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When College Students Look after Themselves: Self-Care Practices and Well-Being

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Research has shown that psychological well-being is positively associated with student engagement, persistence, and performance. To learn more about the behaviors that underlie well-being, 206 (predominantly female) university students completed measures of well-being and six self-care practices. Four such practices (mindful acceptance, seeking social support, sleep hygiene, and food habits) uniquely predicted well-being, but physical exercise did not. Findings can aid the development and implementation of interventions to increase self-care and well-being in student populations.

The college years can be a time of heightened distress (Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010), with mental health problems disproportionately common in college populations (Stallman, 2010). Transitioning into college life may be especially stressful (Cooke, Berwick, Barkham, Bradley, & Audin, 2006). Of particular relevance to student affairs professionals is evidence that students' well-being is positively associated with their engagement, persistence, and success in higher education (Antaramian, 2015; Hartley, 2011). These linkages between student psychosocial adjustment and academic progress and performance highlight the need for effective college-based mental health and well-being promotion programs (Stallman & Shochet, 2009). To develop and implement such programs, factors that enhance student adjustment need to be identified. The current study investigated several behavioral practices that support students' well-being.

Relatively little research has investigated practices that promote psychological well-being. In accord with contemporary positive psychology perspectives (e.g., Seligman, 2008), and in line with the World Health Organization's (1948) conception of health as a complete state of physical, mental, and social well-being and not merely the absence of disease or infirmity, the current study sought to identify behaviors that support and maintain college students' well-being rather than merely alleviate

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psychological distress. Our focus was on behaviors as they occur naturally, rather than on those resulting from training programs or other planned interventions. The specific questions under investigation were:

- What relationships exist between self-care practices and student well-being?
- Which specific practices are most and least closely associated with increased well-being?

By addressing these questions, the study contributes evidence and insights that may be used in interventions to promote students' self-care and enhance their well-being. Indirect consequences of such initiatives may include higher rates of student academic engagement and performance.

Self-Care Practices

Self-care practices are self-initiated activities that maintain and promote physical and emotional health (Myers et al., 2012) and include healthy eating, sleeping, exercising, and socializing behaviors. Self-care practices accentuate the positive aspects of health and well-being. Such practices may be particularly important during the college years because at this life-stage, young people are undergoing major developmental transitions and challenges (Arnett, 2000). College students are susceptible to experiencing psychological distress, and during times of high stress, self-care and other health behaviors tend to be practiced less often (Weidner, Kohlmann, Dotzauer, & Burns, 1996). Many students also are at a time of life in which they are gaining autonomy from parents and are becoming increasingly responsible for their own health and well-being (Walker, Sechrist, & Pender, 1987). Thus, there is a need for young people to participate in behaviors that protect and enhance their health, not only in the short term but also for longer term benefits (Viner & Barker, 2005).

Studies of self-care practices, especially those adopted by college students, fall into three main categories: descriptive, correlational, and intervention studies. Descriptive studies document the prevalence of various self-care practices but do not investigate likely antecedents or consequences of these behaviors. Such studies have repeatedly shown the difficulties that students have in establishing and maintaining health-promoting behaviors, including physical activity (e.g., Irwin, 2004), healthy eating (Wardle et al., 1997), and sleep hygiene (Forquer, Camden, Gabriau, & Johnson, 2008).

The second type of research, correlational studies, seeks to identify links between health-related behaviors, including self-care practices, and antecedent and/or consequent conditions. One study of this kind, Myers et al. (2012), provided the foundation for the current research. This study examined the relationships between eight self-care practices and perceived stress in a sample of 488 clinical psychology graduate students. Results revealed that five practices—healthy sleep patterns, perceived social support, mindful acceptance, expressive suppression, and positive cognitive reappraisal—were negatively associated with perceived stress, after controlling for the effects of demographic variables. Contrary to predictions, three other practices—engagement in exercise, mindful awareness, and frequency of formal mindfulness practice—were unrelated to stress.

The third kind of research, intervention studies, evaluates the impact of self-care practices on participant health and/or well-being. While these studies can guide the design and implementation of programs aimed at increasing participation in self-care practices (Stark, Manning-Walsh, & Vliem, 2005), they typically assess the effects of practices that are planned and highly structured, rather than those that are self-initiated and naturally-occurring.

We review studies of these three types as applied to the self-care practices of mindfulness, physical exercise, food habits, social support seeking, and sleep hygiene.

Mindfulness

Mindfulness practice may be defined as the state of being attentive to and accepting of what is taking place in the present (Brown & Ryan, 2003). Correlational studies (e.g., Michalak, Teismann, Heidenreich, Ströhle, & Vocks, 2011) have shown links between mindfulness practices and student well-being. Positive effects have been observed in interventions targeting college students (Caldwell, Emery, Harrison, & Greeson, 2011; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). Together, this mindfulness literature suggests that the acquisition and development of mindfulness practice is associated with decreases in emotional distress as well as the presence of more positive states (Greeson, 2009).

