Is "Just-Get-Started" an Effective Self-Management Tactic to Improve Flossing?

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Abstract

Healthy behaviours are often maintained by how habitual, or automatic, the behaviour has become. Repeated initiation and repetition of a behaviour has been shown to result in an activity becoming more automatic. Thus, this study experimentally investigated the efficacy of the often recommended "Just Get Started" (JGS) tactic, which increases the likelihood of initiating a behaviour, and assessed whether it increased participants' frequency and automaticity of flossing. Undergraduate students ($n = 44$) completed baseline surveys before being randomized into one of two groups: (1) a control group in which participants were only told to floss each day for four weeks, and (2) and a JGS group that was additionally given the recommendation to use the JGS tactic, that is, whenever they did not feel like flossing, to pick up the floss and floss one tooth before deciding whether or not to continue. Participants reported their frequency and automaticity of flossing after 2 and 4 weeks. Results showed that although both automaticity and flossing increased over time, there was no significant difference between the JGS and control group on these measures, suggesting that the JGS rule provided no extra benefit. Participants who made use of the JGS tactic, however, reported that the rule helped them initiate and continue flossing, which suggests that the JGS rule may be perceived as more useful than it actually is. Additional exploratory analyses revealed several differences in background experiences between flossers and non-flossers. Baseline flossing frequency also showed a small correlation with self-control, conscientiousness, and procrastination, and a strong correlation with automaticity. Limitations of the study include a small sample size and the over-reliance on self-report measures.

Keywords: Just-Get-Started, habit formation, behaviour frequency, automaticity, flossing

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Procrastination can be defined as voluntarily delaying a task or course of action with the knowledge that the delay will likely prove detrimental (Park & Sperling, 2012). This behaviour is a prevalent phenomenon in the general population affecting schoolwork, work environments, and more. Common reported effects of procrastination include underperformance, perceived lack of one's ability or self-control, lower self-worth, increased stress and feelings of hopelessness, among others (Steel, 2007; Uzun, LeBlanc & Ferrari, 2020). In terms of health, delaying adoption of healthy behaviours, such as healthy eating or exercising, increases premature morbidity and decreases quality of life (Haveman-Nies et al., 2002). Young people, including undergraduate students, are especially prone to put off making healthy choices as the negative consequences for engaging in unhealthy behaviours are often greatly delayed (Taylor et al., 2017).

Zarick and Stonebraker (2009) proposed that procrastination is driven by a comparison of the perceived costs and benefits of procrastination and that breaking behaviours into smaller, more manageable steps should reduce the costs and thereby make it easier to begin. In keeping with this proposition, one of the most commonly recommended strategies for overcoming procrastination is to "just get started" (JGS); namely, to set and initiate a very small goal at the outset following which people often report finding it relatively easy to carry on with the task (Steel, 2010). For instance, in an article on how to overcome procrastination, online media outlet *Psychology Today* cited researcher Pychyl's "just get started" strategy, which emphasizes the importance of initiating a task, following which it is easier to carry on (Pychyl, 2010; Berns-Zare, 2018). Pychyl suggests that tasks must be broken down into easily achievable steps, and that these tasks should be accomplished whether or not a person "feel[s] like it." In his best-seller

book *Atomic Habits,* Clear (2018) suggests scaling down a larger goal into a small goal, such as reading one page as a starting point for reading thirty books a year, or doing yoga four times a week by "taking out the yoga mat." Similarly, in *Tiny Habits*, Fogg (2019) suggests pairing a new desired behaviour with an existing routine, and then completing small 30-second actions toward the specific behaviour, before rewarding oneself. Interestingly, however, despite the JGS tactic being frequently recommended, almost no empirical research exists in demonstrating its efficacy. Rather, personal stories or case studies are often cited. For instance, *Atomic Habits* describes a man committing himself only to arriving at the gym before going home, and he does so for six weeks, before actually using the gym and ultimately losing 100 pounds.

It is important to understand the underlying mechanisms of self-management interventions, such as the JGS tactic, and their efficacy in maintaining healthy behaviours over time. To start, research has shown that healthy behaviours tend to have a habitual component (Judah, Gardner, & Aunger, 2013). Habits are formed from repeated initiation of a behaviour in the presence of a certain cue, which results in the activity becoming less effortful and more automatic (Lally, Wardle, & Gardner, 2011). Therefore, the strongest predictor of a consistent habit is the extent to which the initial steps of the behaviour have become a strong habit, that is, are performed automatically. From this perspective, the JGS tactic may facilitate the creation of a healthy habit by increasing the likelihood of an individual repeatedly engaging in the initial steps of that behaviour.

To provide concrete evidence for the efficacy of the JGS tactic, the present study will use the health habit of flossing. In one study, Judah, Gardner, and Aunger (2013) found that, at 28 days, greater habit strength was found in participants who had flossed more frequently prior to the study, and that habit strength also increased with better attitudes and memory pertaining to

flossing. At an 8-month follow-up, the habit of flossing was strongest for those who flossed after tooth brushing rather than before. Another study by Orbell and Verplanken (2010) found that participants who committed to flossing after a specific cue flossed more and developed greater habit strength, after both two and four weeks, compared to the group that was told only to floss. The present study will also look at the habit strength of flossing over two and four weeks.

The purpose of the current research was to experimentally investigate the efficacy of the JGS tactic on flossing frequency and habit formation: Whenever the students are tempted not to floss, the JGS rule gets students to floss at least one tooth before deciding whether to stop or to continue. Therefore, this tactic should increase the likelihood of an individual taking the initial steps toward flossing. This study will compare a JGS group, who uses this rule, to a control group who is only told to floss normally, and flossing frequency and automaticity will be assessed at two and four weeks. The prediction is that students in the JGS group will floss more often and show increased automaticity for flossing, compared to the control group. This study will also explore whether there are differences in certain traits and background experiences in those who floss regularly versus those who do not floss regularly. We specifically predict that flossers will differ from non-flossers in self-control, procrastination, conscientiousness, automaticity of flossing, and stability of a flossing routine.

