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Journal

American Journal of Hypertension, 26(11)

ISSN

0895-7061

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Publication Date

2013-11-01

DOI

10.1093/ajh/hpt118

Peer reviewed

Absorption in Self-Selected Activities Is Associated With Lower Ambulatory Blood Pressure but Not for High Trait Ruminators

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BACKGROUND

A range of nonpharmacological interventions (e.g., meditation) have positive effects on blood pressure (BP) but tend to have poor adherence. These interventions may lower BP partly by absorbing and directing attention away from one's negative thoughts. We hypothesized that recurring self-selected activities (SSAs) that are attentionally absorbing may similarly lower BP. We examined the effect of reported engagement in SSAs during the previous month prior to participation on ambulatory BP (ABP) and whether those prone to rumination were less likely to show these effects.

METHODS

Participants ($n = 38$) reported engagement in SSAs and how absorbing they were, responded to trait rumination and perceived stress questionnaires, wore an ABP monitor for 24 hours, and at each ABP measurement answered electronic diary questions assessing activity levels, affect, social interactions, and caffeine and tobacco use.

RESULTS

Regression analyses tested whether the reported absorption of SSAs, trait rumination, and their interaction predicted daytime and nighttime

systolic and diastolic ABP. Greater absorption predicted lower daytime and nighttime ABP ($bs = -18.83$ to -8.79 ; $Ps < .05$), but this relationship was moderated by trait rumination ($bs = 3.72$ to 9.97 ; $Ps < .05$). Follow-up analyses revealed that absorption was unrelated to ABP for those with high trait rumination but that more absorption predicted lower ABP for those less prone to rumination.

CONCLUSIONS

Our results suggest that regular engagement in absorbing SSAs is related to lower ABP. These findings have implications for the development of nonpharmacological interventions and suggest SSAs may serve as an adjuvant intervention strategy to lower BP.

Keywords: absorption; ambulatory blood pressure; blood pressure; hypertension; intervention; nonpharmacological; rumination.

doi:10.1093/ajh/hpt118

Hypertension affects approximately 30% of Americans,^{1,2} and is a risk factor for heart disease and stroke.^{1,3} Nonpharmacological (behavioral) interventions, including meditation and controlled breathing, have shown effectiveness in reducing blood pressure (BP)^{4,5} and are recommended for BP control programs.⁶ Moreover, evidence suggests that these interventions produce additive effects to drug therapy.⁷ Although effective, patients report that these interventions are not always enjoyable and require significant alterations to daily routines.⁸⁻¹⁰ These negative experiences may represent barriers to engagement and may predict lowered adherence to these interventions.

Notably, nonpharmacological interventions appear to share a common component in requiring individuals to direct and sustain their attention away from their thoughts,

which are often negative,¹¹ and become absorbed in the intervention activity. Diverting attention away from negative thoughts is potentially quite important. For example, ruminating or brooding about negative experiences can elicit and maintain a stress response, including autonomic and immunological activation, that can elevate acute BP and lead to sustained BP elevations over time.¹²⁻¹⁴ Conversely, providing a positive or enjoyable way to absorb one's attention after a stressor prevents rumination and speeds up BP recovery subsequent to the stressor.^{15,16} Thus, we propose that recurring engagement in activities that sustain and direct attention away from one's negative thoughts can have long-term effects in lowering BP that should persist beyond engagement in the activity itself.

If so, we further propose that individuals could engage in a wide range of activities that absorb attention and thus could

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Initially submitted April 10, 2013; date of first revision May 31, 2013; accepted for publication June 21, 2013; online publication July 16, 2013.

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lower BP, including reading, playing music, or any number of other self-selected activities (SSAs). As long as the SSA is a positive activity and fully absorbs a person's attention, the person may experience positive BP effects. In support of this view, researchers have reported beneficial effects on BP (immediately following a stressor) from having participants listen to music similar to those effects obtained with rigorous nonpharmacological interventions (e.g., mindfulness meditation).¹⁷⁻¹⁹

