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The Early Bird Gets the Worm! Congruency Between Intentions and Behavior is Highest When Plans to Exercise are Made for the Morning

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Minimizing the exercise intention–behavior gap remains an ongoing research pursuit. Based on a limited resource model of self-regulation, we hypothesized the existence of a more prominent exercise intention–behavior gap later in the day. The current studies assessed exercise intention follow through over the course of a week (*Study 1* = 115 working adults; *Study 2* = 191 students). Both studies demonstrated a greater inconsistency between exercise intentions and actual exercise bouts in the evening compared to the morning. Specifically, the greatest number of intentions not carried through occurred for intentions made between 5 p.m. and 8 p.m. These results provide preliminary evidence suggesting that exercise intentions set for the morning are more successful than those set for the evening, translating to practical advice when to schedule exercise bouts.

As the healthcare system shifts a greater focus toward health promotion, there is increasing interest in how to successfully promote health behavior change. Bandura (2004) emphasized that changing health habits is not possible by merely a matter of "will" and an important component to sustaining a behavior change is the development of self-regulatory capacity. Self-regulation is the capability of the self to consciously alter its behavior (Bandura, 1991).

Muraven and Baumeister (2000) put forth a model describing self-regulation strength as a limited, renewable resource. They proposed that it is not a domain-specific resource, such that participation in any self-regulatory activity (e.g., resisting temptation, making decisions, emotional control, persisting in the face of failure) depletes the same resource. Ample evidence supports their model by demonstrating that participation in a task requiring self-regulatory effort increases the likelihood of failure in subsequent attempts at self-regulation, even when the second task uses a different type of self-regulation (Baumeister,

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Bratslavsky, Muraven, & Tice, 1998; Muraven, Tice, & Baumeister, 1998; Vohs et al., 2008; Vohs & Heatherton, 2000). For example, studies show that after having to make a series of decisions choosing between two different products, participants are not able to last as long immersing their arm in an unpleasant ice water bath (Vohs et al., 2008). However, this net depletion in self-regulation is not permanent. Under conditions that no longer require use of self-regulatory stores, e.g., while sleeping, Muraven and Baumeister (2000) suggested that it can be restored, potentially to its full capacity.

It is well accepted that people's exercise intentions do not always translate into exercise, supporting Bandura's (2004) claim that motivational "will" is not enough to successfully change one's health behavior. This intention–behavior gap commonly observed in exercise may be related to decrements in self-regulation. Previous research examining exercise and self-regulation depletion found that following a self-regulatory demanding task, effort to exercise and planning for future exercise bouts both decreased (Martin Ginis & Bray, 2010). Furthermore, participants who had a greater decrease in planning of exercise during the experiment had decreased exercise adherence over the following 2-month period (Martin Ginis & Bray, 2010).

If, as eluded by Muraven and Baumeister (2000), self-control strength is highest in the morning when day-to-day self-regulatory demands have yet to begin, perhaps this is the ideal time to follow through with one's exercise intentions. No previous studies have examined this hypothesis directly; however, there is research in the field of circadian rhythm that helps provide a basis for the notion. The Morningness-Eveningness Questionnaire commonly used in circadian rhythm research classifies people based on their diurnal preference and when they function best mentally and physically (Horne & Östberg, 1976). When comparing these sleep-wake patterns with psychological and behavioral variables, they found that "morning" people have higher levels of self-control, including self-control of health habits, than "evening" people (Digdon & Howell, 2008). They have also found that "morning" people report higher levels of physical activity (Urbán, Magyaródi, & Rigó, 2011).

Planning to exercise for the morning, when individuals should have the greatest amount of self-regulation available, may lead to greater follow through of intentions and less of an intention–behavior gap. To our knowledge, this has not been previously examined. We conducted two preliminary studies to examine the hypothesis that exercise intentions will be followed through to a greater extent at the beginning of the day in comparison to the end of the day.