Methods

Participants and Design

Undergraduate psychology students seeking course credit were recruited for a flossing study via SONA, an online research and participant management system. They were awarded 4% credit contingent on completion of at least the baseline survey. Participants were randomized into

a control condition and an experimental Just Get Started (JGS) condition. The Research Ethics Board granted approval for the study.

All participants completed baseline questionnaires assessing flossing frequency, habit strength, intention to floss, stability of their flossing routine, background experiences, self-control, procrastination, and conscientiousness. At the end of the baseline survey, both groups read a paragraph on the importance of flossing and were asked to floss their teeth each day for the next four weeks. The experimental group received additional instructions where the JGS tactic was recommended: if they were tempted to skip flossing, they should try to floss one tooth before making a final decision about whether or not to continue. All participants were then assessed two (T2) and four (T3) weeks later, where they were again asked about flossing frequency and habit strength, and the JGS group was asked extra questions about their use of the JGS rule.

Questionnaires and Measures

Flossing Frequency

Baseline, T2, and T3 flossing frequency was assessed by asking participants how many days in total they flossed most or all of their teeth in the past one week.

Flossing Habit Strength

Automaticity of flossing was measured at baseline, T2, and T3 using a 4-item habit strength automaticity index (SRBAI; Gardner et al., 2012). This measure consists of the stem "*Flossing is something…*" followed by the statements: "*I start doing automatically*," "*I initiate without thinking*," "*I begin without having to consciously remember*," and "*I start doing before I realize I'm doing it*." An additional self-devised item assessing effort was included: "*I start*

doing with little effort." Each item was rated on a 5-point Likert scale with the endpoints labelled 1 (*strongly disagree*) and 5 (*strongly agree*).

Intention to Floss

Participants indicated the extent to which they intended to floss every day for the next four weeks by answering three questions (e.g., "*I intend to floss my teeth every day during the next 4 weeks*.") on a 6-point Likert scale ranging from 1 (*very unlikely*) to 6 (*very likely*).

Flossing Routine

Participants' present flossing routine was assessed by asking if they always keep floss beside their toothbrush, whether they floss in the same location every time, whether they floss at approximately the same time every day, and whether they floss just before or just after they brush their teeth. Ratings were made on a 5-point Likert scale with endpoints ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Background Experiences

These 16 In-House items explored participants' flossing history and present attitudes and motivation toward flossing that may be related to flossing behaviour (e.g., *"I am often too busy to floss"*) with the participants indicating how true the items were for them, on a scale from 1 (*not at all true*) to 5 (*very much true*). See Table 1. A single item also assessed overall health status (i.e., "*How would you rate your overall health status?*") from 1 (*very poor*) to 7 (*excellent*).

Self-Control

Self-control is described as a person's ability to override inner responses and interrupt undesired behavioural tendencies before acting on them (Tangney et al., 2004). The Brief Self-Control Scale (BSCS) contains 13 items that assess individual differences in trait self-control.

Table 1
Background Experiences Between Flossers and Non-Flossers

Background experiences	Mann-Whitney U	*p* value (2-tailed)
1. I maintain a consistent exercise routine.	181.5	.159
2. I get 7-9 hours of sleep every night.	175.5	.119
3. I always follow a healthy and balanced diet.	174.0	.113
4. My parents or caregivers encouraged me to floss as a child.	96.0	.001*
5. My parents or caregivers consistently flossed their teeth.	116.5	.005
6. Most college students my age floss.	205.5	.356
7. I am strongly motivated to avoid getting cavities.	93.5	<.001*
8. My teeth are easily susceptible to tooth decay or getting cavities.	144.5	.025
9. I often visit the dentist.	138.0	.019
10. I don't floss as often as I should.	52.0	<.001*
11. I often don't feel like flossing.	81.5	<.001*
12. I often find flossing to be unpleasant.	115.0	.004
13. I am often too busy to floss.	98.0	.001*
14. I have had difficulty establishing a habit of flossing in the past.	66.0	<.001*
15. I am strongly motivated to create a habit of flossing.	37.0	<.001*
16. Overall, I feel that flossing is an important health habit to develop.	139.0	.012

*$p < .003$.

Items (e.g., "*I am good at resisting temptation*") are rated on a 5-point scale ranging from 1 (*not at all like me*) to 5 (*very much like me*).

Procrastination

Procrastination can be defined as voluntarily delaying a task with the knowledge that the delay will prove detrimental (Park & Sperling, 2012). The 16-item Tuckman Procrastination Scale (TPS) is specifically designed to assess the procrastination tendencies of students. Respondents rate the extent to which the items depict their tendency to procrastinate on a 4-point Likert scale, with higher scores indicating greater procrastination tendencies (e.g., "*I postpone starting on things I don't like to do*"), from 1 (*that's not me for sure*) to 4 (*that's me for sure*).

Conscientiousness

Tendencies toward conscientiousness, such as orderliness and self-control, may predict the likelihood of acting on intentions and thereby facilitate habit formation (Ajzen, Czasch, & Flood, 2009; McCloskey & Johnson, 2021). The Big Five Inventory includes 44 items that

measure an individual on five broad factors, or dimensions, of personality (Goldberg, 1993). The nine conscientiousness-specific items assess a person's tendencies toward responsibility, organization, hard work, goal-directedness, and rule adherence (e.g., "*I see myself as someone who does a thorough job.")*. It uses a 5-point scale with endpoints labelled as 1 (*disagree strongly*) to 5 (*agree strongly*).

JGS Intervention Efficacy

The experimental group was given three extra items at T2 and T3 that assessed their use of the JGS tactic. After indicating their flossing frequency for the past week, JGS participants were asked "*on how many of those days did you initiate flossing by applying the Just-Get-Started "one tooth" rule*" and "*on how many of these Just-Get-Started days did you floss most or all of your teeth*." They also rated the item "*overall, I feel that picking up the floss and flossing at least one tooth helped me continue flossing the rest of my teeth*" on a 5-point Likert scale with endpoints ranging from 1 (*strongly disagree)* to 5 (*strongly agree*).