Although this line of work is promising, it is not clear if the (acute) results observed from short-term BP measurements extend beyond immediate reactions to a stressor. For example, exercise raises a person's BP in the moment, but, across people over time, those who exercise more have lower BP.^{20,21} Similarly, it may not be possible to infer the long-term effects of SSAs by examining in-the-moment reactions (or vice versa²²). In addition, it may be more important to measure one's generalized BP levels than momentary BP. For example, ambulatory BP (ABP) is a better predictor of poor cardiovascular health, including target organ damage and morbid events, than single time-point measurements such as BP taken in the clinic's office.^{23,24} Moreover, ABP can assess nighttime BP, which is an independent (and possibly stronger) predictor for all-cause and cardiovascular mortality than daytime BP.²⁵ Given its predictive power for poor health, there have been calls for the identification of additional interventions targeted at reducing ABP.²⁶ From a clinical standpoint, if SSAs could be shown to be associated with lower ABP, physicians could be in a position to recommend SSAs to their patients to help achieve positive cardiovascular health.

The purpose of this study was to provide an initial test of the potentially beneficial effects of SSAs on subsequent ABP. We assessed reported engagement in SSAs during the previous month prior to participation and prospectively examined their relation to ABP levels. We hypothesized that higher absorption levels would relate to lower daily and overnight ABP. As evidence suggests that absorption and relaxation are distinct constructs,²⁷ we also measured reports of how relaxing the SSAs were (in addition to reported absorption). Although relaxing activities may be related to lower BP in the moment, relaxation is not likely to relate to the extent to which one is mentally absorbed in a task or not. Because we argue that absorption confers the sustained and prospective benefit on ABP, we hypothesized that relaxation would be unrelated to ABP whereas absorption would predict lower ABP. In addition, we controlled for factors known to influence ABP, including sex, age, stress, activity level, mood, social interactions, caffeine use, and tobacco use. Finally, we measured trait tendencies toward rumination and tested rumination as a moderator of the effect of absorptive SSAs on ABP. Those prone to ruminate are inclined to attend to their negative thoughts¹²⁻¹⁴ and therefore may not be able to achieve the beneficial aspects of SSAs (i.e., absorption). In other words, individuals have to be capable of redirecting their focus from their own thoughts and become absorbed in the SSA to achieve its positive benefits; those high on trait rumination may constantly attend to their thoughts and environment and thus be unable to benefit from SSAs.

METHODS

Participants

Healthy community participants (n = 41) from a small city in a Mid-Atlantic state were recruited by advertisements and paid \$75 for their participation. Participants were not eligible if they were unable to wear the BP monitor overnight, had ever fainted or felt dizzy when having their BP measured, were younger than 25 years, or had difficulty reading text on a small screen. Three enrolled participants were excluded because of equipment malfunction with the ABP monitors. The final sample consisted of 38 participants (25 women, 13 men; aged 28-77 years, mean = 51.68, SD = 13.77) who identified predominantly as white (92.1%). Across participants, average ABP was in the normotensive range (daytime systolic BP: mean = 120.87, SD = 11.27; diastolic BP: mean = 76.56, SD = 6.46), although 10 participants reported having received a hypertensive diagnosis from their physician.

Materials and procedure

As part of a larger study, participants completed 4 phases relevant to this study. The larger study examined the validity of the ScottCare ABP monitor.²⁸

Questionnaires. Participants reported age and sex along with other demographic and health information, including whether or not they had ever been diagnosed for hypertension by their physician, and completed several individual difference measures. We examined the 22-item Ruminative Response Scale,²⁹ which measures ruminative coping responses to negative mood (e.g., "How often do you go away by yourself and think about why you feel this way?"). We also examined the 30-item Trier Inventory for the Assessment of Chronic Stress,³⁰ which measures perceived stress over the past month (e.g., "In the past month, I have experienced times when I have too many duties to fulfill"). Participants responded using a 1 (not at all/never) to 4 (very much so/often) scale. The Ruminative Response Scale ($\alpha = .94$) and Trier Inventory for the Assessment of Chronic Stress ($\alpha = .93$) showed high reliability in our sample. Higher numbers indicate greater ruminative tendencies and perceived stress.

