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THE USE OF A DAILY DIARY SYSTEM TO PROMOTE SELF-MONITORING AND IMPROVE HEALTH-RELATED IDENTITY AND SELF-EFFICACY

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ABSTRACT

Diet and exercise have been shown to have significant importance in predicting both physical and psychological well-being. However, there is little empirical evidence examining the effects of regular practices which encourage awareness on an individual's health-related identity and self-efficacy. This study examined the effects of a daily awareness-based intervention on health-related identity and self-efficacy. Fifty-four adults were allocated into either an 8-week control (n=25) or intervention group (n=29) and all completed a battery of measures designed to assess their health-related identity and self-efficacy. The intervention group were sent a daily email reminder for 8 weeks to log on to a computer website and answer a series of reflective questions. These questions related to the quality and volume of food and liquids consumed throughout the day, their mood, the type, intensity and duration of exercise which they engaged in throughout the day, and the amount of paid or unpaid work hours which they were engaged in throughout the day. Finally, participants were asked daily whether they aimed to achieve balance in any of their regular roles. The control group did not engage in any intervention during the 8-week phase. The 'daily diary' website and questions aimed to promote awareness of health behaviours, and results indicated the intervention group displayed a significant improvement in all variables, when compared with the control group.

Keywords*:* identity, self-efficacy, awareness, health

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INTRODUCTION

The physical and psychological importance of exercise and diet has been well documented in research (Briefel & Johnson, 2004). More recently, research has focused on investigating the benefits of exercise and diet for mental health and well-being. According to the Australian National Health Survey in 2011 and 2012 (Australian Bureau of Statistics [ABS], 2012), 54% of Australians aged 30 to 65 years of age reported that they did not engage in enough physical activity as per national guidelines, with sedentary behaviour increasing with age. Participants reported that the main barriers to engagement in physical activity included perceived lack of time (44%) and a lack of enjoyment of physical exercise (39%; ABS, 2012). However, it is

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clear that regular engagement in physical activity can prevent illnesses such as cardiovascular disease, cancer, diabetes and several mental health difficulties (Bauman et al., 2003).

Current research suggests one in every five Australians will also experience a mental illness in their lifetime, and mental illnesses are the third leading cause of disability burden. This accounts for an estimated 27% of the total years lost due to disability (Pirkis, Blood, Dare, & Holland, 2008). Men and women in Australia experience similar rates of mental illness, but rates are highest for men and women living alone, separated or divorced (ABS, 2012). We know mental illnesses can have many physical features, as well as psychological, and have profound physical effects such as insomnia, weight gain or loss, increase or loss of energy, chest pain and nausea (SANE Australia, 2012).

Diet

It is well known that worldwide, life expectancy is increasing. In order to reach a longer and healthier life, we need to focus on lifestyle choices, importantly, diet and physical activity (Kennedy, 2006). Studies indicate the global obesity epidemic has been accelerating for four decades (Gortmaker et al., 2011). Recent research (WHO, 2014) reports that obesity now represents the fifth leading cause of global deaths, with at least 2.8 million adults dying each year as a result of being overweight or obese, largely due to unhealthy eating behaviours. Overeating or the excessive consumption of foods which are nutritionally poor and energy-dense has been shown to cause physical illness such as diabetes, asthma, irritable bowel syndrome, cardiovascular problems, pain disorders and sexual functioning disorders (Hunter, Goodie, Oordt, & Dobmeyer, 2009). However, little is known about the influence of people's diet on their psychological well-being. What we do know is that several mental health issues are exacerbated by, and can be rooted in, suboptimal nutritional intake (Leyse-Wallace, 2013).