Statistical Methods

Analysis of QQ plots and Histograms, as well as small sample sizes, for all data sets did not support the assumption that the data are normally distributed; therefore, nonparametric statistics were used for the analyses. Preliminary analyses also revealed no significant differences between the results from the T2 and T3 time points. Given that the baseline versus T3 analyses are most critical with respect to the efficacy of a JGS intervention, comparison analyses were restricted to those two time points.

Wilcoxon signed-rank tests were used to assess within-group differences in flossing frequency and automaticity between baseline and T3. Mann Whitney U tests were used to assess

between group differences, and a Spearman's rank-order correlation was used to assess associations between participants' baseline flossing frequency and various scales.

Results

Ninety-one students participated at baseline (60 [65.9%] females and 25 [27.5%] males; age range 17-48 years, $M = 22.0$ years, $SD = 6.6$). Only forty-four (48%) students participated at T3; however, there was no evidence that the 47 dropouts were significantly different on any variable compared to those who completed the surveys at both time points ($p > 0.05$). T3 descriptives were otherwise similar to those at baseline (28 [63.6%] females and 14 [31.8%] males; age range 17-45 years, $M = 22.5$ years, $SD = 7.1$).

Effect of JGS Intervention

When examining the effects of the JGS intervention, we restricted the analyses to participants who completed the full 4-weeks of the study. This consisted of 26 participants in the control group (16 [61.5%] females and 9 [34.6%] males; age range 17-45 years, $M = 22.4$ years, $SD = 7.5$) and 18 in the JGS group (12 [66.7%] females and 5 [27.8%] males; age range 17-41 years, $M = 22.8$ years, $SD = 6.7$).

Baseline Behaviour

We found no significant differences in baseline flossing frequencies ($U = 172$, $p = 0.13$) or flossing automaticity ($U = 158$, $p = 0.07$) between JGS and control groups. The groups were also not different in self-control ($U = 212$, $p = 0.59$), procrastination ($U = 218$, $p = 0.69$), intention to floss ($U = 194$, $p = 0.31$), and flossing routine ($U = 177$, $p = 0.17$).

Flossing Frequency and Automaticity

Both control and JGS groups increased in flossing frequency from baseline to T3 ($Z = -3.26$, one tailed $p < .001$; $Z = -3.28$, one tailed $p < .001$). The JGS group did not floss more than

the control group at T3 ($U = 188$, one-tailed $p = .13$). The two groups were not different in their net flossing frequency changes over four weeks ($U = 210$, $p = .554$; Figure 1).

Both control and JGS groups increased in automaticity from baseline to T3 ($Z = -2.23$, one-tailed $p = .01$; $Z = -3.52$, one-tailed $p < .001$). The JGS group did not have greater automaticity than the control at T3 ($U = 205$, one-tailed $p = 0.24$). The two groups were not different in their net automaticity changes over four weeks ($U = 172$, $p = .13$; Figure 2).

Figure 1

Side-by-side boxplots of the net changes in Flossing Frequency from baseline to T3

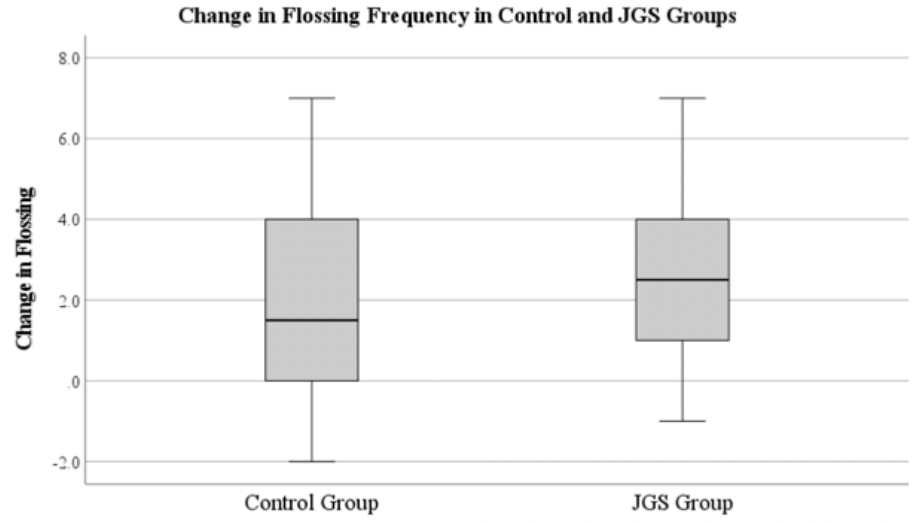
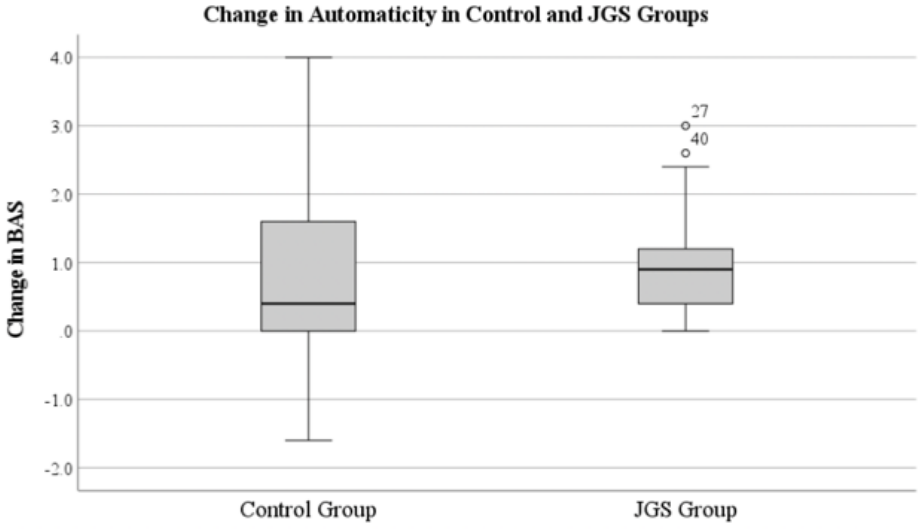


Figure 2

Side-by-side boxplots of the net changes in Flossing Automaticity from baseline to T3



JGS Subgroups*: *Rule Users vs Rule Non-Users

Within the JGS group, we also compared *Rule Users,* defined as those who reported "*initiating flossing by applying the [JGS rule]"* most of the time (i.e., the number of days the participant flossed and the number of days the rule was used were within +/-1 day) at T3 (n = 11), and Rule Non-users who rarely used the rule (n = 7; rule-use M = .14, mode = 0).

