

A Daily Diary Investigation of the Link Between Television Watching and Positive Affect

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Abstract Past research has shown a negative relationship between time spent watching television (TV) and several indicators of hedonic well-being—including positive affect (PA). However, cross-sectional designs employed in most of these studies do not allow for inferences regarding the direction of the link between TV watching and PA. Present research aimed to address this gap by using daily diary data from a large national sample of U.S. adults ($N=1668$, age = 33–83 years). Respondents reported time spent watching TV as well as PA for eight consecutive days. Results of multilevel modeling analyses showed that duration of TV watching on the previous day did not significantly predict changes in PA on the next day. However, PA on the previous day significantly predicted decreases in duration of TV watching the following day. The results held after controlling for factors known to predict duration of TV watching and PA (i.e., age, gender, income level, employment status, marital status, health status, and personality traits). The present research goes beyond past cross-sectional work by shedding light on the direction of the link between TV watching and PA. Our findings indicate that watching TV does not seem to diminish PA—as critics of TV proclaim—but individuals seem to watch TV to a greater extent whenever they experience reduced PA.

Keywords Television · Positive affect · Hedonic well-being · Leisure · Daily diary design

1 Introduction

Imagine that you arrive home after a long day at work and press the button of the television (TV) remote. By watching TV, are you setting yourself up for unhappiness? Or is the very reason you pressed that button because you are feeling unhappy to begin with and perhaps

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looking for a welcome distraction? It is not possible to fully tease these two possibilities apart based on past work. Although a number of studies have found a negative relationship between time spent watching TV and several indicators of hedonic well-being including positive affect (PA) and life satisfaction (e.g., Cunado and Perez de Gracia 2012; Depp et al. 2010; Frey et al. 2007; Goodwin et al. 2005; Robinson and Martin 2008; Ye 2010; but see Hills and Argyle 1998; Kataria and Regner 2011), work in this area has been hampered by studies using largely cross-sectional designs and small samples. In this research, the question arises whether TV viewing leads to lower well-being, or is it that unhappy people watch more TV? Given that TV viewing is the most preferred leisure activity in the U.S. (Bureau of Labor Statistics 2015) and worldwide (OECD 2016), it is crucial to address this question. The present research aimed to do this by investigating the link between time spent watching TV and PA in a large national sample of U.S. adults.

On the one hand, it is possible that watching TV leads to lower PA, echoing criticisms of television that we hear in our everyday lives. Past research suggested several reasons why this might be the case. One strand of research has argued that watching TV prevents individuals from participating in other (potentially more beneficial) physical, social, intellectual or creative activities (Anastasea-Vlachou et al. 1996; Jordan and Robinson 2008; Robinson and Martin 2008), which often lead to feelings of regret over time wasted watching TV (Cunado and Perez de Gracia 2012; Frey et al. 2007). Indeed, in a healthy sample of older adults, TV watching was linked with lower PA compared with engaging in other leisure activities such as pursuing one's hobbies and prosocial activities such as volunteering (Goodwin et al. 2005). Watching TV might also deprive individuals of time spent with loved ones—such as friends, family, and romantic partners—who are essential to one's personal well-being (Selcuk et al. 2012, 2016; Slatcher and Selcuk 2017; Tasfiliz et al. 2018), potentially diminishing PA that could otherwise be derived from these social interactions (Bruni and Stanca 2008). Moreover, watching TV—as an indoor activity—might come at the expense of time spent outdoors and in nature, which is closely linked with hedonic well-being (Bratman et al. 2015; Nisbet and Zelenski 2011; Nisbet et al. 2011). Based on these arguments, the cross-sectional association between time spent watching TV and PA has often been taken as an indication that watching TV might undermine PA.