Anxiety, depression, eating and substance use disorders in particular, have been linked to a depleted nutritional status (Bodnar & Wisner, 2005). More specifically, Leyse-Wallace (2013) explained that irregularities in nutritional intake (i.e., starvation and food restriction) cause chemical and neurotransmitter dysfunction, which may in turn contribute to changes in mood and general cognitive function. Overeating, or excessive consumption of nutritionally poor and energy-dense foods, is also associated with various physical ailments including diabetes, asthma, irritable bowel syndrome and cardiovascular problems (Hunter, Goodie, Oordt, & Dobmeyer, 2009). Additionally, poor dietary quality has been linked to the onset of psychiatric conditions such as depression, by means of biological (i.e., lack of nutritionally valuable vitamins) and psychological factors (i.e., body dissatisfaction, guilt, shame and decreased self-efficacy) (Ackard, Neumark-Sztainer, Story, & Perry, 2003; Bodnar & Wisner, 2005).

Exercise

In terms of adequate intensity for health benefits, evidence has found that engaging in a moderate intensity exercise activity every day of the week has been linked with an increase in physical health (Bailis, Segall, & Chipperfield, 2003; Mustard, Vermeulen, & Lavis, 2003), an increase in physical functioning (Leino-Arjas, Solovieva, Riihimarki, Kirjonen, & Telama, 2004) and improved psychological well-being (Hassmen, Koivula,

& Uutela, 2000). Engagement in physical activity or exercise has been shown to be an effective primary and secondary treatment protocol for individuals with both physical and mental health concerns (Bauman et al., 2003; Sharma, Madaan, & Petty, 2006).

Understanding Health Choices through Theory

An individual's health behaviour choices are often contextualised through identity theory, which can be summarised as the process whereby an individual endorses a specific identity, and aims to engage in behaviours that will enable them to maintain an identity-behaviour congruence (Martin, Leary, & O'Brien, 2001). Individuals with higher healthy eating identities score lower on affect measures, and greater intentions to regulate future behaviour towards identity-behaviour consistency (Strachan & Brawley, 2008).

Social cognitive theory (Bandura, 1997) also posits the importance of a personal sense of control and self-efficacy in an individual's pursuit of health-related behaviours and outcomes. Self-efficacy has been shown to impact the outcomes of various health behaviours, including the effort invested into the health behaviour and perseverance in the face of challenges (Schwarzer & Luszczynska, 2005). Adults with a greater sense of dietary self-efficacy report greater consumption of fruit and vegetables, lower consumption of energy-dense foods and generally healthier food choices, despite the presence of potential barriers (Bere & Klepp, 2004; Lubans et al., 2012; Ievers-Landis et al., 2003), when compared with individuals with a lower sense of dietary self-efficacy.

Results of Anderson and Cychosz's early research (1995) investigating the relationship between exercise identity and exercise commitment showed a positive correlation between time spent exercising and a participant's exercise identity. Authors further concluded that a reciprocal relationship may exist between exercise identity and exercise behaviour, which may be reinforced through validation and recognition of significant others. A positive correlation exists between physiological indicators of fitness (i.e., oxygen consumption levels, body fat percentages and cholesterol levels) and exercise identity, and a strong, positive correlation between exercise behaviour and exercise identity (Anderson, Cychosz, & Franke, 1998). Engaging in exercise may promote an exercise identity, and the physiological responses to exercise may be an important factor in determining exercise identity.

Self-awareness and Self-monitoring with Health Identity

The act of learning to self-monitor and pay attention to one's own behaviour in the present moment can lead to greater self-awareness and insight, which may otherwise be unachievable in an environment rife with distraction and overstimulation (Bishop et al., 2004). Self-regulation theories, such as those mentioned, discuss that awareness and attention are vital in the maintenance and enhancement of psychological and behavioural functioning. Well-being may therefore be enhanced, through self-regulated activity whereby an individual chooses to fulfil a psychological need, making them more likely to keep engaging in that behaviour (e.g., exercise).