Both rule users and rule non-users increased their flossing frequency from baseline to T3 (Z = -2.62, one tailed p = .01; Z = -2.03, one tailed p = .02). As the sample sizes are small, these side-by-side boxplots are provided for reference (Figures 3 and 4). Rule users were not different from non-users in flossing frequency at T3 (U = 38, p = .93) nor in their net flossing frequency changes over four weeks (U = 29, p = .43). The two groups were not different in T3 automaticity (U = 29, p = .43) nor in their net automaticity changes over four weeks (U = 36, p = .86).

Figure 3

Change in number of days of flossing frequency between baseline to T3 in JGS Rule Users

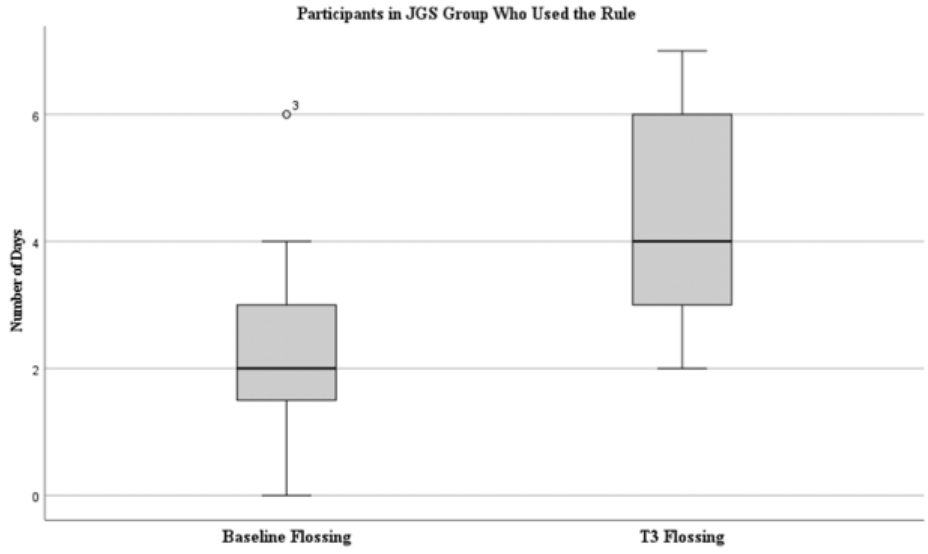
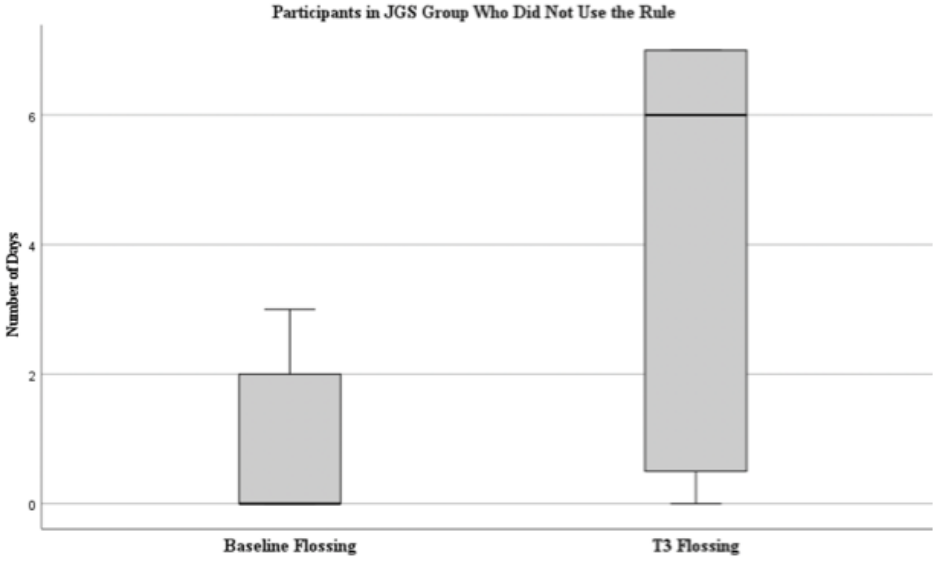


Figure 4
Change in number of days of flossing frequency between baseline to T3 in those that did not use the JGS rule