Study 1

To apply a global model of self-regulation to an exercise context, we assessed the time of day intentions to exercise were made and if time of day influenced

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whether these intentions were acted upon with an actual exercise bout. Many day-to-day demands (e.g., making decisions, resisting temptations) utilize self-regulatory resources, and therefore, when viewing self-regulation as a non-domain-specific, limited resource, one would expect to see greater depletion in the resource the longer an individual has been awake. Pursuing exercise intentions with action requires self-regulatory reserves. Therefore, in light of an expected decrease in self-regulation as the day progresses, as well as some preliminary results suggesting that "morning" people have greater levels of self-control and higher levels of physical activity than "evening" people (Digdon & Howell, 2008; Urbán et al., 2011), we hypothesized that intentions made in the morning hours would be followed through to a greater extent than intentions made later in the day.

Methods

Participants. One hundred fifteen adults (63 female; 55%) who were currently working full time and had intentions to exercise participated in Study 1. The mean age of participants was 35.5 years (± 12.3). One hundred eight (93.9%) participants had an exercise goal and the mean value for this specific goal (on a 9-point scale, with verbal anchors ranging from *I do not value this goal at all* [1] to *I value this goal very much* [9]) was 7.2 (± 1.8). In addition, 102 (89%) respondents reported making specific plans to exercise. Various descriptive characteristics of the sample can be found in Table 1.

Table 1

Study 1: Demographic Information

Sex (% female)	55
Age (μ_{years})	35.5 ± 12.3
Had at least one dependent (% of participants)	37
Married (% of participants)	58
Currently exercising (% of participants)	96
Had an exercise goal (% of participants)	94
Intentions to exercise in upcoming week ($\mu_{bouts/week}$)	4.4 ± 1.4
Strenuous exercise bouts from past week ($\mu_{bouts/week}$)	2.5 ± 1.9
Moderate exercise bouts from past week ($\mu_{bouts/week}$)	2.2 ± 1.7
Met exercise guidelines put forth by the American College of Sports Medicine (% of participants)	60

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Procedure. Adults were approached at various locations around the community and invited to take part in a study about exercise patterns. Participating volunteers were given a survey to complete on location and brief instructions. First, participants reported demographical information and questions pertaining to their exercise goals and typical exercise behavior. Second, participants' specific intentions to exercise and actual exercise behavior from the past 7 days were measured through the use of two separate calendars. Each calendar was vertically divided into the days from the past week and was horizontally divided into 3-hour time periods. To assess intentions to exercise, participants were instructed to put a checkmark in each box that corresponded to a time and date they had *intended to exercise* in the past week. Next, behavior was assessed using an identical calendar, but participants were instructed to put a checkmark in boxes that corresponded to a time and date that they *actually exercised* in the past week. They were instructed to only include exercise lasting a minimum of 10 minutes and of at least a moderate intensity. Along with exercise patterns in the past week, frequency of exercise intentions and behavior in a typical week was assessed.

Results

Exercise Intention–Behavior Gap. Existence of an exercise intention–behavior gap was determined by comparing the mean number of exercise *intentions* during a typical week with the mean number of *actual* exercise bouts during a typical week, using a paired samples t test. During a *typical* week, the mean sum of intentions to exercise ($M = 4.55$, $SD = 1.45$) was significantly greater than the mean sum of actual exercise bouts performed ($M = 3.88$, $SD = 1.58$; $t = 7.747$, $p < .001$), suggesting the existence of an exercise intention–behavior gap. The following congruency analyses were used to examine whether occurrence of an intention–behavior gap differed between the morning and the afternoon and evening hours in the *past week*.