Self-monitoring has typically been taught as a skill in the weight loss and maintenance field. Monitoring – any food eaten, all foods eaten, time food was eaten, quantity of food eaten and grams of fat consumed – appears positively correlated with weight change (the recommendation to monitor on at least 75% of days). In addition, not monitoring at all appears negatively associated with weight change (Baker &

Kirschenbaum, 1993; Boutelle & Kirschenbaum, 1998). There is some suggestion too, that beyond dietary self-monitoring, the self-monitoring of exercise also contributes to successful weight loss. Greater self-monitoring of exercise has been significantly associated with fewer difficulties with exercise, higher levels of weekly exercise and greater weight loss (Carels et al., 2005).

Health identity and self-efficacy has continually been linked to the practice of being self-aware and learning to self-monitor (Saksvig et al., 2005). However, there is a lack of published empirical research investigating the potential reasons why some participants who hold healthy identities do not engage in health-related behaviours – is there a link between self-monitoring and self-awareness? The present study sought to examine this and assess whether engaging in a daily intervention based on increasing self-monitoring and self-awareness, would improve exercise adherence, and dietary intake and health-related identity and self-efficacy.

The Current Study

The present study utilised a daily act of recording eating- and exercise-related information online via a daily reminder message service (for 8 weeks) to increase self-monitoring and self-awareness in participants, and hypothesised this would improve health-related identity and self-efficacy. One group would receive the daily reminder message to record their behaviour, and another group would not.

It was hypothesised that participants in the intervention group would report significantly greater exercise identity, healthy eating identity, exercise self-efficacy, and healthy eating self-efficacy at post-intervention, when compared with participants in the control group. It was anticipated that the daily prompting message service would enhance self-awareness and attention.

METHOD

Participants

A total of 54 participants were allocated into the intervention (n = 29) and control groups (n = 25). The age of participants in both the control and intervention groups ranged from 18 to 65 years and the total sample consisted of 16 males and 38 females. The treatment group consisted of 9 males and 20 females, and the control group 7 males and 18 females. The mean age of the intervention group was 32.2 years (SD = 1.35), and the control group 35.7 years (SD = 1.07). The upper limit of 65 was chosen because several questions for the intervention group related to employment and 65 is the current age of retirement. All participants within the intervention and control groups were required to complete an online questionnaire package, which served as baseline data. Each set of questionnaires included a unique participant code that was used to match individuals' responses across all measurement points, whilst maintaining confidentiality. The questionnaire package involved several outcome measures, including: the Exercise Identity Questionnaire (Anderson & Cychosz, 1994), the Healthy Eating Habits Questionnaire (Dillman, 2012), the Exercise Self-efficacy Scale (Schwarzer & Renner, 2000) and the Nutrition Self-efficacy Scale (Schwarzer & Renner, 2000). Intervention participants engaged in the 8-week programme (detailed below) and then both groups again completed the online questionnaire package, after this 8-week period.

Design

The independent variable for this study was group, consisting of two levels including the intervention and control groups. The dependent variables (DVs) were: exercise identity (Exercise ID), healthy eating identity (Eating ID), exercise self-efficacy (Exercise SE) and healthy eating self-efficacy (Eating SE). The data was analysed through a series of repeated measures ANOVA. Prior to data analysis, the data was cleaned via standardised procedures for analysing missing data, patterned responses and unvarying data. There were no significant differences between the intervention and control group at pre-intervention on any of the DVs.

Sample Characteristics

A series of chi-square analyses were performed to determine whether the groups differed based on demographic variables. Results revealed no significant differences between groups in relation to gender $\chi2(1) = 0.59$, $p = 0.808$; age $\chi2(4) = 4.633$, $p = 0.327$; Exercise ID $\chi2(33) = 34.56$, $p = 0.393$; Exercise SE $\chi2(12) = 14.221$, $p = 0.287$; Eating ID $\chi2(25) = 28.795$, $p = 0.273$; Eating SE $\chi2(10) = 15.312$, $p = 0.121$. In summary, the two groups did not differ significantly at baseline.