JGS Subgroups*: *Rule Users vs Control Group

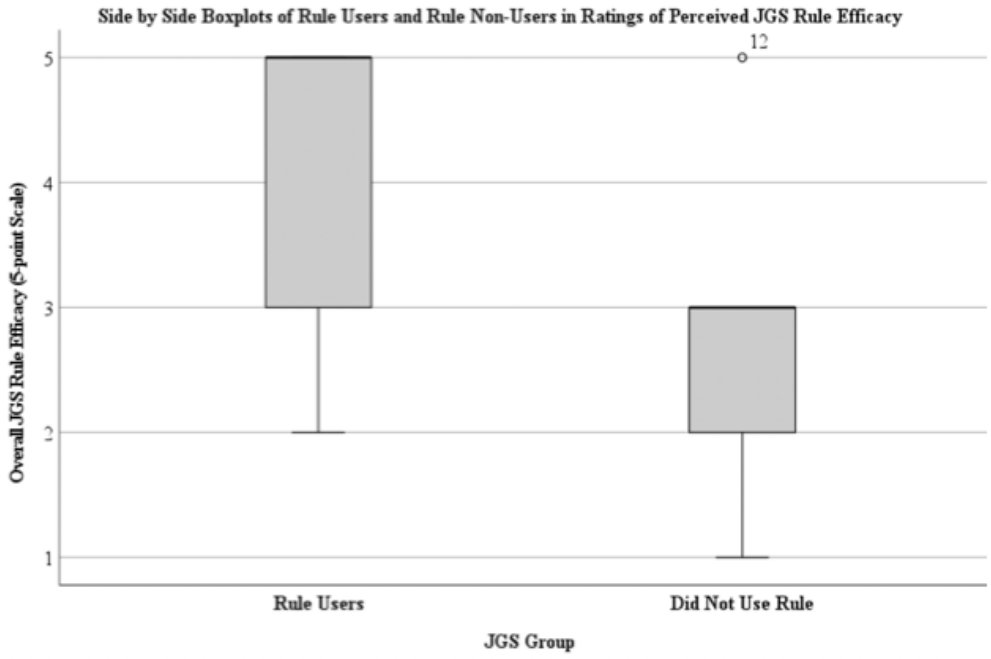
Rule users were not different from the control group in flossing frequency at T3 ($U = 108$, $p = .26$) nor in their net flossing frequency changes over four weeks ($U = 137$, $p = .86$). The two groups were not different in T3 automaticity ($U = 134$, $p = .76$) nor in their net automaticity changes over four weeks ($U = 104$, $p = .19$).

JGS Rule Implementation

Participants that used the JGS rule indicated they "floss[ed] most or all of [their] teeth" 100% of the time that they used the rule. Rule users rated the JGS rule helping them more "overall" than non-users ($U = 17$, one tailed $p = .02$). As these sub-populations are small in sample size, statistical results are to be interpreted with caution. A side-by-side boxplot is provided for reference (Figure 5).

Figure 5

Questionnaire item assessing how the JGS tactic helped rule users and non-users overall



Exploring Flossing Behaviour

Exploratory analyses of differences between Flossers (n_1=12) and Non-flossers (n_2=41) on experiences, traits, and habits were done using baseline data (N = 91). *Flossers* are defined as those who flossed 6-7 times in the week prior to the survey. *Non-flossers* are defined as those who flossed 0-1 times in the week prior to the survey.

Differences in Background Experiences of Flossers and Non-flossers are shown in Table 1. A Bonferroni adjustment was done by dividing the alpha level by the number of comparisons (i.e., .05/16 = .003). Using .003 as our adjusted level of significance, significant relationships were only observed in variables 4, 7, 10, 11, 13, 14, and 15. There was also no difference between Flossers and Non-flossers in their overall health status (U = 203, p = 0.33).

Baseline flossing frequency was positively correlated with self-control (rs = .251, p = .02), conscientiousness (rs = .228, p = .03), and baseline flossing automaticity (rs = .640, p < .001), and was negatively correlated with procrastination (rs = -.281, p = .01). Baseline flossing

frequency was also positively correlated with intention to floss and stability of flossing routines ($r_S = .417, p < .001$; $r_S = .382, p < .001$).

Discussion

The main purpose of this study was to empirically investigate the efficacy of the JGS tactic. Our prediction was that those who used the JGS tactic (i.e., flossing one tooth when tempted not to floss before deciding whether to stop or to continue) would show greater frequency of flossing and habit strength for flossing than those who did not use the tactic. While both groups showed an increase in frequency and habit strength during the course of the study, we found no differences in this regard between participants who used the JGS rule and those who did not. Nevertheless, rule users indicated that they believe that the rule did have an effect in helping them to floss. Additionally, the exploratory portion of the study revealed differences in background experiences between flossers and non-flossers. Small, significant correlations were found between baseline flossing and self-control, conscientiousness, procrastination, and automaticity, and also with intention to floss and stability of flossing routines.

The lack of significant differences between the JGS and control groups suggests that using the JGS rule did not provide a significant benefit for increasing flossing or habit development. A possible explanation may lie in the difference between an "intended goal" and an "implementation intention": an intended goal includes learning about the goal and then thinking the goal will be accomplished; an implementation intention is more purposeful as it includes associating a specific, directed goal (i.e., an if/then goal) with contextual cues (Gollwitzer, Bayer, & McCulloch, 2005). For example, instead of merely thinking they will use the JGS tactic after learning about it (i.e., intended goal), participants forming an implementation intention would choose and write down a specific environmental cue (e.g., "At night time, after I

brush my teeth…") and then a directed goal of "…*if* I do not feel like flossing, *then* I will pick up the floss and floss one tooth before deciding whether or not to continue." The JGS manipulation in this study may have had more effect if it was presented as an implementation intention rather than merely an intended goal. In a study by Orbell and Verplanken (2010), control groups had "intended goals" of intending to floss, whereas the experimental group was told to form an implementation intention where participants wrote down the directed goal, location, and time of day. Results showed that the groups' baseline average changed from flossing once per week to 8 times a month for the control group and 20 times a month for the implementation intention group. Requiring participants to write down their directed goals and specify surrounding cues may have improved their ability to practice initiating the JGS rule until automaticity increased; however, presenting the JGS tactic as an intended goal is valid as it resembles the way such advice is usually passed on in the media or by word of mouth (Berns-Zare, 2018).

JGS efficacy could also be masked due to demand characteristics: participants may have increased their flossing simply by being in a flossing study, which may have outweighed any significant effects the JGS rule may have had or, if the effects were present, resulted in a ceiling effect that nullified any additional effect from the JGS rule. Afterwards, the increase in automaticity could be interpreted from the perspective of Bem's (1972) self-perception theory, in that participants used their newly increased flossing behaviour as a guide to interpret the strength of their perceived habit. This interpretation is plausible since, although not included in the present analysis, changes in flossing behaviour and habit strength between baseline and T2 were greater than those from T2 to T3, despite there being more instances of behaviour repetition by T3. This pattern is consistent with other research that shows early repetitions have a larger impact on automaticity than later repetitions (Lally et al., 2010). Therefore, future studies could

determine whether it is early repetitions or demand characteristics that are the main agent of this early behaviour increase. Additionally, the length of early repetition for habit building should also be studied further, to see where effects of initial motivation or demand characteristics end and where behaviour maintenance by an already-formed habit begins (Lally & Gardner, 2012).