Congruency Between Exercise Intentions and Behaviors. The average number of exercise *intentions* in the morning hours (i.e., from 5 a.m. to 11 a.m.) was compared to the average number of *actual exercise bouts* performed in the same morning hours, using a paired samples t test to assess whether there was a discrepancy between exercise intentions and actual exercise behavior at that time of day. An identical analysis was performed for the afternoon/evening hours (i.e., from 11 a.m. to 5 a.m.). As hypothesized, there was no significant difference between intentions and actual behavior in the morning hours ($t = 0.87$, $p = .388$), yet there was a significant difference in the afternoon/evening hours ($t = 2.29$, $p = .024$), such that intentions to exercise in the afternoon or evening hours were significantly less likely to be acted upon.

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To provide further support for this discrepancy between the morning and afternoon/evening hours, we examined the likelihood of each individual to act upon his or her exercise intentions for the morning hours in comparison to afternoon/evening hours by calculating an intention–behavior congruency score for each time period. To calculate the morning exercise congruency score, the total number of intentions to exercise in the morning for the week was summed for each participant, and a proportion was calculated for those intentions that the participant actually followed through by exercising on the corresponding day that they intended. This resulted in a score for each participant of the proportion of morning intentions that were followed through with actual exercise. Afternoon/evening exercise congruency scores were calculated in an identical manner using reported intentions in the afternoon/evening hours. Exercise intention–behavior congruency scores between morning and evening times were compared through the use of a two-tailed independent samples t test. Intention–behavior congruencies were significantly greater in the morning ($M = 0.851$, $SD = 0.295$) than in the evening ($M = 0.685$, $SD = 0.341$; $t = 3.019$, $p = .003$), such that participants followed through with their morning exercise intentions to a greater extent than afternoon or evening intentions.

Exercise Intention Fails. We also calculated whether there was a greater number of absolute exercise intention "fails" in the morning hours versus the afternoon/evening hours. An exercise intention "fail" was defined as an exercise intention that did not have a checkmark in the corresponding day for actual exercise behavior. Differing from the exercise intention–behavior congruency scores previously reported, the intention fails were not calculated as a proportion of each participant's total number of intentions but rather the absolute number of intention fails for all participants at each 3-hour time period throughout the day. Results of exercise intention fails in comparison to total intentions at each 3-hour time period are represented graphically (Figure 1). The greatest absolute number of intention fails was between 5 p.m. and 8 p.m.

Total Exercise Bouts for Morning Intenders. Finally, the sample was divided into those who had had at least one intention to exercise in the morning versus those who only had intentions to exercise at later times. The average number of exercise bouts for the week was compared between these two groups by a two-tailed independent samples t test. Total exercise bouts were significantly higher ($t = 3.74$, $p < .001$) in the group who made at least one exercise intention in the morning ($M = 4.64$, $SD = 2.19$) compared to those who had reported zero ($M = 3.19$, $SD = 1.94$).

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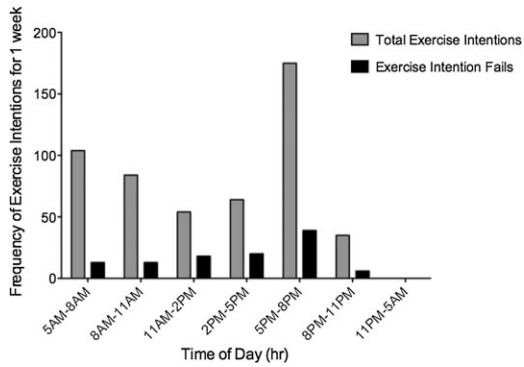


Figure 1. Total exercise intentions and corresponding frequency of failed intentions over the course of 1 week for all participants from Study 1.

Discussion

In support of our hypothesis, Study 1 demonstrated that intentions to exercise in the morning hours are more likely to be acted upon than those made for the afternoon/evening hours. Furthermore, possibly as a result of this lower discrepancy between intentions and behavior in the morning, those who made at least one exercise intention for the week in the morning completed a greater number of total exercise bouts over the course of a week. These findings are consistent with Muraven and Baumeister's (2000) model of self-regulation as a resource that is not domain-specific.