SSAs interview. In a semistructured interview, participants reported on the primary activity that they engaged in regularly that relaxes them and takes them mentally away from the most stressful aspects of their life. After reporting on the first activity, participants were asked to recall a second activity (92.1% did so). Participants described each activity, reported the typical duration when engaging in the activity, and the frequency with which they engaged in each activity per week for the last month. Finally, participants reported how relaxing the activity was and how much they became so absorbed in the activity that they did not notice anything else going on around them using a 1 (not at all) to 7 (very much) scale. Absorption and relaxation scores across both activities were averaged to provide more stable estimates of absorption and relaxation.

Ambulatory BP. After the interview, participants were fitted with a cuff on their nondominant arm connected to the ScottCare ABP Recorder 320 (Cleveland, OH), previously manufactured as the Mobil-O-Graph (IEM GbmH, Stolberg, Germany³¹) and recently validated.²⁸ The ScottCare ABP monitor uses the oscillometric method for BP estimation. Three ABP readings were checked in the laboratory against 3 auscultatory measurements where a t-connector linked the ABP monitor to a mercury column sphygmomanometer; if the averages for the 2 sets of readings differed by >5 mm Hg for either systolic or diastolic BP then the monitor was switched and rechecked (which occurred for 4 participants). Once checked, participants were fitted with a new cuff that they wore for the ensuing 24 hours. Measurements were taken every 20 minutes during the daytime and every 30 minutes during self-reported sleep periods. The number of daytime readings ranged 15–50 (mean = 34.42, SD = 10.01), and the number of nighttime readings ranged 12–20 (mean = 16.08, SD = 1.81). To ensure stable BP estimates, it is recommended that 3–6 measurements are needed for a single setting and at least 5 measurements in at least 2 locations to generalize across settings.³² Even with conservative estimates, we obtained sufficient numbers of measurements to create averaged systolic and diastolic BP scores from daytime and nighttime readings. Nevertheless, to ensure that “missingness” was not related to underlying factors, we conducted a median split on the number of ABP readings and compared these 2 groups on all measures and outcomes reported. No differences between the 2 groups were found (daytime and nighttime ABP: $P_s > 0.60$; SSA absorption and relaxation: $P_s > 0.20$; trait rumination and perceived stress: $P_s > 0.56$; electronic diary outcomes: $P_s > 0.08$).

Electronic diary. Each time the ABP monitor took a daytime measurement participants responded to an electronic diary assessing a number of factors that can influence

ABP. Participants indicated their activity level as either lying down, sitting down, or on their feet; if on their feet, they indicated if they were engaged in mild, moderate, or heavy activity. Activity reports were then transformed into an ordinal 5-point scale where “on their feet” was replaced with each level of reported activity. Participants also indicated their mood on 4 items representing the x - and y -axes for valence and intensity, and the diagonals between them, on the circumplex model of mood:³³ sleepy vs. alert, unpleasant vs. pleasant, depressed vs. excited, and stressed vs. relaxed. Participants responded using a 7-point bipolar scale, with higher numbers indicating more alertness, pleasantness, excitement, and relaxation. Participants also indicated whether or not they had interacted with anyone, ingested caffeine, or smoked tobacco in the previous 10 minutes. Separate indices of activity, alertness, pleasantness, excitement, relaxation, social interactions, caffeine, and tobacco were calculated as the person-level mean value of all available momentary reports.

RESULTS

Table 1 provides descriptive data on reported SSAs. SSAs most commonly reported were exercising and reading. All activities were generally described as relaxing (scores of ≥ 5). Listening to or playing music and watching TV had low levels of absorption, whereas reading, doing puzzles, and sewing were highly absorbing. Participants generally reported doing the activities frequently, with watching television, doing puzzles, reading, and listening to music the most frequent.

Absorption and trait rumination predicting ABP

We ran a series of regression analyses predicting daytime and nighttime systolic and diastolic BP as outcomes in separate models. We entered the averaged SSAs'

Table 1. Descriptives of the self-selected activities (SSAs)