Mindfulness is commonly conceptualized as comprising two components: awareness and acceptance (Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008). Awareness implies undivided attention to what is happening in the present moment, whereas acceptance indicates a curious and non-judgmental openness to current experiences and stimuli, including other people, situations, and events. Myers et al. (2012) found that mindful acceptance but not mindful awareness was negatively associated with perceived stress. One possible explanation for this unexpected finding is that awareness predicts well-being only in the presence of acceptance. Consistent with this, Stanton, Kirk, Cameron, and Danoff-Burg (2000) observed that prolonged use of emotional processing (a cognitive coping strategy similar to mindful awareness), without opportunities to express these emotions, may be maladaptive. Myers et al. did not test the proposition that the efficacy of mindful awareness is contingent upon levels of mindful acceptance, but the current study aimed to do so.

Physical Exercise

Myers et al. (2012) demonstrated that physical exercise was unrelated to perceived stress. Other correlational studies, including some that used college-aged respondents, showed that regular engagement in physical exercise has positive mental health correlates (Hassmén, Koivula, & Uutela, 2000; Penedo & Dahn, 2005). Intervention studies are also supportive of the positive effects of physical exercise. A cautionary note was, however, issued by Hall, Ekkekakis, and Petruzzello (2002), who found that, although duration of physical exercise was generally associated with improved mood, there was a dip in mood evident at high exercise intensity levels.

Food Habits

During times of stress (e.g., exam periods), college students (including those who consider themselves healthy) often engage in poor eating habits (Kandiah, Yake, Jones, & Meyer, 2006), which is important in part because of the growing evidence of a link between quality of diet and psychological disorders, such as anxiety and depression (Jacka, Mykletun, & Berk, 2012; Weng et al., 2012). Intervention studies (e.g., Ha & Caine-Buish, 2009) report success in increasing college students' consumption of fruit and vegetables while also decreasing intake of French fries.

Social Support

Correlational research generally reveals positive relationships between social support and psychological outcomes (Baker & Robnett, 2012; Turner et al., 2005). In a study involving 1,378 university students, Hefner and Eisenberg (2009) found social support was negatively associated

with levels of depression, anxiety, suicidal ideation, non-suicidal self-injury, and eating disorders. Other research showed social support-enhancing interventions can facilitate students' transition into college (Baker & Robnett, 2012; Mattanah, Ayers, Brand, & Brooks, 2010).

Myers et al. (2012) found social support to be negatively correlated with perceived stress, but the variable measured in that study pertained to perceptions of received support, rather than the activity of seeking, building, and maintaining support. The current study aimed to investigate the contribution of social support as an active self-care practice, rather than a more passive state, as measured by Myers et al.

Sleep Hygiene

Sleep problems are common among college students (Forquer et al., 2008), with stress found to be a factor contributing to such disturbances (Verlander, Benedict, & Hanson, 1999). Correlational research has indicated the importance of sleep in relation to university students' well-being (Pilcher & Ott, 1998). Research suggests that sleeping habits can be improved through planned interventions. For example, Trockel, Manber, Chang, Thurston, and Tailor (2011) found that a cognitive behavioral self-help program resulted in improved college students' sleep and reduced depression symptoms.

The Current Research

The aim of the current study was to investigate relationships between college students' engagement in a range of physical, cognitive, and social self-care practices and their level of psychological well-being. The study focused on the self-care practices described above on the grounds either that (a) descriptive studies have shown these practices to be infrequently adopted by college students, yet (b) correlational studies suggest that these practices are positively associated with psychological health, and/or (c) intervention studies provide evidence that these practices can be increased through planned programs with consequent benefits for participant well-being. The evidence to date is, however, lacking, with the study by Myers et al. (2012) being one of few to examine the unique effects of multiple self-care practices. To assist in enhancing college student well-being, further research is required into the mental health-enhancing correlates of these practices.

The study extended Myers et al.'s (2012) study in ways that address several limitations of that study. First, Myers et al. used a three-item measure of physical activity that lacked internal consistency, and this could partly explain the non-significant effect obtained. The current study used a more robust, widely validated measure. Second, Myers et al. measured social support received, rather than the self-care practice of seeking, building, and maintaining support from other people. As self-care practices are defined as self-initiated behaviors, a new scale was developed to measure the *activity* of seeking social support. Third, Myers et al. noted that their results may have been influenced by recent stressful life situations and events that overshadowed the effects of self-care practices. The current study statistically controlled for the effects of stressful life events.

The following hypothesis was tested: After controlling for effects associated with gender, age, and recent exposure to stressful life events, college student well-being increases with engagement in the self-care practices of (a) healthy eating, (b) mindful awareness, (c) mindful acceptance, (d) physical exercise, (e) actively seeking social support, and (f) sleep hygiene.

Method

Participants

The sample comprised 206 undergraduate students from a single Australian public university. After exclusion of three cases due to patterned responses, the sample size was 203 (165 females, 38 males). Ages ranged from 18 to 30 years ($M = 20.87$; $SD = 3.31$). Of the 203 participants, 91% were studying full time, 48% were employed on a part- or full-time basis, 52% lived with their parents at home, and 23% lived in shared accommodation. In addition, convenience samples of six and ten students participated in two preliminary focus groups, and 60 further students assisted in pilot testing the questionnaire.

Materials

We used an online questionnaire to measure self-care practices, well-being, demographic factors, and recent exposure to stressful life events.

