaire and scheduling of the first telephone counseling session. Clients were then invited to participate in the effectiveness evaluation. For those interested, verbal consent was obtained and a follow-up interview was scheduled with a research assistant. A Welcome Package was then mailed to each client consisting of two elastic resistance bands (Thera-Band®) and instruction guide, an exercise safety tip sheet, tips and strategies for meeting LTPA goals, and an activity intensity classification chart.¹⁸

Baseline evaluation of the effectiveness of Get in Motion. Individuals who agreed to participate in the evaluation of the effectiveness of Get in Motion were contacted by a research assistant 1-2 weeks following the initial telephone meeting but prior to their first counseling session. The outcome measures were administered as follows:

Intentions. Intentions were measured with the item “I intend to do at least 30 minutes of moderate to heavy-intensity LTPA on most days of the week over the next 2 months.”¹⁹ Responses ranged from 1 (*extremely unlikely*) to 7 (*extremely likely*), with

higher values indicating greater intentions to engage in moderate to heavy-intensity LTPA.

LTPA Behavior. The 7-day, self-report LTPA Questionnaire for People with SCI²⁰ assessed moderate and heavy-intensity LTPA behavior. Examples of moderate and heavy-intensity LTPA include brisk wheeling, hand cycling, strength-training, and chair aerobics. This instrument has shown acceptable test-retest reliability and construct validity in previous research.²⁰ Given the high standard deviations typically reported for LTPA behavior in the SCI population,²¹ behavior was treated as a categorical variable.²² Specifically, we calculated the number of clients who were regularly active (i.e., reported engaging in ≥ 30 mins of moderate to heavy-intensity LTPA, on ≥ 3 days/week)^{19,23} at baseline, 2-, 4-, and 6-months.

Telephone-based counseling. All counseling sessions were delivered over the phone by an exercise counselor who had extensive experience in developing community-based LTPA programs for persons with SCI, and training in motivational interviewing and behavior change theory. The Health Action Process Approach (HAPA)²⁴ model was used as the underlying theoretical framework for the Get in Motion service, with a particular focus on developing and strengthening clients' social cognitions for engaging in self-managed LTPA. The HAPA distinguishes between two phases of behaviour change,²⁴ where different social-cognitive predictors may emerge. The pre-intentional motivation phase captures a set of beliefs that are predictive of one's intentions to perform a specific behavior (e.g., outcome expectancies and task self-efficacy), while the post-intentional volition phase focuses on the self-regulatory strategies needed to plan, initiate, and

maintain the behavior (e.g., action and coping planning). The HAPA framework and the social cognitive behavior change strategies used with clients were based on a telephone intervention tested in two earlier RCTs.^{12,13} Table 1 describes the components of the previously tested telephone counseling intervention and the modifications our research team made, in consultation with anecdotal feedback obtained from participants who took part in the RCTs, to develop the Get in Motion telephone counseling service. Overall, the adaptations that were made to the previously tested intervention consisted of broadening the reach of the target audience from only intenders to all three HAPA stage of change categories; lengthening the duration of the counseling program from 8-10 weeks to 6 months, and providing participants with more contact time with the counselor (i.e., from 2-3 interactions with the counsellor in the tested intervention to a possible 14 interactions in the Get in Motion service). Table 2 outlines the HAPA-based topics and examples of content discussed during the counseling sessions in the Get in Motion service based on an individual's pre-determined stage of change (assessed at baseline). Topics noted within the intender HAPA stage of change category are consistent with those that were discussed in the counseling intervention tested in the two earlier RCTs.^{12,13}

During the first counseling session, the counselor discussed the contents of the Welcome Package. Next, the counselor outlined the standard service contract, where participants would receive a counseling call weekly for the first two months, biweekly for months 2 to 4, and then monthly for months 4 to 6. If requested, this counseling frequency was adjusted to meet the client's scheduling needs.

A 1-item staging questionnaire (adapted from²⁵) was administered during the first counseling session to classify clients into one of the three HAPA stages of change (i.e.,

non-intenders [no intentions to be active over the next 6 months], intenders [intend to be active over the next 6 months], and actors [currently active]),²⁴ based on their current engagement in moderate to heavy LTPA. The remaining counseling sessions were tailored to the clients' HAPA stage of change, where the counselor used a specifically-designed manual which focused on the key social cognitive variables that are important for behavior change in that stage (see Table 2).^{12,13,25} Clients were encouraged to follow their counseling contract, with appointments being scheduled at a mutually convenient time.