On the other hand, it is possible that when individuals experience lower PA, they spend greater time watching TV (Frey et al. 2007; Kubey and Csikszentmihalyi 1990; Robinson and Martin 2008). According to the broaden-and-build theory (Fredrickson 2004), experiencing positive affective states leads to greater engagement in novel and interesting activities (e.g., Isen and Reeve 2005) and greater variety-seeking (e.g., Fredrickson and Branigan 2005). Therefore, it is possible that decrements in PA result in engaging in a narrower range of mundane activities—including watching TV. Another reason why individuals turn to TV at times of lower PA might simply be to feel better. Individuals engage in activities that help achieve their ideal affective states (Tsai 2007)—which for most individuals are positive affective states (Tsai et al. 2006). Indeed, individuals report that they tend to watch TV to feel better (e.g., to relax, escape from everyday stress, and have fun; Thinkbox 2013). This tendency might be particularly exacerbated at times of lower PA when people may be inclined to seek relief in the familiarity and predictability afforded by watching familiar TV shows filled with familiar celebrities at their predetermined airing time (Kubey and Csikszentmihalyi 1990). Past work shows that individuals prefer familiar activities when they are under time or performance pressure (Litt et al. 2011) and engage in behaviors aimed at maintaining a sense of meaningfulness and predictability when they feel threatened (Proulx and Heine 2006). So individuals might prefer the familiarity and predictability of TV viewing over any other activity when they feel lower PA. Providing preliminary

evidence for this possibility, individuals were found to prefer engaging in pleasant activities (including watching TV) when they feel unhappy (Taquet et al. 2016). Although not directly manipulating or measuring affect, past experimental work also found that individuals turn to TV when they go through an experience that likely disrupts their PA—that is, when they receive negative (vs. positive) performance feedback on a test (Moskalenko and Heine 2003). These studies suggest that rather than being the cause of lower PA, individuals may turn to TV to a greater extent at times of lower PA in an effort to feel better.

In the current research, we seek to investigate the direction of the relationship between TV watching and PA. To increase the ecological validity of our findings, we examine this relationship in everyday life using data from a large, lifespan sample of adults (age range=33–83 years) who reported time spent watching TV as well as PA for eight consecutive days. Although a previous study used the same sample of adults to investigate the link between time spent on leisure activities and PA (Qian et al. 2014), this study did not specify or distinguish between different types of activities but rather focused on participants' response to the question of how much time they spent on relaxing or doing leisure activities. However, activities that fall into the broad category of leisure may be novel or mundane, social or non-social, indoors or outdoors, and importantly may or may not include watching TV. In the present research we focused exclusively on TV watching. To replicate past work showing a negative association between TV watching and PA (e.g., Goodwin et al. 2005), we first investigated whether time spent watching TV predicted PA on the same day. More pertinent to the focal aim of the present research, we also examined whether time spent watching TV on a given day predicted PA the next day, and similarly, whether PA on a given day predicted time spent watching TV the following day. This approach allowed us to draw inferences about the possible causal sequence between TV watching and PA. In our analyses, we controlled for age, gender, income level, employment status, marital status, health status and personality traits, which are known to be related with both duration of TV watching and PA (Kataria and Regner 2011; McIlwraith 1998; Qian et al. 2014; Ye 2010).

2 Materials and Methods

2.1 Sample and Procedures

The data come from the second wave of the Midlife Development in the United States (MIDUS; Ryff et al. 2007) and the National Study of Daily Experiences (NSDE; Ryff and Almeida 2010) projects. The MIDUS project was launched in 1994 ($N=7108$) to examine age-related changes in physical and mental well-being of adults in the United States. MIDUS II ($N=4963$) was conducted in 2004–2006 as a 10-year follow-up on MIDUS I measures. After completion of MIDUS II, a subsample of participants were recruited in the NSDE II ($n=2022$), an 8-day daily diary study, examining the affective consequences of daily life activities. Daily duration of TV watching and daily PA were measured in the NSDE via short telephone interviews for 8 consecutive days. To increase participation rate, respondents were informed about the time they would be called 1 week before the interview sessions began and were also given the opportunity to change or set up new appointments by calling a toll free number. Person-level covariates were measured in MIDUS II.