SSA	No. reporting activity (%)	Relaxing, mean (SD)	Absorbing, mean (SD)	Frequency, times/wk, mean (SD)	Duration, min/session, mean (SD)
Exercise	21 (55.3)	5.81 (1.12)	4.62 (1.88)	4.43 (2.20)	48.95 (23.69)
Reading	18 (47.4)	6.28 (0.75)	5.67 (1.24)	5.67 (1.98)	51.39 (24.12)
Watching TV	5 (13.2)	6.60 (0.89)	4.40 (1.14)	6.30 (0.97)	83.60 (89.02)
Music: listening	5 (13.2)	6.40 (0.89)	4.20 (1.48)	5.10 (2.61)	70.00 (34.82)
Gardening	4 (10.5)	5.75 (0.50)	4.75 (2.06)	3.50 (1.87)	97.50 (56.79)
Music: playing	3 (7.9)	6.00 (1.00)	4.33 (2.08)	4.00 (2.65)	50.00 (17.32)
Sewing/crafts	3 (7.9)	7.00 (0.00)	6.00 (1.73)	1.67 (1.15)	160.00 (91.65)
Puzzles	3 (7.9)	6.33 (0.58)	5.00 (1.00)	6.33 (1.15)	41.33 (16.29)
Other ^a	10 (26.3)	5.50 (1.43)	5.10 (1.73)	3.78 (2.84)	149.60 (150.29)

Means refer to how relaxing and absorbing the SSAs were rated (ranging from 1 to 7), how frequently the activities were done per week in the last month, and how long on average participants engaged in the SSA when they did it. Higher numbers indicate more absorption, relaxation, greater frequency, and greater duration.

^aThe “other” activities consisted of driving, cleaning, dog training, nursing child, photography, fishing, chain saw carving, and participating in a pool league.

absorption score, trait rumination, and their interaction as predictors. We controlled for the SSAs' relaxation score, sex, age, perceived stress, and person averages from the electronic diary for activity level, alertness, pleasantness, excitement, relaxation, social interactions, caffeine use, and tobacco use.

Across all the models, greater absorption scores significantly predicted lower ABP (Table 2). Higher trait rumination was associated with lower ABP, but this effect was qualified by the predicted interaction of trait rumination and absorption. To help visualize the interaction, we generated plot points using PROCESS³⁴ in SPSS (IBM, Armonk, NY) (Figure 1). The *x*-axis represents the absorption score, the *y*-axis represents the 4 ABP measures, and the lines represent the differing levels of trait rumination. For those with greater ruminative tendencies (solid black lines), slopes were generally flat, indicating that absorption did not impact their BP levels. In contrast, for those with less ruminative tendencies (dashed lines), greater absorption scores were associated with decreased ABP. Finally, covariables were largely unrelated to ABP. Notably, SSAs' relaxation scores were not significant in any model. More social interactions and tobacco use were generally related to greater daytime and nighttime ABP, whereas more relaxation vs. stress (as assessed by the electronic diary) predicted lower daytime ABP. All other variables showed inconsistent or null results.

Supplemental analyses

To test the robustness of the observed effects, we reran the models replacing the SSAs' averaged absorption (and relaxation) scores with scores derived from only the primary SSA. We rationalized that the primary SSA may be a better indicator of general SSA tendencies (i.e., more likely to be consistently performed than secondary activities). Results were largely unchanged, with absorption scores from the primary SSA significantly predicting ABP across all models (*bs* = -24.40 to -8.96; *Ps* < 0.02) and with trait rumination consistently moderating that effect (*bs* = 5.14-9.55; *Ps* < 0.03). Next, we explored whether the frequency or duration of engagement or their interaction was correlated with ABP. Frequency (*rs* = 0.04-0.19; *Ps* > 0.23), Duration (*rs* = -0.02 to 0.09; *Ps* > .56), and interaction (*rs* = 0.14-0.20; *Ps* > 0.22) were not correlated with daytime or nighttime systolic or diastolic BPs. We then examined whether high vs. low trait ruminators (determined by median split) reported differences in absorption, relaxation, frequency, or duration in their SSAs. Independent samples *t* tests revealed no differences by rumination group on any outcome (*Ps* > 0.28). Next, we examined whether controlling for a hypertensive diagnosis would impact results. We included whether or not participants self-reported a hypertensive diagnosis as an additional predictor in the models reported in Table 2. The

Table 2. Absorption, rumination, absorption x rumination, and covariables predicting ambulatory daytime and nighttime systolic and diastolic BP