Follow-up effectiveness evaluation. At months 2, 4, and 6, a research assistant administered the intentions and behavior measures by telephone, separate from the counseling sessions.

Statistical Analysis

Reach. Two of the RE-AIM measures of reach (i.e., absolute number and representativeness of target population)¹⁵ were examined in the current study. Descriptive statistics were used to examine measured characteristics of all clients who enrolled in the service up to June 2011. Client representativeness was assessed by descriptively comparing client characteristics with those of the Canadian adult SCI population using national reports.^{26,27,28}

Effectiveness. Demographic characteristics of 1) clients who opted to enrol ($n = 53$) versus opted not ($n = 12$) to enrol in the effectiveness evaluation of the Get in Motion

service, and 2) participants in the effectiveness evaluation who had complete ($n = 32$) versus missing data ($n = 21$) for the four assessment periods were compared using independent samples t -tests for continuous variables, and chi-square analysis for dichotomized variables.

The effectiveness of the Get in Motion service was examined among the 53 clients who volunteered to participate in the effectiveness evaluation (see Figure 1 for a flow chart of client retention in the Get in Motion service). Because of the nature of the Get in Motion service, clients who withdrew before the end of the 6-month period had missing data. Clients who only completed their baseline assessment ($n=7$) were removed, therefore reducing the sample size for the effectiveness analyses from 53 to 46 participants. All data were screened for outliers, using established guidelines,²² as well as for missing values. Complete data were available for 100%, 100%, 87% and 70% of the 46 participants at 0-, 2-, 4-, and 6-months, respectively (Figure 1). Missing value analysis indicated that data were missing at random for both the intentions and behavior measures at all four time points. Missing data were imputed for months 4 and 6 only using the expectation maximization (EM) method²⁹ prior to conducting subsequent analyses.

Repeated measures ANOVAs were used to examine change in intentions over time. McNemar tests were used to test for significant changes in the proportion of clients who were regularly active at baseline compared with 2-, 4-, or 6-months.

Results

Reach

A total of 65 adults with SCI enrolled in the service from June 2008 to June 2011. Table 3 displays clients' demographic characteristics as well as characteristics of the Canadian SCI population.^{26,27,28} Overall, the 65 clients were representative of the Canadian adult SCI population on all measured demographic variables except for sex and geographic location,²⁸ with the sample having a greater proportion of females (43%) and residents from Central Canada, in particular Ontario (62%) than the Canadian SCI population.²⁸ A lower proportion of clients were from Eastern Canada in comparison to the Canadian SCI population (5.7% vs. 34%, respectively).

Results also indicated a greater percentage of individuals who participated in the effectiveness evaluation had post-secondary education (77%) compared to those who chose not to participate (22%; $\chi^2(1) = 10.70, p = .001$). Among the clients who participated in the effectiveness evaluation, those who had complete data for all four assessment periods were significantly older ($M = 54.97 \pm 11.44$ years) than participants who had missing data ($M = 46.60 \pm 9.42$ years; $t(48) = 2.71, p = .009$). No other significant group differences were found on the measured demographics (all $ps > .13$).

Effectiveness

Clients' intentions for engaging in regular LTPA started high (i.e., $M = 4.54, SD = 2.00$, out of a possible score of 7) and were sustained over the 6-month period ($F(3,135) = 0.91, p = .44$, Cohen's $ds = .02$ to $.20$). Although not statistically significant, there was an increase in the percentage of clients who were regularly active at baseline (35%) vs. 4 months (48%; McNemar's $\chi^2(1) = 2.25, p = .13$) and 6 months (52%; McNemar's $\chi^2(1) =$

2.91, $p = .09$). See Table 4 for complete descriptive statistics of the effectiveness measures across the four time points.