Respondents indicated their age, gender, employment status, and marital status in a phone interview, and completed measures of household income, health status, and personality traits as part of a self-administered survey.

The sample for the present analyses consisted of 1668 participants who completed all measures of interest. Mean age of the current sample was 56 years ($SD=12$); 44% of participants were female; 93% were White; 73% were married; 63% were employed; and 71% completed some college education or more. Mean household total income was \$71,321 ($SD=\$58,068$).

In terms of person-level covariates, the current sample did not significantly differ from the remainder of MIDUS II respondents in employment status, income, extraversion, agreeableness, conscientiousness, and openness to experience (all $ps > 0.058$). However, participants in the current sample were slightly older ($M=56.447$ years vs. $M=54.919$ years, Cohen's $d=0.124$, $p < 0.001$), more likely to be male (56 vs. 52%, $\chi^2(1)=8.491$, $p=0.004$, contingency coefficient=0.041) and married (73 vs. 70%, $\chi^2(1)=6.164$, $p=0.013$, contingency coefficient=0.035), rated themselves healthier (Cohen's $d=0.120$, $p < 0.001$), and scored lower on neuroticism (Cohen's $d=0.149$, $p < 0.001$).

Data collection was approved by the Education and Social/Behavioral Sciences and the Health Sciences Institutional Review Boards (IRBs) at the University of Wisconsin-Madison. Written consent was waived by the IRBs, so participants provided verbal consent. During the consent procedure, participants were assured that participation was voluntary and that the information they provide would be kept confidential. Data and documentation for MIDUS II data are available to the public at the Inter-university Consortium for Political and Social Research website (ICPSR, www.icpsr.umich.edu/icpsrweb).

2.2 Measures

2.2.1 Duration of TV Watching

Time spent watching TV each day was measured by asking participants to respond to the following open-ended question: "Since this time we spoke yesterday, how much time did you spend watching television (including time spent watching videos?)" Given duration of TV watching was measured at the day level, its mean level was estimated in a two-level null-model ($M=114.909$ min, $SE=1.934$).¹ The distribution of scores for duration of TV watching was positively skewed. Transformation of the data (i.e., by recoding values three standard deviations above the mean to the highest value within 3 standard deviations of the mean) did not alter the results.

2.2.2 Positive Affect

Participants reported the frequency with which they experienced several positive affective states each day (0= *None of the time* to 4= *All of the time*) using items adapted from well-known and validated affect and well-being scales—e.g., the Affect Balance Scale (Bradburn 1969); the General Well-Being Scale (Fazio 1977); the Non-Specific Psychological

¹ We estimated the mean level using a null multilevel model. Given that duration of TV watching was measured daily, multilevel modeling provides a better estimate of the mean than the arithmetic average of all observations combined. In a null (or also called intercept-only) model, the intercept is the sample average of the outcome—in this case, duration of TV watching. Mean PA was also estimated using the same approach.

Distress and Positive Emotions Scale (Kessler et al. 2002); and the PANAS (Watson et al. 1988). The affective states included “in good spirits,” “cheerful,” “extremely happy,” “calm and peaceful,” “satisfied,” “full of life,” “close to others,” “like you belong,” “enthusiastic,” “attentive,” “proud,” “active,” and “confident.” Similar to duration of TV watching, mean level of PA as estimated in a two-level null model ($M=2.736$, $SE=0.017$). Average Cronbach’s alpha across 8 days was 0.939 (range 0.919–0.948).

2.2.3 Covariates

Demographic Factors Age, gender (0=Male, 1=Female), employment status (0=Unemployed, 1=Employed), marital status (0=Not married, 1=Married), and household total income were used as demographic covariates.

Health Status Perceived health status was measured using a single item asking participants to rate their health (0= Worst possible health to 10=Best possible health; $M=7.477$, $SD=1.511$).