Mindfulness. The Philadelphia Mindfulness Scale (Cardaciotto et al., 2008) is a 20-item self-report questionnaire designed to measure self-reported levels of mindfulness. The scale comprises separate 10-item subscales measuring mindful awareness and mindful acceptance. Sample items are: “When I am startled, I notice what is going on inside my body” (awareness) and “I try and distract myself when I feel unpleasant emotions” (acceptance, reverse-scored). Responses are required on a 5-point scale from *never* (1) to *very often* (5), with higher scores indicating greater levels of acceptance and awareness, respectively.

Physical Exercise. The International Physical Activity Questionnaire (Short Last 7 Days form) (Booth, 2000; Craig et al., 2003) is structured to provide separate scores for three types of activities: walking, moderate-intensity activities, and vigorous-intensity activities. A sample item is “During the last 7 days, how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast cycling?” Computation of the total score requires summation of the duration (in minutes) and frequency (in days) of these three types of activities and multiplication by MET (metabolic energy) values based on the average amounts of oxygen consumed in performing these three types of physical activities.

Food Habits. The 23-item Adolescent Food Habits Checklist (Johnson, Wardle, & Griffith, 2002) was used to assess participants’ engagement in healthy eating habits. Items such as “I usually avoid eating fried foods” required a *True* or *False* response, with 10 items also offering a “not applicable” option. Participants received one point for each “healthy” response. Using Johnson et al.’s formula, final scores were adjusted for missing and not applicable responses.

Social Support. As no suitable existing scale could be located, the self-care practice of seeking social support was assessed using a scale developed for the current study. Two focus groups aided in scale development. These group discussions pertained to different ways in which individuals can, and do, seek social support and use their resources to maintain social support. Themes were identified from the interview transcripts and used to generate items. Drafts of potential items were included in two pilot questionnaires (completed by two independent samples, both $n = 30$) to assess psychometric properties. Items were retained in the final scale based on multiple criteria, including content validity and contribution to internal consistency.

The final scale comprised 11 items, each of which required respondents to indicate the extent to which they engaged in a specific activity related to social support-seeking. A sample item is: “Join new groups (e.g. sporting, hobby, interest groups)?” Items were answered on a 5-point scale from 1 (*not at all*) to 5 (*a lot*). Responses were averaged, with higher scores indicative of greater

engagement in social support-seeking. The scale showed strong reliability in the pilot sample, Cronbach's $\alpha = 0.93$. A copy of this scale is available from the authors.

Sleep. The Sleep Hygiene Index (Mastin, Bryson, & Corwyn, 2006) is a 13 item self-report measure assessing sleep hygiene behaviors. Participants indicate how often they engaged in various sleep-related behaviors on a scale from 1 (*never*) to 5 (*always*). Items include "I think, plan, or worry when I am in bed." To improve the psychometric properties of the scale and reduce respondent burden, five of the original 13 items were removed. Responses to the remaining eight items were averaged, with higher scores indicating more frequent hygienic sleep-related behaviors.

Well-Being. The 7-item General Well-being Measure (McDonald-Miszczak, Wister, & Gutman, 2001) was used to measure well-being. Participants were asked "How much of the time within the past month have you felt the following?" Items included "depressed," "in control," and "satisfied with life." Possible responses ranged from 1 (*none of the time*) to 4 (*all of the time*). Following reversal of negatively worded items, responses were summed with higher scores reflecting greater well-being.

Life Stressor Events. The experience of recent stressful life events was measured with a single item based on those used in past studies (e.g., Fagan & Najman, 2003). The item asked participants if they had experienced any seriously upsetting event in the past six months, with responses coded as either 0 (for those who answered in the negative, $n = 91$) or 1 (for those who answered affirmatively, $n = 112$).

Procedure. Participation was voluntary, although as an incentive, participants were given the opportunity to enter a draw to win a \$50 gift voucher. Recruitment was through a university course website and through other e-mail and Facebook contacts. Participants clicked on the link to the questionnaire, read an information sheet, answered the questions, and then submitted anonymously online.

Limitations

The study had three major limitations. First, the sample was not large, was predominantly female, and came from a single Australian public university. Second, the study design was cross-sectional, meaning that all findings are correlational and causation cannot be inferred. Third, all data were obtained via self-report, and this method has several known weaknesses. Response biases and common method biases may have distorted values of single variables and inflated the relationships between variables. The length of the questionnaire could have adversely affected participant motivation, with consequent reductions in the quality of responses. The single item measure of stressor exposure may have had limited validity: a multi-item instrument (e.g., Gadzella, 1994) may have provided greater content validity. Responses to some of the self-care scales may have been affected by the presence, or the sequencing, of other scales.