Discussion

In partial support of our hypothesis, the 65 clients who enrolled in the service between June 2008 and June 2011 were representative of the larger Canadian adult SCI population^{26,27,28} on all measured demographic variables except sex and geographical location. These findings are not particularly surprising given the higher proportion of females versus males that typically use health-care services,³⁰ and the predominance of Ontario-based promotional and recruitment strategies we used for the service during this time period. These Ontario-based marketing strategies included the distribution of Get in Motion advertising cards to all new members of Get in Motion (an Ontario-based organization), as well as invited public announcements made by our research team at the Ontario-based events hosted by this organization. The lower proportion of clients from the Eastern Canadian region was a finding that was perhaps to be expected given that the service is only offered in English, while many residents in Eastern Canada speak French, particularly in Québec. Recognizing this potential language-related service barrier, our research team has since been involved with the development and implementation of a counseling service offered to residents with physical disabilities living in Québec city. To ensure the Get in Motion service has a broader reach that is fully representative of the larger Canadian adult SCI population, future efforts should be placed on targeting male clients and promoting the service in other provinces.

Unfortunately, it was not possible to determine the exact proportion of the target population reached from the potential Canadian adult SCI population. As with the initially tested telephone counseling intervention,^{12,13} the Get in Motion service was primarily designed to assist clients with initiating an LTPA program over the phone (classified as ‘intenders’ using the HAPA stage of change²⁴). Currently there is a lack of information on the total number of Canadian adults with SCI who fit this intender profile, which meant that the proportional analysis of reach in the RE-AIM framework¹⁵ could not be conducted in our analyses. However, a recent study classified 25% of its sample of 238 individuals with SCI as intenders.³¹ Furthermore, unpublished findings from a RE-AIM evaluation study of our larger SCI research initiative which the Get in Motion service is a part (called SCI Action Canada), indicated that the resources and services from the SCI Action Canada initiative have reached 3% of the 86,000 Canadian adults with SCI (~2,550 Canadian adults with SCI; Sweet et al. (2014). Operationalizing the RE-AIM framework to evaluate the impact of multi-sector partnerships). Based on the aforementioned values, a target estimate for the Get in Motion service was determined to be 637 Canadians with SCI. Since the absolute number of Canadians with SCI who were reached by the Get in Motion service was 65, this would suggest an *estimated* proportional reach of 10%. Further work is underway to establish a more rigorous procedure for tracking the potential number of Canadian adults with SCI who are interested in using the Get in Motion service. This tracking system will provide a more definitive proportion of the target population reached from the ‘potential’ Canadian adult SCI population in future research.

With respect to the effectiveness analyses, our hypotheses concerning LTPA intentions were supported. That is, at enrolment, clients reported high scores on the intentions scale ($M = 4.54$ on a 7-point scale), and there was no significant change in intentions over the course of enrolment. This is not surprising given that the majority of clients in the effectiveness evaluation were classified as either intenders (40%) or actors (58%) at enrolment. According to the HAPA model,²⁴ both intenders and actors already have the intention to engage in LTPA. Echoing our previous RCT findings,¹² the telephone contact that the clients had as a result of participating in the Get in Motion service may have maintained their high motivation to engage in regular LTPA.

Our hypothesis with respect to LTPA behavior was not fully supported. Although there was a 50% increase in the proportion of clients enrolled in the effectiveness evaluation study who were active at the end of the 6-month period compared to baseline, this increase did not achieve statistical significance ($p=.09$). This finding was in contrast to the significant increases in moderate to heavy-intensity LTPA that were reported in our two previous RCTs. One potential explanation for this difference is the HAPA stage of change of participants involved in the two RCTs versus the Get in Motion service. Specifically, all participants in the RCTs intended to change their LTPA behavior, but were inactive at baseline (classified intenders), while there was an equal split of Get in Motion clients who were classified as intenders or actors (i.e., those who had already initiated their intended LTPA behavior). Indeed, over one-third (34%) of the Get in Motion clients were active at baseline, suggesting that a significant proportion of the

sample was already engaging in regular moderate to heavy-intensity LTPA.¹ Nevertheless, the current findings have important clinical significance. In a relatively short time period, a substantial proportion of clients were able to increase their moderate to heavy-intensity LTPA behavior to levels known to have fitness benefits for persons with SCI.¹ From a population health perspective, these results also speak to the real-world impact of telephone-based counseling on LTPA promotion in a population that is particularly susceptible to a variety of inactivity-related chronic diseases.³²