Personality Traits Big-five personality traits were measured using the Midlife Development Inventory Personality Scales (Lachman and Weaver 1997), an instrument specifically developed for the MIDUS project. Participants were asked to indicate how much each item described them (1=A lot to 4=Not at all). The openness to experience subscale ($M=2.923$, $SD=0.530$, $\alpha=0.773$) consisted of seven items (creative, imaginative, intelligent, curious, broad-minded, sophisticated, adventurous). The conscientiousness subscale ($M=3.394$, $SD=0.451$, $\alpha=0.689$) consisted of five items (organized, responsible, hardworking, thorough, careless-reverse coded). The agreeableness subscale ($M=3.445$, $SD=0.490$, $\alpha=0.802$) consisted of five items (warm, caring, softhearted, sympathetic, helpful). The extraversion subscale consisted of five items (outgoing, friendly, lively, active, talkative). The item “active” was common to both the extraversion and daily PA measures. Following prior work (Cacioppo et al. 2010; Gunaydin et al. 2016), to prevent any relationship between extraversion and PA due to item overlap, this item was not included when calculating extraversion ($M=3.106$, $SD=0.607$, $\alpha=0.775$). Finally, the neuroticism subscale consisted of four items (moody, worrying, nervous, calm-reverse coded). The item “calm” overlapped with the daily PA measure and was not included when calculating neuroticism ($M=2.015$, $SD=0.677$, $\alpha=0.744$).

2.3 Data Analytic Strategy

The links between daily PA and TV watching were estimated using multilevel modeling (HLM v7 software; Raudenbush et al. 2011). We used the HLM2 option to model days nested within respondents, with uncentered predictors, random intercepts and slopes, and homogenous Level-1 error structure. We computed confidence intervals using robust standard errors and report unstandardized model coefficients. First, we examined whether duration of TV watching predicted PA on the same day. Of the possible total of 13,344 daily assessments (1668 respondents \times 8 days), 763 (5.7%) were missing, reducing Level 1 observations to 12,581 days for this analysis. The model equations were as follows:

$$\text{Level 1 : Positive affect}_t = \pi_{0i} + \pi_{1i} \text{TV watching}_t + e_{it}$$

$$\text{Level 2 : } \pi_{0i} = \beta_{00} + r_{0i}$$

$$\pi_{1i} = \beta_{10} + r_{1i}$$

Although this model allowed us to replicate the previously reported concurrent negative association between TV viewing and PA, it did not allow teasing apart directionality. To address the issue of directionality, we performed lagged analyses. The number of Level 1 units were 10,477 for these analyses.² We started by investigating whether duration of TV watching on the previous day predicted PA on the next day, controlling for PA on the previous day. The multilevel model was as follows:

$$\begin{aligned} \text{Level 1 : Positive affect}_t &= \pi_{0i} + \pi_{1i} \text{TV watching}_{t-1} + \pi_{2i} \text{Positive affect}_{t-1} + e_{it} \\ \text{Level 2 : } \pi_{0i} &= \beta_{00} + r_{0i} \\ \pi_{1i} &= \beta_{10} + r_{1i} \\ \pi_{2i} &= \beta_{20} + r_{2i} \end{aligned}$$

Similarly, we examined whether PA on the previous day predicted duration of TV watching on the next day, controlling for duration of TV watching on the previous day. The multilevel model was exactly the same as above except that this time duration of TV watching on the next day was the outcome variable.

Finally, we repeated all analyses by also including person-level covariates (age, gender, income level, employment status, marital status, health status, and personality traits) as predictors of the intercept (π_{0i}) at Level 2.

3 Results

3.1 Does Duration of Daily TV Watching Concurrently Predict Daily PA?

Replicating previous work (e.g., Goodwin et al. 2005), there was a negative concurrent association between duration of TV watching and PA ($\beta = -0.00014$, $p = 0.026$, 95% CI $[-0.00027, -0.00002]$). This association persisted after inclusion of person-level covariates ($\beta = -0.00014$, $p = 0.032$, 95% CI $[-0.00026, -0.00001]$).