Results

Descriptive statistics including standardized skew statistics and alpha coefficients are found in Table 1. Due to the multiplicative method of its computation (that is, exercise duration x frequency), physical activity showed highly significant positive skew. This variable was transformed using square root and log transformations. Analyses using both the original and transformed data revealed little substantive difference in results. For ease of interpretation, analyses based on the raw data are reported. As shown in Table 1, while physical activity was not

Table 1

Descriptive Statistics and Correlations Between the Continuous Variables (n = 201)

	Mean	SD	Stdd Skew	Alpha	2	3	4	5	6	7	8	9
1. Food habits	13.2	4.35	-2.86	0.77	0.26	0.11	0.20**	0.20**	0.23**	0.25***	-0.07	0.04
2. Acceptance	28.0	6.93	-0.27	0.88		-0.14*	0.05	-0.04	0.51***	0.48***	0.19**	-0.14*
3. Awareness	35.4	5.46	2.27	0.82			-0.02	0.28***	-0.05	0.15*	0.20**	0.19**
4. Physical activity	5163	4878	14.5	-				0.04	0.13	0.13	0.05	0.20
5. Social support	36.4	6.35	-0.87	0.82					0.06	0.30***	-0.06	0.30
6. Sleep	21.8	5.09	2.38	0.78						0.43***	0.20**	-0.19
7. Well-being	21.4	3.55	-3.24	0.83							0.19**	-0.04
8. Age	20.9	3.31	7.30	-								0.02
9. Life events	-	-	-	-								

p* < 0.05. *p* < 0.01. *** *p* < 0.001.

significantly correlated with well-being, and mindful awareness was only marginally so, the remaining four self-care practices were highly and positively associated with well-being. Not shown, females reported healthier food habits ($p = 0.017$), while males reported greater physical activity ($p = 0.031$). The genders did not differ on the other study variables.

The hypothesis was tested using hierarchical multiple regression analysis, with well-being as the criterion variable. Two cases were excluded as they violated regression diagnostics and had substantial influence on the overall regression model (final $n = 201$). Gender and age were entered at Step 1 of the analysis, with life events at Step 2, and the six self-care practice variables at Step 3. Results are summarized in Table 2

As shown, gender and age entered at Step 1 accounted for 4% of the variance in well-being, $F(2, 198) = 3.62, p = 0.029$. Life events entered at Step 2 accounted for a non-significant < 1% additional variance, $F_{cbg}(1, 197) = 0.23, p = 0.631$. The self-care variables entered at Step 3 together explained an additional 38% of the variance, $F_{cbg}(6, 191) = 20.74, p < 0.001$. Mindful acceptance was the strongest predictor of well-being, explaining 12% unique variance, followed by social support (6%), sleep patterns (2%), and food habits (2%). Neither mindful awareness nor physical activity was a significant predictor of well-being. Overall, 42% of the variance in well-being was accounted for by the full set of variables, $F(9, 191) = 20.74, p < 0.001$.

We performed supplementary analyses to shed light on the non-significant effects associated with mindful awareness and physical activity. First, given some prior evidence that high levels of

Table 2.

Summary of Hierarchical Regression Analysis for Variables Predicting Well-Being (n = 201)

Step	Predictor	95% CI (B)				β	sr^2
		B	SE (B)	Lower	Upper		
1.	Gender	-0.26	0.64	-1.52	1.01	0.18	-0.001
	Age	0.20	0.08	0.05	0.34	0.18	0.03
2	Gender	-0.20	0.65	-1.50	1.09	-0.02	< 0.001
	Age	0.20	0.08	0.05	0.35	0.18	0.03
	Life events	-0.24	0.51	-1.24	0.76	-0.03	-0.001
3	Gender	-0.54	0.55	-1.62	0.55	-0.06	-0.003
	Age	0.08	0.06	-0.05	0.20	0.07	0.005
	Life event	0.11	0.41	-0.71	0.92	0.02	< 0.001
	Food habits	0.12	0.05	0.02	0.22	0.15*	0.02
	Acceptance	0.21	0.03	0.14	0.28	0.41***	0.12
	Awareness	0.07	0.04	-0.01	0.15	0.11	0.01
	Physical activity	2.38	0.00	0.00	0.00	0.03	0.01
	Social support	0.15	0.03	0.08	0.21	0.26***	0.06
	Sleep	0.11	0.05	0.01	0.20	0.15*	0.02

Note. R^2 at Step 1 = 0.04*; R^2 at Step 2 = 0.04 ($\Delta R^2 = 0.001$); R^2 at Step 3 = 0.42 ($\Delta R^2 = 0.38***$).

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

awareness may be felt as overwhelming and hence as distressing and other evidence that optimum well-being may be achieved at intermediate rather than very high levels of physical exercise, we re-ran the regression analysis with the addition, at a fourth step (in separate analyses), of a term representing the centered value of one of these self-care practices raised to the power of two. A finding of significant incremental variance associated with this product term would provide evidence of a non-linear (quadratic) relationship with well-being. Results revealed that neither of these squared values added significantly to the prediction of well-being, $\beta = -0.04$, $p = 0.542$ (awareness) and $\beta = -0.10$, $p = 0.433$ (exercise). Thus, there was no evidence that intermediate (rather than high) levels of mindful awareness, or of physical exercise, is associated with optimal well-being.

Second, given the sample's gender imbalance, we examined correlations between each of the self-care practices and well-being separately for females and males. A gender difference was found for one variable only: the correlation between mindful awareness and well-being was $r = -0.05$ for males and $r = 0.21$ for females, $p < 0.05$, $z = -2.58$, $p < 0.01$. When we repeated the regression analysis using female respondents only, mindful awareness predicted well-being, $\beta = 0.14$, $p = 0.030$, as did all other self-care practices except physical exercise, $\beta = 0.05$, $p = 0.461$.