Study Limitations

First, we assessed the individual level impact of the service; thus, we were unable to provide a complete RE-AIM evaluation of the Get in Motion service.¹⁵ For example, because fidelity to the counseling protocol was not initially monitored, we do not have counseling adherence (i.e., Implementation) data for clients. Based on previous research, adherence to such behavioral interventions is often less than 50%.³³ Given that clients could request a change in the standard counseling frequency to meet their individual schedules and needs, it is likely clients had variable exposure to the Get in Motion

¹ In response to an anonymous reviewer's suggestion, we split the client sample into intenders and actors, and compared the percentage of regularly active clients between baseline and 6 months in each group. When only considering self-identified "intenders", the percentage of clients who were regularly active increased from 16% at baseline to 37% at 6 months; however, this is not significant (McNemar $\chi^2=2.00$, $p=.16$). When only considering self-identified "actors", the percentage of clients who were regularly active increased from 52% at baseline to 70% at 6 months; again, this increase is not significant (McNemar $\chi^2=1.33$, $p=.25$). Thus, the increase in the percentage of regularly active clients is similar across actors and intenders, as well as when considering both groups together. These findings are encouraging and suggest that the Get in Motion service is beneficial for increasing LTPA participation among *both* intenders and actors, and that both groups of clients should continue to be enrolled in the service. We thank the reviewer for his/her suggestion.

service, which may influence individual-level effectiveness. Also, as there was no follow-up past 6 months, we are unable to assess the longer-term impact (i.e., Maintenance) of the service on the measured outcomes. Second, the effectiveness measures relating to intentions and behavior were only administered to clients enrolled in the effectiveness evaluation. It is unknown whether those who opted out had a similar pattern for LTPA intentions and behavior. Third, the 2008-2011 phase of the service preceded the release of the Physical Activity Guidelines for Adults with SCI.³⁴ Hence, the LTPA behavior outcome is not consistent with these Guidelines since it was based on earlier research.^{19,23} Fourth, other unmeasured confounding factors, such as ethnicity, may have influenced some clients' willingness to participate in the effectiveness evaluation; therefore, the findings may not generalize to all Get in Motion clients.

Lessons Learned and Next Steps for Get in Motion

In July 2011, our research team modified the service evaluation approach. By incorporating the RE-AIM framework¹⁵ into the design and protocol of the service, a prospective test of all five of the RE-AIM components is currently underway. The following modifications were made to the service's protocol to ensure a more comprehensive quality evaluation of Get in Motion:

Reach. SCI Action Canada has been actively disseminating the Physical Activity Guidelines for Adults with SCI³⁴ and the SCI Get Fit Toolkit³⁵ across Canada. Get in Motion is promoted as a means to achieve the Guidelines and information on how to contact the Get in Motion service is provided in the SCI Get Fit Toolkit. More rigorous promotional strategies are also being used to reach out to consumers living in other

Canadian provinces such as forming strong partnerships with SCI-related organizations and researchers outside of Ontario.¹⁴ A rigorous tracking system has since been implemented by our research staff to provide a) more detailed information on the various recruitment/promotional strategies and b) a more accurate value to be used to calculate the proportion of the target population reached by the service in future research.

Effectiveness. The administration and content of the effectiveness measures have been revised. For example, we obtain client consent to administer the LTPA intentions and behavior measures during the baseline, 2-, 4-, and 6-month counseling sessions so that these primary outcomes are obtained for all clients. We have also included measures to assess any negative consequences and quality of life outcomes associated with participation in the service.

Adoption. SCI Action Canada has since partnered with a Quebec-based organization, which offers a similar telephone-based counseling service to French-speaking adults with physical disabilities living in Quebec. This program uses a similar protocol to the modified version of Get in Motion, which will allow for differences in adoption to be assessed, as well as enhancement of the reach of the service to consumers living in Quebec.

Implementation. Checklists have been created for all counseling sessions to monitor fidelity to the service protocol, as well as the frequency, duration, and content of sessions. These checklists will assist with ascertaining the intervention dose, as well as tracking time spent counseling for future cost-analysis of the Get in Motion service. These costs

would include such resources as the production and distribution of advertisement cards and the service's Welcome Package, the monthly fee for the service's toll-free telephone line, the development and maintenance of the service's website, staff training, and the delivery of the counseling sessions. Also, clients and the counselor now have the opportunity to provide qualitative feedback on their experience and satisfaction with the service. Together, this information will provide greater context to the effectiveness and implementation data that is collected.