Contrary to the outcome of the present study, there is an empirical basis for assuming that the JGS tactic should work. For instance, literature shows that "getting started" on aversive tasks changes how the tasks are then perceived. In a study by Pychyl et al. (2000), students who were actively procrastinating rated studying as unpleasant, difficult, and stressful, and were partaking of an enjoyable recreational activity at the time to avoid studying. Once they began the study session, however, the participants rated studying as significantly higher in pleasantness and lower in difficulty and stressfulness. Thus, studying was less aversive than initially anticipated, when the students were avoiding studying through procrastination. From this perspective, the JGS tactic should increase the likelihood of starting the task and then perceiving it to be less unpleasant than what was initially thought, which would then increase the likelihood of completing the task. Though pleasantness of the task was not assessed in our study, those who used the JGS rule did perceive that the rule helped them initiate and continue to floss more than rule non-users. And while the data showed that changes in flossing frequency and habit strength were not different between rule users and non-users, it is possible that the rule did help a small portion of those who used it. Conversely, the results suggest that people might readily assume the JGS tactic to be effective or pleasant when in fact it might not be. This might explain the present popularity of JGS-type tactics in the self-help literature, which are often accompanied by a few anecdotal success stories (Clear, 2018; Fogg, 2019). Either way, the JGS type tactic warrants more investigation.

A portion of this study found differences among those who have an established habit of flossing and those who rarely flossed. Of particular interest, however, is that there was a significant difference in parental encouragement of flossing in the childhoods of flossers and non-flossers. The small, positive correlations between flossing frequency and self-control, conscientiousness, and procrastination, were expected. We also found a strong correlation between flossing frequency and automaticity, which is consistent with other studies that show habit strength to be higher in those who flossed more prior to and during the study (Orbell & Verplanken, 2010; Judah et al., 2013).

This study had several limitations. First, small sample sizes undermined the validity of the findings. Also, insofar as samples mainly consisted of young, undergraduate students, results may not generalize to the broader population (Taylor et al., 2017). Research using larger, more diverse samples would increase external validity. Secondly, our study relied on self-report measures, which are vulnerable to various biases and errors in memory. More objective measures could be used in the future, although these would be difficult to administer outside of a lab setting. Future research should also focus on investigating the reliability and validity of self-report habit measures or their ability to monitor habit changes (Judah et al., 2018). Finally, future studies that aim to replicate these findings could improve the methodology to capture JGS rule use more accurately.

In conclusion, the present findings do not support the manner in which the JGS rule is often portrayed in the self-help literature. They instead suggest that the JGS tactic might not be a dependable solution for developing a habit of flossing, and perhaps for developing healthy habits in general.

References

Ajzen, I., Czasch, C., & Flood, M. G. (2009). From intentions to behavior: Implementation intention, commitment, and conscientiousness. *Journal of Applied Social Psychology*, *39*(6), 1356-1372. https://doi.org/10.1111/j.1559-1816.2009.00485.x

Bem, D. J. (1972). Self-perception theory. *Advances in Experimental Social Psychology*, *6*, 1-62.

Berns-Zare, I. (2018, November 17). *Just start: You don't have to like it to do it*. Psychology Today. https://www.psychologytoday.com/ca/blog/flourish-and-thrive/201811/just-start-you-don-t-have-it-do-it

Clear, J. (2018). *Atomic habits: An easy & proven way to build good habits & break bad ones*. Penguin.

Fogg, B. J. (2019). *Tiny habits: The small changes that change everything*. Eamon Dolan Books.

Gardner, B., Abraham, C., Lally, P., & de Bruijn, G. J. (2012). Towards parsimony in habit measurement: Testing the convergent and predictive validity of an automaticity subscale of the Self-Report Habit Index. *International Journal of Behavioral Nutrition and Physical Activity*, *9*(1), 1-12. https://doi.org/10.1186/1479-5868-9-102

Gollwitzer, P. M., Bayer, U. C., & McCulloch, K. C. (2005). The control of the unwanted. *The New Unconscious*, 485-515.

Haveman-Nies, A., de Groot, L. C. P., Burema, J., Cruz, J. A. A., Osler, M., & van Staveren, W. A. (2002). Dietary quality and lifestyle factors in relation to 10-year mortality in older Europeans: The SENECA study. *American Journal of Epidemiology*, *156*(10), 962-968. https://doi.org/10.1093/aje/kwf144

Judah, G., Gardner, B., & Aunger, R. (2013). Forming a flossing habit: An exploratory study of the psychological determinants of habit formation. *British Journal of Health Psychology*, *18*(2), 338-353. https://doi.org/10.1111/j.2044-8287.2012.02086.x

Judah, G., Gardner, B., Kenward, M. G., DeStavola, B., & Aunger, R. (2018). Exploratory study of the impact of perceived reward on habit formation. *BioMed Central Psychology*, *6*(1), 1-12. https://doi.org/10.1186/s40359-018-0270-z

Lally, P., & Gardner, B. (2012). Promoting habit formation. *Health Psychology Review.* https://doi.org/10.1080/17437199.2011.603640

Lally, P., Van Jaarsveld, C. H. , Potts, H. W., & Wardle, J. (2010). How are habits formed: Modelling habit formation in the real world. *European Journal of Social Psychology*, *40*, 998–1009. https://doi.org/10.1002/ejsp.674

Lally, P., Wardle, J., & Gardner, B. (2011). Experiences of habit formation: A qualitative study. *Psychology, Health & Medicine, 16*(4), 484-489. https://doi.org/10.1080/13548506.2011.555774

McCloskey, K., & Johnson, B. T. (2021). You are what you repeatedly do: Links between personality and habit. *Personality and Individual Differences*, *181*, 111000. https://doi.org/10.1016/j.paid.2021.111000

Orbell, S., & Verplanken, B. (2010). The automatic component of habit in health behavior: Habit as cue-contingent automaticity. *Health Psychology*, *29*(4), 374. https://doi.org/10.1037/a0019596

Park, S. W., & Sperling, R. A. (2012). Academic procrastinators and their self-regulation. *Psychology*, *3*(1), 12. http://dx.doi.org/10.4236/psych.2012.31003

Pychyl, T.A. (2010). *Solving the procrastination puzzle: A concise guide to strategies for change*. Penguin Group, New York, NY.