While these results are promising, the study is not without limitations. The foremost of these limitations was the use of a cross-sectional design. Participants reported both past intentions and past behavior at the same time. Recollection of intentions from the prior week, especially with the knowledge of what exercise was actually completed, may decrease the accuracy of what participants report, weakening any conclusions that can be made regarding congruency between exercise intentions and behavior. However, inaccuracies of self-reported physical activity data lend themselves to overestimations, not underestimations. Thus, this recollection of past intentions and behavior may be a conservative report of the incongruence between intentions and behavior that occurred. A second concern with Study 1 is regarding the population used for the sample, full-time working adults. Presumably, this sample's flexibility and choice of when to schedule exercise are dictated by typical office hours (e.g., from 9 a.m. to 4 p.m.). This is reflected in Figure 1, as the highest frequency of exercise intentions occurred in the time periods outside of regular work hours. Therefore, Study 1 does not provide a complete depiction of how the relationship between intentions and behavior changes over the course of a day, as exercise bouts may have been

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restricted due to rigid work schedules. Given these methodological limitations, we conducted an additional study using a more rigorous design and a sample drawn from a population that was not working full time.

Study 2

The second study maintained a similar purpose to the first: to determine whether the discrepancy between exercise intentions and behavior differed in the morning hours in comparison to the afternoon/evening hours. However, Study 2 utilized a prospective design where participants reported intentions for the upcoming week and then exactly 1 week later were followed up with and asked to report exercise behavior during the past week. An undergraduate student population was used instead of a working population in order to get a better representation of the relationship between intentions and behavior across the day without the constraints of typical office hour work regimes. Students were selected with the assumption that they would have an increased likelihood of being able to schedule exercise during breaks throughout the day. Once again, in Study 2, we hypothesized that morning intentions to exercise would be acted upon to a greater extent than evening intentions.

Methods

Participants. Eligibility criteria for Study 2 were being currently enrolled in part-time or full-time studies at the university in which this study was conducted and having intentions to exercise. Participants completed two surveys spaced exactly 1 week apart. Two hundred and sixty-one students completed the first survey at *Time 1*. Response rate was respectable, with 202 (77%) returning to complete the survey at *Time 2*. Of those 202 participants, 11 participants were excluded from final analyses due to injuries that prevented them from exercising (2), no intentions to exercise (3), or past physical activity bouts or intentions to exercise greater than three standard deviations from the mean (6). The final sample of participants included in the analyses was 191 (110 female; 58%). The mean age of participants was 22.0 years (± 2.2). The mean value for regular exercise (scored on a 9-point scale with verbal anchors *I do not value this goal at all* [1] and *I value this goal very much* [9]) was 7.2 (± 1.6). Additional descriptive characteristics of the sample can be found in Table 2.

Procedure. At Time 1, demographical information, diurnal preference, and exercise intentions for the following week were measured. Diurnal preference was measured using six items taken from the Morningness-Eveningness Questionnaire (Items 1, 2, 11, 9, 16 and 19; Horne & Östberg, 1976). Based on these items,

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Table 2

Study 2: Demographic Information

Sex (% female)	58
Age (μ_{years})	22.0 ± 2.2
Morningness-Eveningness Rating (% of participants)	
Definite evening	6
Moderate evening	19
Intermediate	53
Moderate morning	20
Definite morning	2
Intentions to exercise in upcoming week ($\mu_{bouts/week}$)	4.4 ± 1.5
Strenuous exercise bouts from past week ($\mu_{bouts/week}$)	2.8 ± 1.6
Moderate exercise bouts from past week ($\mu_{bouts/week}$)	2.9 ± 1.8
Met exercise guidelines put forth by the American College of Sports Medicine (% of participants)	74

people were classified from a "Definite morning" person to a "Definite evening" person based on when they prefer to wake and sleep and when throughout the day they would ideally like to engage in physical activity. Intentions were assessed using a calendar detailing the upcoming week, as was used in Study 1. Participants were scheduled to return in exactly 7 days' time to complete the second survey. A text reminder was sent 24 hours prior to the Time 2 scheduled appointment time. At Time 2, participants completed a second survey that asked about their specific exercise behavior over the *past* 7 days, including the time and dates that he/she exercised. This was again assessed using a calendar of the past week; but unique from Study 1, participants were also asked to report the time they woke up each morning of the previous week.