3.2 Does Duration of Daily TV Watching Predict Change in Daily PA?

Duration of TV watching on the previous day did not significantly predict changes in PA from the previous day to the next ($\beta = 0.0001$, $p = 0.313$, 95% CI $[-0.0001, 0.0003]$; Model 1 of Table 1), and this result remained unchanged after inclusion of covariates in the model ($\beta = 0.0001$, $p = 0.329$, 95% CI $[-0.0001, 0.0003]$; Model 2 of Table 1).³

² The number of Level 1 units in the lagged outcome analyses was less than that in the concurrent analyses because by definition Day 1 observations do not have a lagged value and hence are missing from the analyses. In addition, for a given day to be included in the analyses, the respondent should provide data both for that particular day and the previous day.

³ Another possibility is that the effects of TV viewing follow a nonlinear pattern with adverse effects on PA observed only after a certain duration of TV watching is surpassed. We repeated the analyses by adding a quadratic term of TV watching duration to the models as an additional predictor. The quadratic effect of TV watching duration did not significantly predict PA regardless of inclusion of covariates in the model (all $ps > 0.396$).

Table 1 Multilevel models predicting PA from duration of TV watching on the previous day

Predictors	Model 1		Model 2	
	Coefficient	<i>p</i>	Coefficient	<i>p</i>
<i>Intercept</i>				
Intercept	1.708 (0.035)	<0.001	0.288 (0.131)	0.028
Age	–	–	0.005 (0.001)	<0.001
Gender	–	–	0.035 (0.021)	0.093
Income level	–	–	–0.000 (0.000)	0.406
Employment status	–	–	–0.012 (0.024)	0.613
Marital status	–	–	0.017 (0.023)	0.450
Health status	–	–	0.049 (0.008)	<0.001
Openness	–	–	–0.021 (0.023)	0.361
Conscientiousness	–	–	0.162 (0.025)	<0.001
Extraversion	–	–	0.130 (0.019)	<0.001
Agreeableness	–	–	0.074 (0.024)	0.002
Neuroticism	–	–	–0.115 (0.016)	<0.001
<i>TV_{t-1} slope</i>				
Intercept	0.0001 (0.0001)	0.313	0.0001 (0.0001)	0.329
<i>PA_{t-1} slope</i>				
Intercept	0.384 (0.012)	<0.001	0.334 (0.012)	<0.001

Standard errors are provided in parentheses. All continuous variables are uncentered. For gender, male was coded as 0 and female was coded as 1. For employment status, unemployed was coded as 0 and employed was coded as 1. For marital status, not married was coded as 0 and married was coded as 1

3.3 Does Daily PA Predict Change in Duration of Daily TV Watching?

Positive affect on the previous day predicted decreases in duration of TV watching from the previous day to the next ($\beta = -4.237$, $p = 0.005$, 95% CI $[-7.181, -1.293]$; Model 1 of Table 2), and this association remained statistically significant after inclusion of covariates in the model ($\beta = -4.176$, $p = 0.009$, 95% CI $[-7.292, -1.060]$; Model 2 of Table 2). These findings indicate that when individuals feel lower PA, they seem to spend more time watching TV rather than the other way around.⁴

4 Discussion

How is watching TV—the most preferred leisurely activity in the U.S. and worldwide—linked with PA? The present research aimed to answer this question using daily diary data from a large, lifespan sample of U.S. adults. Although we found a concurrent negative

⁴ We repeated all analyses by replacing PA with negative affect (NA). There was no significant concurrent association between duration of TV watching and NA. In addition, duration of TV watching or the quadratic effect of duration of TV watching on the previous day did not significantly predict changes in NA from the previous day to the next. Finally, NA on the previous day did not significantly predict changes in duration of TV watching from the previous day to the next regardless of inclusion of covariates in the model (all $ps > 0.406$).