Maintenance. Six months after their final counseling session, all consenting clients are now contacted by the coordinator to gather information on their current LTPA intentions and behavior. These data will be used to assess the lasting impact of the service among clients once contact with the counselor ceases.

Conclusions

Telephone-based counseling is a promising strategy for promoting community-based LTPA behavior among Canadian adults with SCI. With more rigorous promotional strategies, Get in Motion has the potential to reach a larger representative number of adults with SCI across Canada. Future research is underway to provide a more thorough evaluation of all five RE-AIM components of Get in Motion to establish the real-world impact of this intervention strategy on community-based LTPA participation within the SCI population.

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628 **Figure Legend**

629

630 Figure 1. Client enrollment and participation in the Get in Motion service. **Note:**
631 Missing data were imputed for months 4 and 6 using the expectation
632 maximization (EM) method²⁹, yielding a sample size of $n=46$ for all
633 analyses.

Figure 1.

Table 1

Comparisons between the previously tested telephone counseling intervention and the XXX counseling service.

	Original Telephone Counseling Intervention	XXX Telephone Counseling Service
Underlying Theoretical Framework	HAPA	HAPA
Target Audience	Intenders with SCI	Non-Intenders, Intenders, Actors with SCI
Duration of Counseling Program	8-10 weeks	6 months
Frequency of Counseling	Monthly (Total of 2-3 interactions with counsellor)	Weekly (Months 0-2) Biweekly (Months 2-4) Monthly (Months 5-6) (Total of 14 interactions with counsellor)
Targeted Duration of Each Counseling Session	10-15 minutes	10-15 minutes

Note. HAPA = Health Action Process Approach model. The original telephone counseling intervention is based on the protocol used in two earlier RCTs.^{12,13}

Table 2

Topics and examples of content discussed during the counseling sessions based on the Health Action Process Approach (HAPA) stage of change.

Topic	Content Examples	HAPA Stage of Change Category
Committing Self to an Active Lifestyle	<ul style="list-style-type: none"> • What is LTPA • Activities of interest • Benefits of LTPA 	Non-intender
Preparing for Physical Activity and Getting Started	<ul style="list-style-type: none"> • Action planning • Goal-setting • Coping with barriers • Social support • Environmental support • Building self-esteem and self-efficacy 	Intender
Maintenance of LTPA Program	<ul style="list-style-type: none"> • Relapse and coping strategies • Rewards (intrinsic and extrinsic) • Reassessment of LTPA goals 	Actor

Note. HAPA stage of change was determined by the counselor during the first counseling session using the 1-item staging questionnaire, "Do you engage in moderate to heavy intensity LTPA on a regular basis (at least 30 minutes at least 3 times per week)?"²⁶ Clients responding "No, and I do NOT intend to start in the next 6 months" were classified as Non-intenders. Clients who responded "No, but I intend to start in the next 6 months" or "No, but I intend to start in the next 30 days" were classified as Intenders, while those who responded "Yes, I have been for less than 6 months", or "Yes, I have been for more than 6 months" were classified as Actors.

Table 3

*Demographic characteristics of the clients who enrolled in XXX between June 2008 - June 2011
(N = 65) and Comparison to the Larger Canadian SCI Population (N = 86,000).*