Results

Morningness-Eveningness Classification. An overall exercise intention–behavior congruency score was calculated by dividing the number of exercise intentions successfully followed through by the total number of exercise intentions made, regardless of whether they were in the morning or the afternoon/evening. There was no significant difference in overall exercise intention–behavior

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congruency between morningness-eveningness classifications (e.g., definite morning, moderate morning, intermediate, moderate evening, definite evening), $F(4, 188) = .227$, $p = .923$. Descriptive information detailing the morningness-eveningness classification of the sample can be found in Table 2.

Congruency Between Exercise Intentions and Behaviors. The results from Study 2 revealed that there was no significant difference between exercise intentions and actual behavior in the morning hours (i.e., from 5 a.m. to 11 a.m.; $t = 1.46$, $p = .147$), yet there was a significant difference in the afternoon/evening hours (i.e., from 11 a.m. to 5 a.m.; $t = 5.06$, $p < .001$), indicating that the existence of an intention–behavior gap for exercise occurred only at later times in the day. As was calculated in Study 1, we further examined the relationship between exercise intentions and follow through by calculating a morning congruency score and an afternoon/evening congruency score for each participant. Intention–behavior congruencies were not significantly different ($t = 1.845$, $p = .066$) between the morning ($M = 0.771$, $SD = 0.348$) and the evening ($M = 0.697$, $SD = 0.319$). It did, however, approach significance with morning intentions having a higher congruency score. This is suggestive that a greater proportion of intentions set for the morning are carried through than intentions made for the afternoon/evening.

In Study 2 only, participants also reported when they woke up each day of the past week. For each participant, an average was calculated of the interval of time between first waking up and then starting an exercise bout, for all bouts over the past week. This was a significant predictor for overall exercise intention–behavior congruency, such that a longer average time between when the participant awoke and exercised predicted a lower proportion of exercise intentions that he or she successfully followed through with by actually exercising ($b = -.18$, $t = 2.52$, $p = .013$).

Exercise Intention Fails. Total exercise intention fails were calculated in 3-hour time periods across the week with a "fail" operationalized in an identical manner as Study 1: an exercise intention that was not followed through with an actual exercise bout on the corresponding day. The total number of intentions and the total number of exercise intention fails are graphically represented in 3-hour time periods (Figure 2). The greatest number of failed intentions was again between 5 p.m and 8 p.m., identical to Study 1 findings.

Total Exercise Bouts for Morning Intenders. Reaffirming the results from Study 1, participants who made at least one exercise intention in the morning hours accumulated a significantly higher number of total exercise

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bouts over the course of a week ($M = 7.85$, $SD = 4.73$; $t = 4.97$, $p < .001$) than who had reported zero intentions to exercise in the morning ($M = 4.61$, $SD = 3.08$).

Discussion

Study 2 replicated results found in Study 1, with the exception that morning and afternoon/evening congruency scores were not significantly different; however, they neared significance ($p = .066$). Using a more stringent study design, Study 2 re-affirmed our hypotheses that there is a greater discrepancy between exercise intentions and behavior when intentions are planned for the afternoon/evening hours in comparison to the morning. It has also provided further support for the conclusion that people who make at least one exercise intention in the morning hours will complete more exercise bouts in the course of a week than those who do not.