Measures

Healthy-eater identity. The Healthy Eater Identity Scale (Strachan & Brawley, 2009) was used to assess participants' identity with respect to several healthy eating behaviours. A sample item includes "When I describe myself to other people, I usually include my involvement in healthy eating". Participants were required to rate the accuracy of statements on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). This scale has demonstrated high internal consistency ($\alpha = 0.89$; Dillman, 2012) and a strong criterion validity with existing indices of healthy eating behaviour (Cardinal, 1997). In the current study, this scale revealed high internal consistency ($\alpha = 0.87$).

Exercise identity. The Exercise Identity Scale (Anderson & Cychosz, 1994) was used to assess whether participants possess identities consistent with that of a frequent exerciser. A sample item includes "Physical exercise is a central factor to my self-concept". Participants rated items on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). In previous studies, this scale has demonstrated sound internal consistency in the empirical literature, with a Cronbach's alpha ranging from 0.61 to 0.89 (Dillman, 2012; Strachan & Brawley, 2008). In the current study, this scale demonstrated high internal consistency ($\alpha = 0.93$).

Healthy eating self-efficacy. The Nutrition Self-efficacy Scale (Schwarzer & Renner, 2000) was used to assess participants' beliefs regarding their ability to eat healthily. A sample item includes "I can manage to stick to healthy foods even if I do not receive a great deal of support from others when making my first attempts". Participants were required to rate the accuracy of statements on a 4-point scale ranging from 1 (definitely not true) and 4 (exactly true). This scale has been shown to possess sound internal consistency ($\alpha = 0.77$; Chang, Nitzke, & Brown, 2003), and strong construct validity (Kroll, Kehn, Ho, & Groah, 2007). In the current study, this scale revealed high internal consistency ($\alpha = 0.87$).

Exercise self-efficacy. The Exercise Self-efficacy Scale (Schwarzer & Renner, 2000) was used to assess participants' beliefs regarding their ability to initiate and pursue

active engagement in physical activity. A sample item includes “I can manage to carry out my exercise intentions even when I have worries and problems”. Participants were required to rate the accuracy of statements on a 4-point scale ranging from 1 (definitely not true) and 4 (exactly true). Previous studies have evidenced the internal consistency (α = 0.84; Motl et al., 2002) and construct validity (Shin, Yang, & Pender, 2001) of this measure. In the current study, this scale demonstrated high internal consistency, α = 0.86.

Procedure

Ethical approval was obtained from the Bond University Human Research Ethics Committee (BUHREC) prior to the commencement of intervention. Participants were recruited using an online advertisement through a variety of multimedia platforms including Facebook, LinkedIn and online community noticeboards. Participants were provided with an explanatory statement, which outlined the purposes and procedures of the research project, in order to obtain informed consent. Following completion of baseline questionnaires, participants were randomly allocated to either the intervention or control group via a computer-generated randomization. The control group consisted of participants who were not required to engage in any intervention programme that could potentially alter behavioural outcomes, therefore they did not receive the daily reminder to complete. The purpose of incorporating a control group was to make comparisons to the intervention participants who were taught the self-monitoring strategies.

During the treatment period, intervention participants were given free access to a digital database, in which participants were required to log-in daily and respond to a battery of questions related to the quality and volume of food and liquids consumed throughout the day (e.g., “How much water have you had today?”). Participants were also encouraged to document the type, intensity and duration of exercise which they engaged in throughout the day (e.g., “How much exercise have you done today?”). In the current study, exercise was defined as a measure of intensity and physical exertion, with levels of intensity ranging from strenuous to mild, where strenuous activities involved a significant increase in the participant’s heartbeat, moderate activities involved exercise that did not lead to participants feeling exhausted or fatigued upon completion, and mild activities involved minimal effort (Anderson & Cychosz, 1994). In order to ensure adherence, participants were sent a daily reminder via email to complete the daily diary. Diary entries were de-identified for the purposes of data analysis and interpretation. A unique participant code was used to match each participant’s diary entries. At the end of the 8-week intervention participants again completed the baselines measures, as did the control group who did not receive any intervention.