Variable (n, %)	All XXX clients	Effectiveness evaluation		Canadian SCI population
		No	Yes	
	<i>n</i> = 65	<i>n</i> = 12	<i>n</i> = 53	<i>n</i> = ~86,000 ^d
Age (years), <i>M</i> ± <i>SD</i>	50.42±12.78	44.40±17.89	51.62±11.36	20% are 50+ ^c
Years post-injury , <i>M</i> ± <i>SD</i>	14.46±12.69	16.10±13.08	14.14±12.72	
Sex				
Male ^a	37 (56.9)	9 (75.0)	28 (52.8)	(81.0) ^c
Female	27 (41.5)	3 (25.0)	24 (45.3)	(19.0) ^c
Level of injury				
Paraplegia	30 (46.2)	6 (50.0)	24 (45.3)	(56.0) ^d
Tetraplegia	29 (44.6)	5 (41.7)	24 (45.3)	(44.0) ^d
Cause of injury				
Vehicular ^a	17 (26.2)	5 (41.7)	12 (22.6)	Traumatic (51.0) ^d
Sports/recreation/falls	22 (33.8)	4 (33.3)	18 (40.0)	
Medical/surgical complications	6 (9.2)	1 (8.3)	5 (9.4)	Non-traumatic (49.0) ^d
Other	16 (24.6)	2 (16.7)	14 (26.4)	
Primary mode of mobility				
Manual chair ^b	28 (43.1)	4 (33.3)	24 (45.3)	(68.0) ^c
Power chair ^b	16 (24.6)	4 (33.3)	12 (22.6)	(23.0) ^c
Manual and power chair ^b	9 (13.8)	1 (8.3)	8 (15.1)	N/A
Gait aid/Walk independently	11 (17.0)	3 (25.0)	8 (15.1)	(8.0) ^c
Marital status				
Single	13 (20.0)	3 (25.0)	10 (18.9)	N/A
Married/common law ^a	37 (57.0)	6 (50.0)	31 (58.5)	N/A
Divorced/widowed/ Separated	13 (20.0)	2 (16.7)	11 (20.8)	N/A
Highest level of education**				
Post-secondary ^a	42 (64.6)	2 (16.6)	40 (75.5)	(62.0) ^c
High school/other	19 (29.2)	7 (58.3)	12 (22.6)	(36.0) ^c
Geographic location				
Western Canada	21 32.3	3 (25.0)	18 (34.0)	(38.0) ^e
Central Canada ^a	40 (61.6)	9 (75.0)	31 (58.5)	(28.0) ^e
Eastern Canada	3 (4.6)	0 (0)	3 (5.7)	(34.0) ^e
HAPA stage†				
Actor	32 (49.2)	3 (33.3)	29 (58.0)	N/A
Intender	26 (40.0)	6 (66.7)	20 (40.0)	N/A
Non-intender	1 (1.5)	0 (0)	1 (2.0)	N/A

Note. HAPA = Health Action Process Approach model. All values are given as *n* (%) except age and years post injury, which are $M \pm SD$. *ns* < 65, 12, and 53 for some variables in the second, third, and fourth columns, respectively, due to non-responding. Superscripts denote the reference category for chi-square analyses; other categories for a given variable were combined and used as the comparison group. Chi-square analysis was not done for HAPA stage since less than five actors opted out of the effectiveness evaluation.

^b Clients using manual and/or power wheelchair were collapsed into one reference group of wheelchair users.

^c Data taken from the Canadian Paraplegic Association's Workforce Survey²⁶

^d Data taken from Rick Hansen Institute's Incidence and Prevalence of Spinal Cord Injury in Canada Report²⁷

^e Data taken from the Rick Hansen Institute's Spinal Cord Injury Community Survey for Traumatic Injuries report²⁸

† This HAPA stage variable is not an assessment of actual LTPA; rather it is a readiness for change indicator (assessed via a 1-item instrument²⁶ that was used to guide counseling session content.

**denotes significant difference between those who did and did not participate in the effectiveness evaluation at $p = .001$.

Table 4

Descriptive statistics for the two effectiveness measures over time (n= 46)^a.

Measure	Baseline		2 months		4 months		6 months	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
LTPA intentions [†]	4.54	2.00	4.91	2.09	4.96	2.13	4.96	1.84

	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
LTPA behaviour	16	34.8	17	37.0	22	47.8	24	52.2
(<i>p</i> value)				(.74)		(.13)		(.09)

Note. Intention was measured on a 7-point scale. LTPA behavior values represent the number and percentage of clients who were engaging in ≥ 30 mins of moderate to heavy-intensity LTPA on ≥ 3 days per week over the past 7 days at each of the four assessment periods. Values in parentheses represent *p* values. Repeated measures ANOVAs were used to examine change in intentions over time. McNemar tests were used to test for significant changes in the proportion of clients who were regularly active at baseline compared with 2-, 4-, or 6-months.

^a Missing data were imputed for months 4 and 6 only using the expectation maximization (EM) method²⁹, yielding a sample size of *n*=46 at all four time points (baseline, 2-, 4-, and 6-months) prior to conducting subsequent analyses.

[†] *p* value for the repeated measures ANOVA = .44