Pychyl, T. A., Lee, J. M., Thibodeau, R., & Blunt, A. (2000). Five days of emotion: An experience sampling study of undergraduate student procrastination. *Journal of Social Behaviour and Personality*, *15*(5), 239.

Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, *133*(1), 65. doi: https://doi.org/10.1037/0033-2909.133.1.65

Steel, P. (2010). The procrastination equation: how to stop putting things off and start getting things done. *New York: Harper Collins.*

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*(2), 271-324. https://doi.org/10.1111/j.0022-3506.2004.00263.x

Taylor, S.E., Sirois, F.M., & Molnar, D.S. (2017). *Health Psychology* (4th Canadian ed.). Toronto, ON: McGraw-Hill Education.

Uzun, B., LeBlanc, S., & Ferrari, J. R. (2020). Relationship between academic procrastination and self-control: The mediational role of self-esteem. *College Student Journal*, *54*(3), 309-316.

Zarick, L. M., & Stonebraker, R. (2009). I'll do it tomorrow: The logic of procrastination. *College Teaching*, *57*(4), 211-215. https://doi.org/10.1080/87567550903218687

Appendix

Table of Contents

Appendix A

Please enter a unique six letter code to make a unique participant ID under which your data will be saved. We recommend using the last 3 letters of your mom's name and the last 3 digits of your phone number. Please write down and save this ID.

Baseline Frequency:
Below, please indicate how often you floss. Please be as honest as possible. It is just as important to know the number of days you did not floss as it is the number of days you did.

1. How many days in total have you flossed most or all of your teeth in the past week? (Type number from 0-7 days.)

Background Experiences:
The following items assess background experiences that may be related to your flossing behaviour. Please indicate how true these statements are for you from 1 (Not at all true) to 5 (Very much true).

1. I maintain a consistent exercise routine.
2. I get 7-9 hours of sleep every night.
3. I always follow a healthy and balanced diet.
4. My parents or caregivers encouraged me to floss as a child.
5. My parents or caregivers consistently flossed their teeth.
6. Most college students my age floss.
7. I am strongly motivated to avoid getting cavities.
8. My teeth are easily susceptible to tooth decay or getting cavities.
9. I often visit the dentist.
10. I don’t floss as often as I should.
11. I often don’t feel like flossing.
12. I often find flossing to be unpleasant.
13. I am often too busy to floss.
14. I have had difficulty establishing a habit of flossing in the past.
15. I am strongly motivated to create a habit of flossing.
16. Overall, I feel that flossing is an important health habit to develop.

Using the scale provided, please indicate how the following statement reflects your overall health status from 1 (Very Poor) to 7 (Excellent).

17. How would you rate your overall health status?

Brief Self-Control Scale:
The following items are concerned with your self-control. Rate each item from 1 (Not at all like me) to 5 (Very much like me) by selecting the appropriate number on the scale.

1. I am good at resisting temptation.
2. I have a hard time breaking bad habits. (R)
3. I am lazy. (R)
4. I say inappropriate things. (R)
5. I do certain things that are bad for me, if they are fun. (R)
6. I refuse things that are bad for me.
7. I wish I had more self-discipline. (R)
8. People would say that I have iron self-discipline.
9. Pleasure and fun sometimes keep me from getting work done. (R)
10. I have trouble concentrating. (R)
11. I am able to work effectively toward long-term goals.
12. Sometimes I can't stop myself from doing something, even if I know it is wrong. (R)
13. I often act without thinking through all the alternatives. (R)

Tuckman Procrastination Scale:
For each of the items below, please indicate the extent to which the statement is most like you from 1 (That's not me for sure) to 4 (That's me for sure).

1. I needlessly delay finishing jobs, even when they're important.
2. I postpone starting on things I don't like to do.
3. When I have a deadline, I wait until the last minute.
4. I delay making tough decisions.
5. I keep putting off improving my work habits.
6. I manage to find an excuse for not doing something.
7. I put the necessary time into even boring tasks, like studying. (R)
8. I am an incurable time waster.
9. I'm a time waster now but I can't seem to do anything about it.
10. When something is too tough to tackle, I believe in postponing it.
11. I promise myself I'll do something and then drag my feet.
12. Whenever I make a plan of action, I follow it. (R)
13. Even though I hate myself if I don't get started, it doesn't get me going.
14. I always finish important jobs with time to spare. (R)
15. I get stuck in neutral even though I know how important it is to get started.
16. Putting something off until tomorrow is not the way I do it. (R)

BFI- Conscientiousness:
For each of the items below, please indicate the extent to which the statement describes you from 1 (Disagree Strongly) to 5 (Agree Strongly).

1. I see myself as someone who does a thorough job.
2. I see myself as someone who can be somewhat careless. (R)
3. I see myself as someone who is a reliable worker.
4. I see myself as someone who tends to be disorganized. (R)
5. I see myself as someone who tends to be lazy. (R)
6. I see myself as someone who perseveres until the task is finished.
7. I see myself as someone who does things efficiently.
8. I see myself as someone who makes plans and follows through with them.
9. I see myself as someone who is easily distracted. (R)

Behaviour Automaticity Scale:
For each of the items below, please indicate the extent to which you agree with the statement from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Flossing my teeth is something I do automatically.
2. Flossing my teeth is something I do without having to constantly remember.
3. Flossing is something I initiate without thinking.
4. Flossing is something I start doing before I realize I'm doing it.
5. Flossing is something I start doing with little effort.