Finally, to test the proposition that awareness predicts well-being only in the presence of acceptance, we ran the regression analysis with the addition, at a fourth step, of a term representing the product of the centered values of awareness and acceptance. A finding of significant incremental variance associated with this interaction term would indicate that the effect of each kind of awareness was conditional upon the value of the other. Results revealed a significant interaction, $\beta = -0.16$, $p = 0.012$; simple slopes analyses indicated the presence of an attenuating, rather than an enhancing, effect. Thus, the positive effect of mindful acceptance decreased (rather than increased) as awareness increased, which suggests that each aspect of mindfulness may compensate for the lack of the other. Repeating this analysis with just the female respondents revealed a significant effect associated with awareness, $\beta = 0.15$, $p = 0.025$, and a marginally significant Awareness x Acceptance interaction, $\beta = -0.13$, $p = 0.054$.

Discussion

This study examined the role of self-care practices in the well-being of college students. Analyses revealed that, controlling for gender, age, and recent life stressor exposure, six self-care practices together accounted for a sizeable amount (38%) of variance in well-being. Results confirm Myers et al.'s (2012) findings of significant relationships between psychological adjustment and each of mindful acceptance, sleep hygiene, and social support, and non-significant effects associated with mindful awareness and physical activity. These similarities in findings are noteworthy given that (a) the current sample comprised Australian undergraduates whereas Myers et al. sampled U.S. graduate students, and (b) the outcome variable was well-being in the current study and perceived stress in the Myers et al. study. Further points of comparison between the two studies are explored in the following.

First, a similarity of considerable interest is that mindful acceptance was by far the strongest unique predictor of the criterion variable in both studies. Second, both studies found that mindful awareness was not related to the measured psychological health outcomes. One possible explanation for this non-significant finding is that students who are highly aware are overwhelmed by the volume of stimuli they attend to, such that, beyond a certain point, mindful awareness has a detrimental impact. Although plausible, this explanation received no support in the current study. In contrast, findings did support a second possibility: when the analyses were

conducted using data from female respondents only, awareness was a significant predictor of well-being, thereby indicating differential effects by gender. Stanton et al. (2000) reported similar findings. In that study, coping through emotional processing was related to well-being in women but not in men.

A further intriguing finding was that rather than mindful awareness enhancing the positive effects of acceptance, awareness detracted from the beneficial impact of mindful acceptance. In Stanton et al.'s (2000, Study 3) research, use of both emotional processing and emotional expression displayed effects similar to those currently obtained, prompting the authors to suggest these two coping strategies may best be used sequentially rather than contemporaneously, which may be similar in our study. Additional research is required to identify other conditions under which mindful awareness has beneficial effects.

Third, social support was a strong predictor of psychological health in both the present study and that of Myers et al. (2012). These similar findings occurred despite social support being operationalized quite differently. An important contribution of the current study was the development of new self-report measures of seeking social support and demonstrating that, in this sample, the measure was internally consistent, normally distributed, and quite strongly predictive of student well-being. If replicated, the findings may provide the basis for future interventions, with social support treated as a self-initiated behavior that can be encouraged, modelled, and practiced to promote and maintain well-being. Future studies should examine the role of students' perceptions of the social support they actually receive as a mediator of the relationship between actively seeking social support and well-being.

Fourth, as predicted, sleep hygiene was related to higher levels of well-being and is consistent with previous research suggesting that healthy sleep patterns play a role in the psychological health of university students (Myers et al., 2012; Pilcher & Ott, 1998). Fifth, also in accord with past research findings, healthy food habits were positively related to well-being (Jacka et al., 2012; Weng et al., 2012). Thus, in addition to the well-known and more obvious effects of sleep hygiene and sensible eating on physical health, there is now accumulating evidence of positive effects of these self-care practices on mental health. Noteworthy is the current finding that these effects occurred independently of each other and of the impact of other self-care and demographic variables. The implications are straightforward: College students, a population that disproportionately displays unhealthy patterns of eating and sleeping, should be encouraged to adopt healthier food and rest habits.

Finally, physical activity did not predict the outcome variable in either the current research or in Myers et al.'s (2012) study. Our supplementary analyses provided no support for the idea suggested by Hall et al. (2002) that physical exercise has psychological benefits that peak at intermediate activity levels. While these findings appear contrary to previous research that has highlighted the mental health benefits of exercise (Hassmén et al., 2000; Penedo & Dahn, 2005), it is plausible both that episodic physical training enhances well-being, and that the adoption of a high physical exercise lifestyle does not lead to greater well-being. Perhaps, for example, the psychological benefits of exercise are short-lived, or perhaps these benefits pertain only within structured and well-monitored fitness programs and not in more informal contexts.

Future Research

Several strengths of the current study should be noted. Rather than focusing on health risk behaviors, the study investigated an under-researched and more positive aspect of student psychological adjustment. By demonstrating relationships between self-care practices and well-

being, it extended past research that simply described patterns of student participation in these practices. Statistical controls were implemented to discount rival explanations associated with gender-, age- and stressor-effects, and several measurement limitations evident in past research were addressed. Using different samples and mostly different measures of key variables, the study confirmed many of Myers et al.'s (2012) findings regarding the benefits of specific self-care practices in student populations.