Predictors	Day SBP ^a <i>b</i> (SE)	Day DBP ^b <i>b</i> (SE)	Night SBP ^c <i>b</i> (SE)	Night DBP ^d <i>b</i> (SE)
SSA absorption	-18.03**** (4.22)	-9.49**** (2.19)	-12.14** (4.93)	-25.57** (11.01)
Rumination	-60.34**** (14.33)	-35.32**** (7.42)	-42.28** (16.72)	-25.57** (11.01)
Absorption × Rumination	9.80**** (2.30)	5.15**** (1.19)	5.95** (2.68)	3.67** (1.77)
SSA relaxation	-1.43 (2.53)	-1.18 (1.31)	1.09 (2.95)	0.47 (1.94)
Sex	-5.11 (3.82)	-3.46* (1.98)	-4.46 (4.46)	-0.03 (2.94)
Age	0.08 (0.13)	-0.10 (0.07)	-0.14 (0.15)	-0.10 (0.10)
Activity level	-2.19 (6.52)	-1.62 (3.38)	-0.74 (7.61)	-0.91 (5.01)
Perceived stress	4.75 (5.01)	7.31*** (2.60)	4.08 (5.85)	3.78 (3.85)
Alert	3.98 (3.46)	4.19** (1.79)	-2.86 (4.04)	1.33 (2.66)
Pleasant	2.12 (5.09)	1.64 (2.63)	3.37 (5.93)	0.51 (3.91)
Excited	5.43 (4.66)	2.42 (2.41)	6.06 (5.44)	5.39 (3.58)
Relaxed	-8.65**** (3.02)	-3.86** (1.56)	-3.80 (3.52)	-1.54 (2.32)
Social interaction	22.01** (8.40)	10.90** (4.34)	23.25** (9.80)	13.36* (6.45)
Caffeine	19.03 (14.72)	14.05* (7.62)	17.96 (17.17)	18.64 (11.31)
Tobacco	68.91** (27.60)	33.95** (14.29)	73.70** (32.20)	41.63* (21.20)

Each column of the table refers to a separate regression model (i.e., a separate model for each ambulatory blood pressure (ABP) outcome) in which self-selected activity (SSA) absorption level, rumination, and their interaction predicted ABP, even after controlling for SSA relaxation level, participants' sex and age, perceived stress in the prior month, and daily levels of alertness, pleasantness, excitement, relaxation, social interactions, caffeine, and tobacco.

Abbreviations: DBP, diastolic blood pressure; SBP, systolic blood pressure.

^aModel fit for daytime SBP: $F(14, 36) = 2.90$; $P = 0.01$; $R^2 = 0.67$.

^bModel fit for daytime DBP: $F(14, 36) = 3.63$; $P = 0.004$; $R^2 = 0.72$.

^cModel fit for nighttime SBP: $F(14, 36) = 1.40$; $P = 0.24$; $R^2 = 0.50$.

^dModel fit for nighttime DBP: $F(14, 36) = 1.52$; $P = 0.18$; $R^2 = 0.52$.

* $P < 0.10$; ** $P < 0.05$; *** $P < 0.01$; **** $P < 0.001$.