RESULTS

Data Cleaning

Prior to the above-mentioned statistical analysis being run, the data was analysed for missing data, patterned responses and unvarying data. This initial analysis revealed 22 cases with extensive missing data. These cases were removed from the data set. Furthermore, 12 cases showed patterned and unvarying data and were removed.

Therefore, the dataset was reduced from 88 to 54 cases (i.e., 29 cases from the intervention group and 25 cases from the control group). These cases were reviewed using a scatter matrix across each variable of interest. Upon further inspection of the scatter matrix, it appeared that three cases were identified as possible outliers. They did not affect the results and therefore were included in the data set, resulting in a final sample of 54 cases.

Descriptive Statistics

Descriptive statistics for the intervention and control groups on each of the dependent variables are displayed in Table 1. Variables with moderate skewness (± 1.96) were transformed using a square root transformation. Variables with severe skewness (± 2.58) were transformed using a log transformation. Data was analysed using both the original and transformed data, and showed the log transformed data followed a normal or near normal distribution therefore, all further data analysis utilised original data. Descriptive statistics for the intervention group reveal several noteworthy findings that occurred from pre- to post-treatment, including an increase in duration of exercise.

Table 1: ***Means and standard deviations for the dependent variables from the intervention and control groups at pre- and post-intervention***

	Pre				Post			
Variables	Mean (SD)	95% CI		Standardised Skew	Mean (SD)	95% CI		Standardised Skew
		Lower	Upper			Lower	Upper	
Exercise Identity Tx	42.87 (9.91)	39.10	46.62	42.87 (9.91)	49.34 (9.88)	45.58	53.10	-1.04
Exercise Self-efficacy Tx	12.10 (3.75)	10.68	13.53	12.10 (3.75)	18.07 (5.95)	15.81	20.33	-0.09
Healthy Eating Identity Tx	43.63 (8.19)	40.51	46.73	43.63 (8.19)	49.93 (7.22)	47.19	52.67	-0.82
Healthy Eating Self-efficacy Tx	12.38 (2.65)	11.37	13.39	12.38 (2.65)	18.82 (4.94)	16.95	20.71	0.10
Exercise Identity Control Tx	36.00 (11.98)	31.05	40.94	0.35	33.92 (11.98)	28.24	39.59	0.33
Exercise Self-efficacy Control	12.68 (2.91)	11.47	13.88	0.20	13.04 (3.96)	11.41	14.67	-0.16
Healthy Eating Identity Control	41.00 (9.93)	36.89	45.10	0.38	39.88 (11.71)	35.05	44.71	0.03
Healthy Eating SControl	14.48 (2.86)	13.29	15.66	-0.03	13.44 (2.90)	12.24	14.63	-0.45

Tx = Treatment

Repeated Measures ANOVA

Exercise identity. Before conducting analyses, the appropriate assumptions were checked and confirmed for all variables. A 2 x 2 repeated measures ANOVA was used to investigate the impact of time on exercise identity. A significant main effect of time was obtained, F (1, 52) = 7.42, p = 0.009, partial η^2 = 0.12, with exercise-identity levels at pre-intervention (M = 39.43) being significantly lower than at post-intervention (M = 41.63). A significant main effect of group was indicated, F (1, 52) = 13.82, p < 0.001, partial η^2 = 0.21, with exercise-identity levels of intervention group participants (M = 46.10) being significantly higher than control group participants (M = 34.96).