Table 2 Multilevel models predicting duration of TV watching from PA on the previous day

Predictors	Model 1		Model 2	
	Coefficient	<i>p</i>	Coefficient	<i>p</i>
<i>Intercept</i>				
Intercept	87.258 (4.666)	<0.001	123.127 (18.467)	<0.001
Age	–	–	0.487 (0.121)	<0.001
Gender	–	–	7.634 (2.652)	0.004
Income level	–	–	–0.0001 (0.00001)	<0.001
Employment status	–	–	–14.727 (3.199)	<0.001
Marital status	–	–	–6.411 (2.991)	0.032
Health status	–	–	–3.043 (0.925)	0.001
Openness	–	–	–2.901 (2.712)	0.285
Conscientiousness	–	–	–1.036 (3.166)	0.744
Extraversion	–	–	0.011 (2.314)	0.996
Agreeableness	–	–	–1.999 (2.964)	0.500
Neuroticism	–	–	–1.648 (1.966)	0.402
<i>TV_{<i>t-1</i>} slope</i>				
Intercept	0.297 (0.011)	<0.001	0.284 (0.011)	<0.001
<i>PA_{<i>t-1</i>} slope</i>				
Intercept	–4.237 (1.502)	0.005	–4.176 (1.590)	0.009

Standard errors are provided in parentheses. All continuous variables are uncentered. For gender, male was coded as 0 and female was coded as 1. For employment status, unemployed was coded as 0 and employed was coded as 1. For marital status, not married was coded as 0 and married was coded as 1

association between TV watching and PA as in past work, duration of TV watching on the previous day did not significantly predict changes in PA the following day. Importantly, PA on the previous day predicted decreases in the duration of TV watching the next day. In other words, watching TV does not seem to decrease PA, but individuals tend to watch TV to a greater extent when they experience reduced PA. These findings go beyond past cross-sectional work by shedding light on the direction of the relationship between duration of TV watching and PA.

We also tested whether our results held controlling for factors known to predict duration of TV watching and PA. Of these covariates, age, gender, income level, employment status, marital status, and health emerged as significant predictors of TV viewing, whereas Big-Five personality traits were not significantly associated with TV viewing. Specifically, being older, female, single, and unemployed as well as having lower income and poorer health predicted longer durations of TV watching. But importantly, even controlling for these factors, we found that individuals watched more TV when they experienced reduced PA on the previous day. Not only do these findings speak to the robustness of the current effects, but they also inform future work by documenting factors that should be accounted for in further studies investigating the link between PA and TV viewing.

Why do individuals watch TV to a greater extent when they feel reduced PA? Based on the broaden-and-build theory, it is possible that when individuals experience lower PA, they have lower motivation to seek out and engage in novel, creative, or exciting activities

(Fredrickson 2004), in which case they might spend more time on relatively more mundane, familiar, and predictable leisure time activities such as watching TV (Kubey and Csikszentmihalyi 1990). It is also possible that individuals turn to watching TV as a distraction strategy to lift their mood. Indeed, past work found greater preference for watching TV when individuals experienced life events associated with lower PA—such as feeling lonely (Perse and Rubin 1990), having conflict with household members (Rosenblatt and Cunningham 1976), or receiving negative feedback (Moskalenko and Heine 2003). If watching TV is used as a distraction from daily hassles, our findings indicate that it is not a particularly effective one: Watching TV neither improves nor dampens next-day PA.