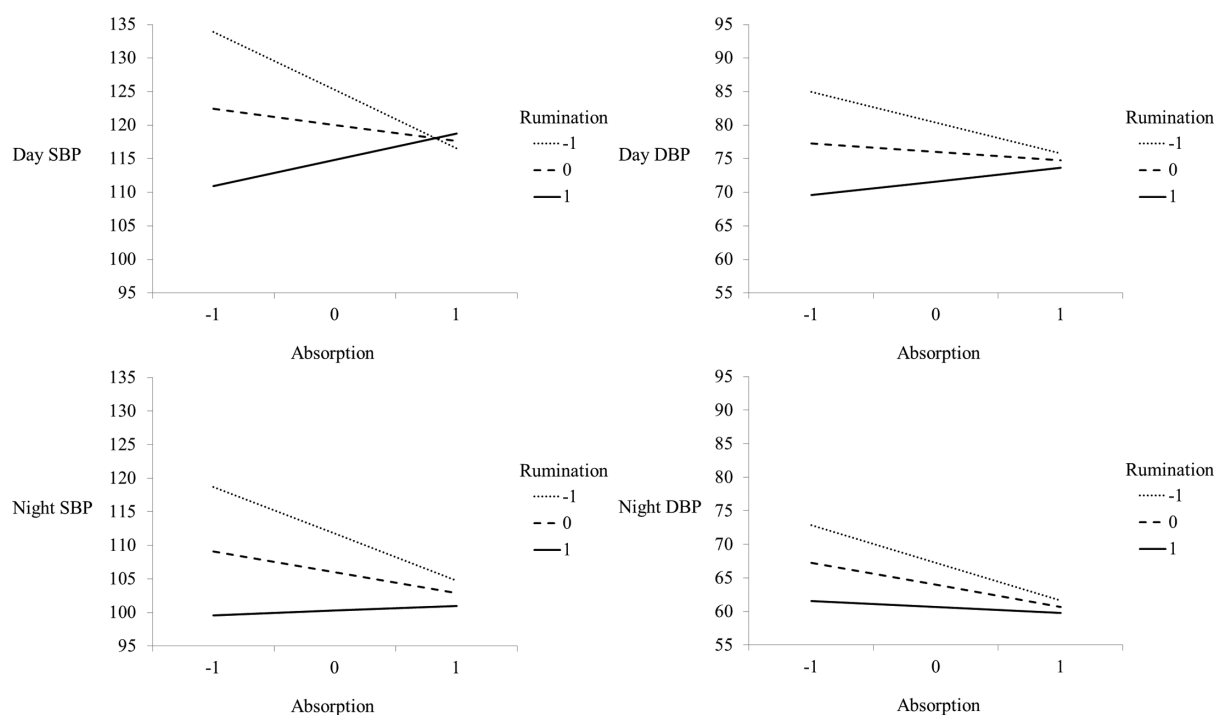


Figure 1. Rumination moderates the effect of absorption on systolic and diastolic daytime and nighttime ambulatory blood pressure. Graphs depict rumination and absorption scores at mean levels and 1 SD above and below the mean. Higher numbers indicate more rumination and absorption. Abbreviations: DBP, diastolic blood pressure; SBP, systolic blood pressure.

pattern of results remained largely unchanged, and having a hypertensive diagnosis was not significant in any model ($bs = 0.88\text{--}5.00$; $Ps > 0.32$). Finally, given that physical exercise may exert a benefit on ABP, we also examined whether the benefits of SSAs were accounted for by exercise alone. Participants were dummy coded as to whether they engaged in exercise as an SSA or not, and we reran the models including the exercise variable as an additional predictor. Results suggest that exercise did not have a unique predictive effect on ABP because exercise was not significant in any model ($bs = -0.20$ to 3.96 ; $Ps > 0.24$).

DISCUSSION

As predicted, the degree of reported engagement in absorbing SSAs over the previous month prior to participation was related to subsequent lower daytime and nighttime ABP. Those reporting ruminative tendencies did not benefit from absorptive SSAs, perhaps because those who ruminate continually attend to their thoughts and are unable to attain an absorptive or flow-like state (characterized as a loss of awareness of oneself and surroundings because of intense and focused concentration on an activity in the present moment that matches one's skill to the difficulty of the activity).³⁵ Furthermore, the extent to which activities were reported as relaxing was unrelated to ABP, supporting previous work suggesting that absorption and relaxation are independent constructs.²⁷ In sum, these results lend initial support to the view that regularly diverting and sustaining

attention away from one's thoughts through absorbing self-chosen activities can have positive long-term effects on overall ABP. In terms of implications, SSAs may hold potential for a highly ecologically valid intervention. Many existing BP control programs suffer from low adherence/participation rates, perhaps because the intervention is not always enjoyable or rewarding or because it requires significant alterations to daily routines.^{8–10} In contrast, SSAs are activities that people already enjoy and do not need to be taught how to do. This may lead to greater engagement and adherence over time.