Intention to Floss:
Please indicate how likely or unlikely you are to floss from 1 (Very unlikely) to 6 (Very Likely).

1. I intend to floss my teeth every day during the next 4 weeks.
2. I will try to floss my teeth every day during the next 4 weeks.
3. I plan to floss my teeth every day during the next 4 weeks.

Flossing Routine:
Please indicate the extent you agree with the following flossing routine from 1 (Strongly disagree) to 5 (Strongly Agree).

1. I always keep my floss beside my toothbrush.
2. When I floss, I floss in the same location every time.
3. When I floss, I floss at approximately the same time every day.
4. When I floss, I floss just before or just after I brush my teeth.

Instructions:

Why Flossing?

As mentioned, this study will be looking at the health behaviour of flossing. Flossing is an oral hygiene habit that is important for keeping your teeth healthy. It removes bacteria and plaque in the spaces where your toothbrush does not reach, and regular flossing helps prevent tooth decay, gum disease, and bad breath. Unfortunately, although flossing has been recommended by dentists for decades, some polls show that more than half of people skip this step. In fact, one study found that their fifty participants flossed an average of only 1.5 days in one month (Judah et al., 2013).

For this study, you are being asked to floss your teeth each day for the next 4 weeks. *[Extra paragraph for the "Just Get Started" manipulation:]* To facilitate this, some people find that just doing the first step of a behaviour can often help them continue the behaviour. For example, some people find that by just putting on their running shoes they are more likely to go for a run, or by simply washing one dish they are more likely to wash all the dishes. In this study, **we recommend that you try using this "just get started" tactic** to help you develop the habit of flossing. In other words, any time that you are tempted to skip flossing, for whatever reason, **floss at least one tooth** before making a final decision about whether or not to continue.

In two weeks' time, and then again at four weeks, you will receive an email asking you to complete some further questionnaires about your flossing behaviour (which should take no more than five minutes to complete). At four weeks, you will also receive a debriefing that outlines in more detail the purpose of the study and what we expect to find.

Appendix B

Please enter your unique six letter code under which your data is saved. We recommended using the last 3 letters of your mom's name and the last 3 digits of your phone number. Please continue saving this ID.

Flossing Behaviour - Week 2 - Control:
Below, please indicate how often you floss. Please be as honest as possible. It is just as important to know the number of days you did not floss as it is the number of days you did.

1. How many days in total have you flossed most or all of your teeth in the past week? [0-7]

Behaviour Automaticity Scale - Week 2 - Control:
For each of the items below, please indicate the extent to which you agree with the statement from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Flossing my teeth is something I do automatically.
2. Flossing my teeth is something I do without having to constantly remember.
3. Flossing is something I initiate without thinking.
4. Flossing is something I start doing before I realize I'm doing it.
5. Flossing is something I start doing with little effort.

Appendix C

Please enter your unique six letter code under which your data is saved. We recommended using the last 3 letters of your mom's name and the last 3 digits of your phone number. Please continue saving this ID.

Flossing Behaviour - Week 2 - JGS:
Below, please indicate how often you floss. Please be as honest as possible. It is just as important to know the number of days you did not floss as it is the number of days you did.

1. How many days in total have you flossed most or all of your teeth in the past week? [0-7]

2. In the past week, on how many of those days did you initiate flossing by applying the Just-Get-Started "one tooth" rule? [0-7]

3. If more than 0, on how many of these Just-Get-Started days did you floss most or all of your teeth? [1-7]

Overall - Week 2 - JGS:
Below, please indicate the extent to which you agree with the statement from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Overall, I feel that picking up the floss and flossing at least one tooth helped me continue flossing the rest of my teeth.

Behaviour Automaticity Scale - Week 2 - JGS:
For each of the items below, please indicate the extent to which you agree with the statement from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Flossing my teeth is something I do automatically.
2. Flossing my teeth is something I do without having to constantly remember.
3. Flossing is something I initiate without thinking.
4. Flossing is something I start doing before I realize I'm doing it.
5. Flossing is something I start doing with little effort.

Appendix D

Please enter your unique six letter code under which your data is saved. We recommended using the last 3 letters of your mom's name and the last 3 digits of your phone number.

Flossing Behaviour - Week 4 - Control:
Below, please indicate how often you floss. Please be as honest as possible. It is just as important to know the number of days you did not floss as it is the number of days you did.

1. How many days in total have you flossed most or all of your teeth in the past week? [0-7]

Behaviour Automaticity Scale - Week 4 - Control:
For each of the items below, please indicate the extent to which you agree with the statement from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Flossing my teeth is something I do automatically.
2. Flossing my teeth is something I do without having to constantly remember.
3. Flossing is something I initiate without thinking.
4. Flossing is something I start doing before I realize I'm doing it.
5. Flossing is something I start doing with little effort.

Appendix E

Please enter your unique six letter code under which your data is saved. We recommended using the last 3 letters of your mom's name and the last 3 digits of your phone number.

Flossing Behaviour - Week 4 - JGS:
Below, please indicate how often you floss. Please be as honest as possible. It is just as important to know the number of days you did not floss as it is the number of days you did.

1. How many days in total have you flossed most or all of your teeth in the past week? [0-7]

2. In the past week, on how many of those days did you initiate flossing by applying the Just-Get-Started "one tooth" rule? [0-7]

3. If more than 0, on how many of these Just-Get-Started days did you floss most or all of your teeth? [1-7]

Overall - Week 4 - JGS:
Below, please indicate the extent to which you agree with the statement from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Overall, I feel that picking up the floss and flossing at least one tooth helped me continue flossing the rest of my teeth.

Behaviour Automaticity Scale - Week 4 - JGS:
For each of the items below, please indicate the extent to which you agree with the statement from 1 (Strongly Disagree) to 5 (Strongly Agree).

1. Flossing my teeth is something I do automatically.
2. Flossing my teeth is something I do without having to constantly remember.
3. Flossing is something I initiate without thinking.
4. Flossing is something I start doing before I realize I'm doing it.
5. Flossing is something I start doing with little effort.