Notwithstanding this positive assessment of the current study, replication using larger and more heterogeneous samples is required. Like many past studies (e.g., Myers et al., 2012), males were under-represented in our research. Evidence shows that males are less likely than females to engage in most self-care practices (Turner et al., 2005), highlighting the considerable challenges involved in encouraging males to engage in self-care practices and to participate in self-care research. One strategy to address this challenge may be to include on websites popular among young males endorsements by sports stars and other role models of self-care practices such as mindful acceptance that are not traditionally associated with male stereotypes. The finding that mindful awareness tended to detract from, rather than add to, the beneficial effects of mindful acceptance is a particularly intriguing finding; it suggests the need for further research specifically targeting the interplay of these two activities.

Future prospective studies should measure self-care practices and well-being at multiple points in time, so that possible reverse- and reciprocal-effects can be explored. Field research is required to evaluate the cost-effectiveness of interventions aimed at enhancing self-care practices. Longitudinal research can assess causal models that involve links from self-care practices to well-being, and from there to enhanced levels of student engagement and performance.

Implications and Conclusions

Starting from the premise that students are unlikely to give their best if they are not taking care of themselves, this study investigated the role of self-care in supporting college students' psychological well-being. Unhealthy habits and lifestyles are present in most higher education student populations and these may trigger mental health problems. The need for self-care behaviors to be laid down in emerging adulthood to provide the foundation for long-term health is well recognized (Viner & Baker, 2005). The current findings pinpoint four practices linked to student well-being—mindful acceptance, social support-seeking, healthy eating, and sleeping hygiene. Mindful awareness may be additionally beneficial for female students, a finding that serves as a reminder of the need for caution in assuming that the same approaches will be equally effective in supporting the well-being of males and females.

Our proposed framework for facilitating student self-care has three components. The first is the student him/herself. Self-care requires personal initiative; to some degree, it is a matter of self-help and self-regulation. Students must become aware of their self-care needs and must initiate strategies for meeting these needs (Turner et al., 2005). But, because many students cannot, or will not, do this alone, self-care practices need to be enabled, demonstrated, and encouraged by others. The second component of our framework thus involves contributions from specialist college-based health and counselling services. These services can provide access to human, electronic, and print resources relevant to student self-care and can offer intermittent interventions and on-going support of many kinds. One such initiative is health and wellness coaching, a capacity-building, positively oriented intervention that has many attractive features, including being client-centered, theoretically based, and delivered by health professionals with diverse backgrounds (Wolever et al., 2013). Third, at the whole of college level, self-care

practices can be built into core components of the curriculum, such that all students are provided with opportunities, guidance, and encouragement to partake in these practices. This broader perspective recognizes the reality that, if treated solely as a matter of individual responsibility, many students who could benefit from self-care practices will not take advantage of the training and other options available.

Our research showed that mindful acceptance was the practice most closely linked with student well-being. Our findings suggest that this practice may have mental health benefits that exceed those derived from more traditional activities such as diet and physical exercise. Other research has demonstrated that this facet of mindfulness can be successfully learned (Caldwell et al., 2011; Shapiro et al., 2008). Student well-being could be particularly improved by including mindful acceptance skills within college health and wellness coaching programs. Additionally, students could be offered academic courses that embed mindfulness training into the mainstream curriculum (e.g., Christopher, Christopher, Dunnagan, & Schure, 2006).

In our study, seeking social support emerged as another practice linked to student well-being. To enhance support-seeking, colleges could offer at least one core course for beginning students that involves the use of small learning groups completing self-paced learning activities both in-class and outside-class. Such strategies facilitate social interaction among students and require them to actively engage with each other. Social support-seeking practices do not come easily to all students, yet these strategies can lead to development of support seeking skills that are useful in both personal and academic contexts (Griffiths, 2003).

In summary, this study provides evidence that specific self-care practices explain considerable variance in student well-being. By enhancing psychological well-being, these practices may help lower student failure and dropout rates and increase returns on financial and temporal investments in higher education. Given this, both student affairs professionals and faculty members are urged to continue to offer education, advice, and evidence-based interventions that promote self-care practices.

References

- Antaramian, S. (2015). Assessing psychological symptoms and well-being: Application of a dual factor mental health model to understand college student performance. *Journal of Psychoeducational Assessment*, 33(5), 419–429. doi:10.1177/0734282914557727
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469–480. doi:10.1037/0003-066X.55.5.469
- Baker, C. N., & Robnett, B. (2012). Race, social support, and college student retention: A case study. *Journal of College Student Development*, 53(2), 325–335. doi:10.1353/csd.2012.0025
- Bewick, B., Koutsopoulou, G., Miles, J., Slaa, E., & Barkham, M. (2010). Changes in undergraduate students' psychological well-being as they progress through university. *Studies in Higher Education*, 35(6), 633–645. doi:10.1080/03075070903216643
- Booth, M. L. (2000). Assessment of physical activity: An international perspective. *Research Quarterly for Exercise and Sport*, 71(sup2), s114–120. doi:10.1080/02701367.2000.11082794
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822–848. doi:10.1037/0022-3514.84.4.822
- Caldwell, K., Emery, L., Harrison, M., & Greeson, J. (2011). Changes in mindfulness, well-being, and sleep quality in college students through Taijiquan courses: A cohort control study. *The Journal of Alternative and Complementary Medicine*, 17(10), 931–938. doi:10.1089/acm.2010.0645
- Cardaciotto, L., Herbert, J. D., Forman, E. M., Moitra, E., & Farrow, V. (2008). The assessment of present-moment awareness and acceptance: The Philadelphia mindfulness scale. *Assessment*, 15(2), 204–223. doi:10.1177/1073191107311467
- Christopher, J. C., Christopher, S. E., Dunnagan, T., & Schure, M. (2006). Teaching self-care through mindfulness practices: The application of yoga, meditation, and qigong to counselor training. *Journal of Humanistic Psychology*, 46(4), 494–509. doi:10.1177/022167806290215

- Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance & Counselling*, 34(4), 505–517. doi:10.1080/03069880600942624
- Craig, C. L., Marshall, A. L., Sjostrom, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E.,... Oja, P. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine & Science in Sports & Exercise*, 35(8), 1381–1395. doi:10.1249/01.MSS.0000078924.61453.FB
- Fagan, A. A., & Najman, J. M. (2003). Sibling influences on adolescent delinquent behaviour: An Australian longitudinal study. *Journal of Adolescence*, 26(5), 546–558. doi:10.1016/S0140-1971(03)00055-1
- Forquer, L. M., Camden, A. E., Gabriau, K. M., & Johnson, C. M. (2008). Sleep patterns of college students at a public university. *Journal of American College Health*, 56(5), 563–565. doi:10.3200/JACH.56.5.563-565
- Gadzella, B. M. (1994). Student-life stress inventory: Identification of and reactions to stressors. *Psychological Reports*, 74, 395–402.
- Greeson, J. M. (2009). Mindfulness research update: 2008. *Complementary Health Practice Review*, 14(1), 10–18. doi:10.1177/1533210108329862
- Griffiths, S. (2003). Teaching and learning in small groups. In H. Fry, S. Ketteridge, & S. Marshall (Eds.), *A handbook for teaching and learning in higher education* (pp. 91–104). London, UK: Kogan Page Limited.
- Ha, E.-J., & Caine-Bish, N. (2009). Effect of nutrition intervention using a general nutrition course for promoting fruit and vegetable consumption among college students. *Journal of Nutrition Education and Behavior*, 41(2), 103–109. doi:10.1016/j.jneb.2008.07.001
- Hall, E. E., Ekkekakis, P., & Petruzzello, S. J. (2002). The affective beneficence of vigorous exercise revisited. *British Journal of Health Psychology*, 7(1), 47–66. doi:10.1348/135910702169358
- Hartley, M. T. (2011). Examining the relationships between resilience, mental health, and academic persistence in undergraduate college students. *Journal of American College Health*, 59(7), 596–604. doi:10.1080/07448481.2010.515632
- Hassmén, P., Koivula, N., & Uutela, A. (2000). Physical exercise and psychological well-being: A population study in Finland. *Preventive Medicine*, 30(1), 17–25. doi:10.1006/pmed.1999.0597
- Hefner, J., & Eisenberg, D. (2009). Social support and mental health among college students. *American Journal of Orthopsychiatry*, 79(4), 491–499. doi:10.1037/a0016918
- Irwin, J. D. (2004). Prevalence of university students' sufficient physical activity: A systematic review 1. *Perceptual and Motor Skills*, 98(3), 927–943. doi:10.2466/pms.98.3.927-943
- Jacka, F. N., Mykletun, A., & Berk, M. (2012). Moving towards a population health approach to the primary prevention of common mental disorders. *BioMed Central Medicine*, 10, 149. doi:10.1186/1741-7015-10-149
- Johnson, F., Wardle, J., & Griffith, I. (2002). The adolescent food habits checklist: Reliability and validity of a measure of healthy eating behaviour in adolescents. *European Journal of Clinical Nutrition*, 56(7), 644–649. doi:10.1038/sj.ejcn.1601371
- Kandiah, J., Yake, M., Jones, J., & Meyer, M. (2006). Stress influences appetite and comfort food preferences in college women. *Nutrition Research*, 26(3), 118–123. doi:10.1016/j.nutres.2005.11.010
- Master, D. F., Bryson, J., & Corwyn, R. (2006). Assessment of sleep hygiene using the sleep hygiene index. *Journal of Behavioral Medicine*, 29(3), 223–227. doi:10.1007/s10865-006-9047-6
- Mattana, J. F., Ayers, J. F., Brand, B. L., & Brooks, L. J. (2010). A social support intervention to ease the college transition: Exploring main effects and moderators. *Journal of College Student Development*, 51(1), 93–108. doi:10.1353/csd.0.0116
- McDonald-Miszczak, L., Wister, A. V., & Gutman, G. M. (2001). Self-care among older adults: An analysis of the objective and subjective illness contexts. *Journal of Aging and Health*, 13(1), 120–145. doi:10.1177/089826430101300106
- Michalak, J., Teismann, T., Heidenreich, T., Ströhle, G., & Vocks, S. (2011). Buffering low self-esteem: The effect of mindful acceptance on the relationship between self-esteem and depression. *Personality and Individual Differences*, 50(5), 751–754. doi:10.1016/j.paid.2010.11.029
- Myers, S. B., Sweeney, A. C., Popick, V., Wesley, K., Bordfeld, A., & Fingerhut, R. (2012). Self-care practices and perceived stress levels among psychology graduate students. *Training and Education in Professional Psychology*, 6(1), 55–66. doi:10.1037/a0026534
- Penedo, F., & Dahn, J. (2005). Exercise and well-being: A review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry*, 18(2), 189–193. doi:10.1097/00001504-200503000-00013
- Pilcher, J. J., & Ott, E. S. (1998). The relationships between sleep and measures of health and well-being in college students: A repeated measures approach. *Behavioral Medicine*, 23(4), 170–178. doi:10.1080/08964289809596373
- Seligman, M. E. P. (2008). Positive health. *Applied Psychology: An International Review*, 57(s1), 3–18. doi:10.1111/j.1464-0597.2008.00351.x
- Shapiro, S. L., Oman, D., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Cultivating mindfulness: Effects on well-being. *Journal of Clinical Psychology*, 64(7), 840–862. doi:10.1002/jclp.20491
- Stallman, H., & Shochet, I. (2009). Prevalence of mental health problems in Australian university health services. *Australian Psychologist*, 44(2), 122–127. doi:10.1080/00050060902733727
- Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, 45(4), 249–257. doi:10.1080/00050067.2010.482109
- Stanton, A. L., Kirk, S. B., Cameron, C. L., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology*, 78(6), 1150–1169. doi:10.1037/0022-3514.78.6.1150
- Stark, M. A., Manning-Walsh, J., & Vliem, S. (2005). Caring for self while learning to care for others: A challenge for nursing students. *The Journal of Nursing Education*, 44(6), 266–270.