Thus far, all results have assumed that participants woke up in the morning. Unique to Study 2, we were able to take this into account as participants were asked to report when they woke up, thus removing variability caused by participants waking up at different times. Based on a model of self-regulation as a limited, renewable resource, we would expect self-regulation to be greatest when one first wakes up, regardless of whether it is in the morning or later in the day. To our knowledge, this was the first study to apply this model to an exercise context in this manner and therefore we primarily looked at initial relationships between time of day and exercise intention follow through. However, our finding that the longer one waited to exercise after waking up predicted lower follow

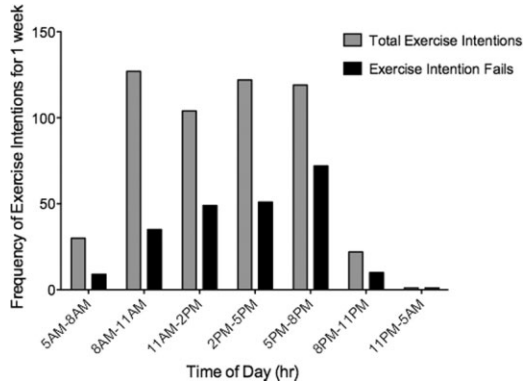


Figure 2. Total exercise intentions and corresponding frequency of failed intentions over the course of 1 week for all participants from Study 2.

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through of exercise intentions provides further support for our hypotheses and is suggestive that these observations are related to depletion of self-regulation throughout the day.

An improvement in the study design in Study 2 was asking participants about their exercise intentions for the following week rather than recalling intentions from the previous week, as a means to increase the accuracy of reported intentions. The act of making a specific plan for exercise (including writing down the date/time) has been shown to increase the success rate of following through with such intentions (Gollwitzer, 1999). We do not believe this would have impacted our results as we tested differences across the day and would expect this bias to impact both the morning and the afternoon/evening times equally. Furthermore, in alignment with the self-report bias in Study 1, any benefits of writing down specific exercise intentions that could have occurred in this study would have dampened the existence of an intention–behavior gap, thus making our findings even more robust.

General Discussion

These two studies applied a model of self-regulation to the context of following through with exercise intentions. We hypothesized that there would be a decline in one's ability to follow through with their exercise intentions across the course of a day, potentially as a result of a decrease in self-regulation strength. If this hypothesis was supported, we would expect to see that exercise intentions made to exercise in the morning hours would be more likely to be carried out with actual exercise behavior as compared to intentions set for the afternoon or evening hours. Findings from both studies provide strong evidence supporting our hypothesis.

There was no intention–behavior gap observed in the morning, yet there was one observed in the afternoon/evening hours. This occurrence was observed in both Study 1 and Study 2. Previous work has shown that self-regulatory activities are able to assist in bridging the gap between exercise intentions and behavior (Sniehotta, Scholz, & Schwarzer, 2005). When taking into account Muraven and Baumeister's (2000) suggested model of self-regulation as a limited, renewable resource that is not domain-specific, self-regulation would likely decline as the day progressed due to routine daily self-regulatory demanding tasks (i.e., decision making, resisting temptations, emotional control). We therefore expected to see more incongruence between exercise intentions and behavior later in the day. The current data do not directly demonstrate that this diminished ability to follow through with exercise intentions over the course of a day is due to a decline in self-regulation capacity; however, it provides preliminary evidence that time of day may play a role in one's ability to follow through with intentions, and provides further support for Muraven and Baumeister's model of self-regulation.

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Further backing up the contention that morning exercise intentions are more likely to be carried out than afternoon or evening intentions, results from Study 1 demonstrated that, on average, a greater proportion of individuals' morning exercise intentions were followed through with an exercise bout that day than the proportion of evening intentions. Although not statistically significant, results from Study 2 also appear to be in the same direction, with morning intentions tending to be completed more often than when intentions were set to exercise later in the day ($p = .066$).