We relied on retrospective self-reports in the interviews to determine absorption levels for the SSAs. This allowed us to capture general patterns in how much people engaged in absorbing activities in the previous month prior to participation and prospectively relate it to ABP levels. Although the month-long recall period limited the potential to overgeneralize from atypical activity patterns (e.g., the effects of weather on engaging in SSAs), participants may have had difficulty recalling over this period. Many other scales, however, successfully use a similar time period. Perceived stress scales,³⁰ e.g., show correlations with the frequency of actual stressors over the same time period,³⁶ suggesting the ability to recall events over a month. Nevertheless, by relying on the retrospective reports, we may have measured a personality trait, such as the capacity to attain a flow-like state,³⁵ rather than actual absorption when engaging in the SSAs. In addition, in line with mood congruent effects,³⁷ participants' current mood states may have influenced SSA recall (e.g., those in more positive mood may have better recalled enjoyable

activities); it is difficult to imagine, however, how mood congruence effects on recall would prospectively relate to ABP. Future work might use designs that minimize recall bias, such as ecological momentary assessments.³⁸

Our sample size was small, and thus caution should be exercised when interpreting null results that may reflect low statistical power. Additionally, our small sample did not allow us to examine whether certain types of SSAs were more effective than others. Although participants reported a wide range of activities, we may have missed other SSAs that are routinely performed. Finally, approximately one-fourth of participants self-reported a hypertensive diagnosis. Given the small sample size, we were unable to examine whether the effects of absorbing SSAs differed across hypertensive and normotensives participants, although controlling for self-reports of hypertensive diagnoses did not impact results. Yet, self-reports are an imprecise measure of actual hypertensive status, and thus we express caution generalizing the results from this relatively healthy sample to hypertensive persons. It could be argued that there may be greater opportunity to lower BP among hypertensive persons (vs. normotensive persons) because they have higher starting levels; however, this remains an open question. Also, self-reports of hypertension do not assess usage of antihypertensive medication. Thus, it is unclear whether SSAs would have additive effects to drug therapy as have been found with other types of behavior modifications.⁷ Examining the impact of absorbing SSAs as a nonpharmacological intervention for hypertensive patients represents a promising direction for future research.

Rumination moderated the effect of absorption, with high ruminators not benefiting from SSAs. More research, however, is needed to understand what aspects of rumination are critical. Rumination is linked to other constructs, such as loneliness, anxiety, and depression,³⁹ suggesting a more general tendency to attend to negative stimuli may prevent becoming absorbed in SSAs. It is also unclear whether ruminators could become absorbed with more training. For example, behavioral activation⁴⁰ could be effective in helping ruminators identify activities and environments that enhance the potential for absorption.

We did not have baseline assessments of ABP and could only look at differences across individuals. Future work should continue to prospectively examine the effect of SSA engagement over time and include assessments throughout the study period to examine the trajectory of change as a result of engaging in SSAs. A separate, but potentially important, question asks what the immediate effects of SSAs are. For example, after a stressful experience, engagement in SSAs may lower BP perhaps because SSAs disrupt dysphoric mood, enhance positive affect, and prevent engagement in ruminative thinking. Examining these contemporaneous processes within individuals may help to reveal the mechanisms for why SSAs are effective.

Finally, supplemental analyses revealed that neither the frequency nor duration spent doing the SSAs were related to ABP. This is not surprising because our assessments of activity participation were very crude. For example, a person engaging in an activity once a week for 3 hours had a similar duration to someone doing SSAs every day for 25

minutes, yet our measure did not distinguish between the two. Future work is needed to better understand how different frequencies and durations of SSAs impact ABP levels. We also found that whether or not the SSAs included exercise did not have a unique predictive effect on ABP. To test this prediction, given our small sample, we had to group many different activities varying in type and intensity as “exercise” (e.g., hiking, going to the gym, walking a pet). Future work might be aimed at better classifying types of exercise. Finally, although we included as covariables a number of variables known to influence ABP, future work should expand this to include other relevant variables, such as BP-controlling medication.

We present evidence that self-reported absorbing SSAs engaged in over the previous month prior to participation are prospectively related to lower ABP. Although additional work is needed to replicate and extend these findings, the potential for SSAs as a new direction to help control hypertension warrants further exploration. One practical implication of this research is that clinicians may be able to make use of patients’ already-existing desires to engage in absorbing activities that may lower BP. More broadly, if clinicians encourage patients to rearrange their lives to focus more of their time on the activities they find most enjoyable and absorbing, they have also helped their patients modify their lives to be more satisfying and fulfilling.

ACKNOWLEDGMENT

Partial funding for the study was provided by ScottCare Cardiovascular Solutions, Cleveland, Ohio.

DISCLOSURE

The authors declared no conflict of interest.

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