A significant interaction between time and group was revealed, F (1, 52) = 28.08, p < 0.001, partial η^2 = 0.35. Pairwise comparisons indicated that a significant difference (p < 0.001) was found between the intervention and control groups (M = 11.14). Post hoc tests revealed that exercise-identity scores for both the intervention group (p < 0.001) and the control group (p < 0.001) significantly increased from pre- to post-intervention but that individuals within the intervention group reported a greater sense of exercise identity than control group participants.

Healthy eating identity. A 2 x 2 repeated measures ANOVA was used to investigate the impact of time on healthy eating identity. A significant main effect of time was obtained, F (1, 52) = 12.02, p = 0.001, partial η^2 = 0.19, with healthy eating identity at pre-intervention (M = 42.31) being significantly lower than healthy eating identity levels at post-intervention (M = 44.91). A significant main effect of group was indicated, F (1, 52) = 6.82, p = 0.012, partial η^2 = 0.12, with healthy eating identity levels of intervention group participants (M = 46.78) being significantly higher than control group participants (M = 40.44).

A significant interaction between time and group was revealed, F (1, 52) = 24.63, p < 0.001, partial η^2 = 0.32. Pairwise comparisons indicated that a significant difference (p = 0.012) was found between the intervention and control groups (M = 6.34). Post hoc tests revealed that healthy eating identity scores for the intervention group (p < 0.001) significantly increased from pre- to post-intervention, while there was no statistically significant change in scores for the control group from pre- to post-intervention (p = 0.263). The intervention group participants reported greater healthy eating identity than control group participants.

Exercise self-efficacy. A 2 x 2 repeated measures ANOVA was used to investigate the impact of time on exercise self-efficacy. A significant main effect of time was obtained, F (1, 52) = 28.48, p < 0.001, partial η^2 = 0.35, with exercise self-efficacy at pre-intervention (M = 12.39) being significantly lower than exercise self-efficacy at post-intervention (M = 15.54). A significant main effect of group was indicated, F (1, 52) = 4.70, p = 0.035, partial η^2 = 0.08, with exercise self-efficacy levels of intervention group participants (M = 15.09) being significantly higher than control group participants (M = 12.86).

A significant interaction between time and group was revealed, F (1, 52) = 22.37, p < 0.001, partial η^2 = 0.30. Pairwise comparisons indicated that a significant difference (p = 0.035) was found between the intervention and control groups (M = 2.23). Post hoc tests revealed that exercise self-efficacy scores for both the intervention group (p< 0.001) and the control group (p = 0.023) significantly increased from pre- to post-

intervention, however, individuals within the intervention group reported greater exercise self-efficacy than control group participants.

Healthy eating self-efficacy. A 2 x 2 repeated measures ANOVA was used to investigate the impact of time on healthy eating self-efficacy. A significant main effect of time was obtained, F (1, 52) = 18.53, $p < 0.001$, partial $\eta^2 = 0.26$, with healthy eating self-efficacy levels pre-intervention (M = 13.43) being significantly lower than healthy eating self-efficacy levels at post-intervention (M = 16.13). A significant main effect of group was indicated, F (1, 52) = 5.19, $p = 0.027$, partial $\eta^2 = 0.09$, with healthy eating self-efficacy levels of intervention group participants (M = 15.60) being significantly higher than control group participants (M = 13.96).

A significant interaction between time and group was also found, F (1, 52) = 35.52, $p < 0.001$, partial $\eta^2 = 0.40$. Pairwise comparisons indicated that a significant difference ($p = 0.027$) was found between the intervention and control groups (M = 1.64). Post hoc tests revealed that healthy eating self-efficacy scores for the intervention group ($p < 0.001$) significantly increased from pre- to post-intervention, but there was no statistically significant change in scores for the control group from pre- to post-intervention ($p = 0.263$). The intervention group participants reported greater healthy eating self-efficacy than control group participants.

DISCUSSION

This study sought to investigate whether a self-monitoring practice (i.e., daily diary entries) enhanced individuals' exercise identity, exercise self-efficacy, healthy eating identity and healthy eating self-efficacy. As expected, participants within the intervention programme displayed a significant improvement in all variables when compared with the control group.