Providing more evidence toward our hypothesis, both studies showed that the greatest number of exercise intention "fails" (an intention not followed through with an actual exercise bout on the corresponding day) occurred between 5 p.m. and 8 p.m. It is of particular interest given that Study 1 and Study 2 utilized two very different populations: an adult working population and a student population. As can be seen in Figures 1 and 2, they displayed a very different pattern of intentions across the day. In Study 1, for the population of working adults, intentions were high for the morning and the evening but much lower during working hours, whereas in Study 2, students exhibited a fairly even level of intentions across the whole day. Yet in both studies, there appears to be an increasing number of "fails" as the day progressed, possibly due to a decrease in self-regulatory strength such that by the end of the day participants were not able to self-regulate their exercise behavior as well as in the morning. This furthers our confidence in the claim that exercise intentions made in the morning are adhered to a greater extent than intentions made for the afternoon or evening, and a strict schedule to plan exercise around, dictated by regular workday hours (i.e., from 9 a.m. to 4 p.m.), is not why this morning versus afternoon/evening discrepancy occurs. This was concluded as students' schedules are not dictated by regular workday hours yet the same morning versus afternoon/evening relationship was observed.

Both studies demonstrated that those who make at least one exercise intention for the morning hours completed a significantly greater number of exercise bouts than those who had only made intentions for the evening hours. In North America, where less than half of the adult population is meeting physical activity guidelines (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Canter for Health Statistics, 2012; Statistics Canada, 2013), advice suggesting the optimal time of day to plan exercise in order to boost adherence may be one tactical tip that can be used in assisting more of the population into a feasible exercise routine.

Lastly, as this was an initial attempt at applying a model of self-regulation to exercise, we were interested in whether there seemed to be a relationship between the time one plans their exercise in the day and their consequent success at completing these intentions. Therefore, for these analyses to be congruent with the model, we had to assume that participants woke-up in the morning. Findings

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from Study 2, which show that the longer one typically waited to engage in exercise after waking up, the less successful he or she will be at completing their intended exercise bouts, fall in line with our other results and provide greater support that these phenomena may be due to declines in self-regulation across the day.

We acknowledge that there are other important factors that influence whether people follow through with their exercise intentions (e.g., routines, environmental barriers) that were not controlled for due to the design of our study. Future research should explore the relationship between time of day and follow through of exercise intentions using additional study methodology and study design as used within Study 1 and Study 2, objective measures, and exploration of possible confounders. Use of an experimental study design in which non-exercisers are randomly assigned to either a morning exercise group or an evening exercise group and asked to exercise at their respective time would provide further support of our hypothesis. Adherence to exercise between the two groups in this style of experiment would provide greater insight into the relationship between follow through of intentions and time of day. The relationship between time of day, self-regulation depletion, and intention–behavior gap could also be explored through observational design, whereby beginner exercisers enrolling in a new fitness facility are stratified based on which time of the day they report intending to exercise (i.e., morning or evening). The two separate groups could be tracked with respect to exercise visits to the facility to assess whether those who choose to exercise in the morning maintain their new exercise regime to a greater extent than those who exercise in the evening. Lastly, there is a large gap in the literature regarding changes in self-regulation strength across the course of a day, which warrants further exploration. To our knowledge, there is currently not an appropriate assessment tool so this may require development of such a method.

Prior to these studies, there has been no previous research applying the self-regulation as a limited resource model to the exercise intention–behavior gap. This preliminary research has provided promising initial support, in the exercise context, that self-regulation is a limited, non-domain-specific resource that is significantly impacted by time of day. The strength of these studies is bolstered by the replication of findings—Study 1 and Study 2 results essentially mirrored each other despite two distinct populations with very unique available times to exercise as well as times in which intentions were typically set. Following up our cross-sectional study results with a prospective study design also increases our confidence that these findings are not spurious.

Simple, practical advice can be gleaned from these results and may be able to be utilized by those struggling to adhere with exercise. Suggestions to make exercise intentions as early as possible in the day may make commitment and follow through with one's intentions easier. Practically, fitness facilities may benefit from scheduling more exercise classes earlier in the day to increase

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attendance and participation rates. In summary, our findings suggest that there may be merit in making intentions to exercise earlier in the day.

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