Given watching TV does not seem to be a particularly effective way of increasing PA, why would individuals pursue this strategy to feel better? One possibility is that individuals make an affective forecasting error when trying to estimate the hedonic benefits of watching TV (Gilbert et al. 1998; Wilson and Gilbert 2005). That is, individuals might predict that watching TV will help them feel better when in fact it does not. Past work has shown that engaging in cognitively challenging activities (Erber 1996) and actively trying to divert attention from emotional stimuli (Webb et al. 2012) are far more effective distraction tactics than passively engaging in relatively unchallenging activities—such as TV watching. However, individuals may not be able to factor in the passive and cognitively unchallenging nature of TV watching when estimating its potential hedonic benefits, which might contribute to errors in affective forecasting. Another possibility is that any mood-lifting benefits of watching TV are offset by its costs—including spending less time engaging in PA-inducing activities such as exercising, pursuing one's hobbies (Jordan and Robinson 2008; Tkach and Lyubomirsky 2006), interacting with loved ones (Bruni and Stanca 2008), and spending time in nature (Bratman et al. 2015; Nisbet and Zelenski 2011). A final possibility is that watching TV only provides a short-lived distraction that does not extend to the next day. Indeed, engaging in distraction tactics provides hedonic benefits only for a limited period of time (e.g., Kross and Ayduk 2008). There is also evidence indicating that watching TV leads to small, short-term increases in happiness (Taquet et al. 2016) and relaxation (Kubey and Csikszentmihalyi 1990), but these feelings of relaxation tend to go away after TV viewing ends. These findings are consistent with past work indicating that effects of positive affect are short-lived (Bachmann et al. 2018; Sheldon et al. 1996). Future studies should simultaneously assess short- versus long-term effects of TV watching to investigate this possibility.

Another interesting avenue for future research is to examine whether the link between TV watching and PA depends on types of TV shows individuals prefer to watch. For instance, watching a drama or news broadcast on TV may reduce PA on subsequent days while watching a comedy or upbeat music video may increase PA. Indeed, asking participants to watch clips that differ in affective valence is often used to manipulate affective states in the laboratory (Park and Banaji 2000; Valdesolo and DeSteno 2006). Another factor that may play a role in hedonic benefits of TV watching is whether individuals actively watch TV or passively consume it while engaging in other activities—such as jogging on a treadmill, cooking, or chatting with others. Indeed, past work showed that nearly half of the time adolescents spent watching TV, they multitasked or attended to other things (Christensen et al. 2015). However, most of the time (72%) TV viewing is reported as the primary activity when it is paired with another activity (Kubey and Csikszentmihalyi 1990). The current research did not ask participants whether or not they engaged in other activities while watching TV. But based on past findings, we may expect that our participants were active consumers of TV, while the role of active versus passive forms of TV viewing in affective outcomes remains an open empirical question.

Moreover, whether individuals watch TV alone or in the company of others may determine hedonic benefits of TV viewing. One study found that social experiences made people happier than solitary experiences (Caprariello and Reis 2013), suggesting that watching TV in the company of others (vs. alone) may possibly be associated with greater PA. Indeed, individuals reported feeling happier when watching TV with their family than alone (Kubey and Csikszentmihalyi 1990). Another study found that sharing media (including TV) with romantic partners was associated with increased relationship quality, especially for individuals who lacked an overlapping social network with their partner (Gomillion et al. 2017). These studies suggest that watching TV with one's romantic partner or family may positively contribute to relational well-being—and ultimately to personal well-being. Given watching TV is a readily available and very popular leisure activity, future studies revealing under what circumstances TV watching might yield hedonic benefits will be valuable to help bolster personal well-being.

Finally, while the current study addressed the link between PA and TV watching, arousal might also play a role in time spent watching TV. When individuals have little energy left they might not bring themselves to pursue relatively more effortful PA-inducing leisure activities such as exercising, spending time in nature, or socializing. Instead, they might turn to TV as an easily accessible leisure activity that requires little effort. This view predicts that lower arousal or energy, independent of PA, would lead to greater durations of TV watching—a possibility that needs to be examined in future work.

Using daily diary data the present research indicated that spending greater time watching TV does not undermine PA—as critics of TV often claim—but rather experiencing lower PA makes us sit in front of the TV for longer hours. A strength of the current work is testing the links between PA and TV watching in a large national sample of U.S. adults. Future research should examine whether these findings generalize to clinical or patient populations. In conclusion, these findings provide strong evidence that diminished daily PA is associated with prolonged TV watching and suggest interesting avenues for future work that would help clarify the hedonic costs and benefits of TV watching.

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