Identity Theory in Exercise and Healthy Eating

The intervention group participants exhibited significantly greater exercise identities when compared with the control group, and this finding is consistent with empirical studies that indicate identity can be improved through the introduction of self-awareness practices (Chang et al., 2004; Kristeller & Wolever, 2010). Given the significance of identity and self-efficacy in improving health behaviours, the findings in the present study are particularly important. The intervention group also reported greater healthy eating identity compared with the control group, and this may have implications for treatment planning, in that targeting and improving an individual's belief in his or her ability to maintain a healthy diet may lead to additional improvements in other health-related areas. Overall, health-related identity appeared to significantly improve following the intervention participants' completion of the daily diary over the 8-week period, which further implies that health-related identity may be shifted or modified using self-awareness and monitoring practices.

Self-efficacy in Exercise and Healthy Eating

Exercise self-efficacy was significantly greater for the intervention group and this finding suggests that self-awareness and monitoring practices may be effective in improving individuals' belief in their ability to successfully achieve their exercise goals

despite the presence of potential obstacles. The intervention participants also reported greater healthy eating self-efficacy compared with the control group, and this suggests that healthy eating self-efficacy is amenable to change and improvement though self-awareness and monitoring practices, in line with established literature (e.g., Schnoll & Zimmerman, 2001).

Overall, health-related self-efficacy appeared to significantly improve following the intervention participants' completion of self-awareness and monitoring practices. Given the strong association between self-efficacy and behavioural performance as demonstrated in previous studies (see Schwarzer & Luszczynska, 2000), these findings have significant implications for improving health-related behaviours. The practical implication of this finding is that greater exercise self-efficacy is associated with increased engagement in behavioural performance, which is useful to consider when tailoring exercise and diet programmes to improving health behaviours.

Strengths and Limitations

A particular strength of the current research is that, despite the smaller sample size, the study was successful in recruiting individuals across different age groups. This is likely to improve the generalisability of the study to the general population. Another strength of the current study is the nature of the study design, which allowed greater adherence to completion of daily diaries due to the convenience of the online function.

Nonetheless, the current study was not without limitations, primarily the fact that data was self-reported and thus susceptible to various effects including social desirability and impression management. This study only examined increasing attention to diet and exercise behaviours, not actually improving those behaviours if they were lacking in quality (e.g., making better dietary choices). Future research could collect this data and investigate the changes that may occur in actual behaviour alongside increasing attentional awareness.

The current study could have also been improved by collecting more longitudinal data, such as a 3- or 6-month follow-up. This may have allowed further examination of stability of change over time, and thus more powerful conclusions regarding self-awareness and regulation with behavioural change. Finally, the participant group was small, thus reliability and generalisation to a wider sample is difficult to conclude, and the inclusion of a social desirability measure may have been useful to investigate any impact of positive impression management.

IMPLICATIONS AND CONCLUSIONS

Results of the current study have provided preliminary evidence for the benefits associated with self-awareness and monitoring practices in improving health-related outcomes across more than one area. The 8-week daily diary intervention was associated with improved exercise and healthy eating identity, and simultaneous improved exercise and healthy eating self-efficacy in the intervention group when compared with the control group.

There is little empirical literature examining the effect of self-awareness and monitoring strategies upon health-related identity and self-efficacy. As such, the current study sought to address limitations in previous research by investigating the impact of a daily reminder service for a website-based self-awareness strategy in improving identity and self-efficacy, and thus behavioural performance. Results may be useful in informing clinicians designing and tailoring treatment programmes for improving specific health behaviours and outcomes, and including a consistent reminder service for engaging in such behaviours.

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This project represented research conducted as part of the Masters of Clinical Psychology program for dissertation requirements. The research interest centred on whether logging daily habits would change health behaviour and identity.

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