- Trockel, M., Manber, R., Chang, V., Thurston, A., & Taylor, C. B. (2011). An e-mail delivered CBT for sleep-health program for college students: Effects on sleep quality and depression symptoms. *Journal of Clinical Sleep Medicine*, 7(3), 276–281. doi:[10.5664/JCSM.1072](https://doi.org/10.5664/JCSM.1072)
- Turner, J. A., Edwards, L. M., Eicken, I. M., Yokoyama, K., Castro, J. R., Tran, A.-N., & Haggins, K. L. (2005). Intern self-care: An exploratory study into strategy use and effectiveness. *Professional Psychology: Research and Practice*, 36(6), 674–680. doi:[10.1037/0735-7028.36.6.674](https://doi.org/10.1037/0735-7028.36.6.674)
- Verlander, L. A., Benedict, J. O., & Hanson, D. P. (1999). Stress and sleep patterns of college students. *Perceptual and Motor Skills*, 88(3), 893–898. doi:[10.2466/pms.1999.88.3.893](https://doi.org/10.2466/pms.1999.88.3.893)
- Viner, R. M., & Barker, M. (2005). Young people's health: The need for action. *British Medical Journal*, 330(7496), 901–903. doi:[10.1136/bmj.330.7496.901](https://doi.org/10.1136/bmj.330.7496.901)
- Walker, S. N., Sechrist, K. R., & Pender, N. J. (1987). The health-promoting lifestyle profile: Development and psychometric characteristics. *Nursing Research*, 36(2), 76–81. doi:[10.1097/00006199-198703000-00002](https://doi.org/10.1097/00006199-198703000-00002)
- Wardle, J., Steptoe, A., Bellisle, F., Davou, B., Reschke, K. S., Lappalainen, R., & Fredrickson, M. (1997). Health dietary practices among European students. *Health Psychology*, 16(5), 443–450. doi:[10.1037/0278-6133.16.5.443](https://doi.org/10.1037/0278-6133.16.5.443)
- Weidner, G., Kohlmann, C.-W., Dotzauer, E., & Burns, L. R. (1996). The effects of academic stress on health behaviors in young adults. *Anxiety, Stress & Coping*, 9(2), 123–133. doi:[10.1080/10615809608249396](https://doi.org/10.1080/10615809608249396)
- Weng, -T.-T., Hao, J.-H., Qian, Q.-W., Cao, H., Fu, J.-L., Sun, Y., & Tao, F.-B. (2012). Is there any relationship between dietary patterns and depression and anxiety in Chinese adolescents? *Public Health Nutrition*, 15(4), 673–682. doi:[10.1017/S1368980011003077](https://doi.org/10.1017/S1368980011003077)
- Wolever, R. Q., Simmons, L. A., Sforzo, G. A., Dill, D., Kaye, M., Bechard, E. M., . . . Yang, N. (2013). A systematic review of the literature on health and wellness coaching: Defining a key behavioral intervention in healthcare. *Global Advances in Health and Medicine*, 2(4), 38–57. doi:[10.7453/gahmj.2013.042](https://doi.org/10.7453/gahmj.2013.042)
- World Health Organization. (1948, June). *Preamble to the Constitution of the World Health Organization* as adopted by the International Health Conference, New York, USA, 19–22, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.