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Leisure Choices and Employee Well-Being: Comparing Need Fulfillment and Well-Being during TV and Other Leisure Activities

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Background: Working adults spend most of their leisure time watching TV. In this paper, we seek to clarify how experiences of psychological need fulfillment and well-being differ when watching TV and engaging in other leisure activities. We suggest that, compared to other leisure activities, watching TV is equally conducive to fulfilling needs for: (a) relaxation and detachment from stress and (b) autonomy, but is less conducive to fulfilling needs for (c) meaning, (d) mastery, and (e) affiliation and thus also less conducive to promoting subjective wellbeing. Methods: We tested our predictions in two day reconstruction studies and a daily diary study. Results: People experienced similar levels of detachment and relaxation when watching TV and engaging in other types of leisure. However, they experienced less fulfillment of other needs, and lower levels of satisfaction and some aspects of affective well-being, when watching TV compared to other activities. Further, unlike time spent watching TV, daily time spent in physical activities was positively associated with positive activated affect. Conclusions: Given that watching TV tends to be associated with lower levels of need fulfillment and well-being than other leisure activities, leisure choices may be an important target for improving employee well-being.

INTRODUCTION

Efforts to improve employee well-being commonly target work and family experiences. However, one domain that is often overlooked is employees' leisure experiences. As leisure experiences predict employee well-being beyond the effects of work and family experiences (Kuykendall et al., 2017), and are typically more easily modified than work and family experiences (Diener, 1984), they may be a promising target for enhancing employee well-being. Yet, for leisure experiences to be a promising target for enhancing well-being, it is important not only that they be malleable, but also that they are not already optimised and thus have room to be improved upon (Margolis & Lyubomirsky, 2019). To determine whether this is the case, it is important to assess whether the leisure activities employees most frequently engage in are conducive to fulfilling needs and promoting well-being compared to less frequently chosen activities.

Time use data from across the world show that employees predominantly spend their leisure time watching television (TV). For instance, in the United States, working adults spend over half of their leisure time on weekdays and weekends watching TV (United States Bureau of Labor Statistics, 2018)—an amount that has increased in the working age population from around 10 weekly hours in the 1960s to over 16 hours in 2013 (Robinson & Martin, 2009; Robinson, Tracy, & Lee, 2015). Even in recent years, as one might expect internet usage to curtail increases in TV consumption, weekly TV consumption among employed adults has still increased (Robinson et al., 2015)—perhaps because streaming services such as Netflix make it easier than ever to watch large amounts of TV.

Though media accounts regularly express concern about how increasingly high levels of TV consumption—and neglect of other leisure activities—may impact well-being (Madrigal, 2018; Perraudin, 2018), the empirical literature on the topic remains unclear, as little research to date has rigorously examined whether people actually experience lower need fulfillment and well-being when watching TV compared to when engaging in other leisure activities. To provide greater clarity on this issue, the current paper aims to improve upon prior methodological approaches—and to integrate various theoretical perspectives represented in prior research—to compare employees'

experiences when watching TV and engaging in other leisure activities. If watching TV is substantially less conducive to experiences of need fulfillment and well-being than less commonly chosen leisure activities, such findings would suggest that leisure is likely a domain in which people have room to improve and thus is likely to be a promising target for improving well-being.

In what follows, we review limitations of prior approaches used to examine how experiences differ when watching TV and engaging in other leisure activities and explain the type of design necessary to overcome these limitations. Then, shifting from a focus on how to compare experiences when engaged in TV and other activities to a focus on what experiences should be compared, we identify a set of relevant psychological needs and consider how watching TV likely compares to other leisure activities in potential for fulfilling these needs and promoting well-being.

Prior Research Comparing TV and Other Leisure Activities

Methodological limitations of prior studies preclude a clear understanding of whether people actually experience lower need fulfillment and well-being when watching TV compared to when engaging in other leisure activities. Specifically, past studies have been limited in two main ways: (1) non-optimal assessment of experiences during activities and (2) designs and/or analyses that do not allow for within-person comparisons of experiences during different activities.¹

Non-optimal Assessment of Experiences during Activities. One essential feature of studies seeking to understand differences in need fulfillment and well-being during different leisure activities is the valid assessment of momentary experiences. Several prior studies focused on comparing TV and other leisure activities base conclusions on differences in general levels of perceived enjoyment across activities (e.g. Abraham, Velenczei, & Szabo, 2012). Such reports of experiences are thought to be tainted by recall biases and semantic information (Kahneman, Krueger, Schkade, Schwartz, & Stone, 2004) and thus are not ideal for accurately assessing how experiences differ across activities.

Designs and Analyses That Do Not Allow for Within-Person Comparisons of Experiences. Other studies that compare experiences watching TV and engaging in other activities have used methodological approaches—for example, day reconstruction approaches or experience sampling approaches—that more accurately capture actual experiences (Csikszentmihalyi & Kubey, 1981; Goodwin, Intriери, & Papini, 2005). In doing so, these studies overcome limitations associated with accurately measuring affective experiences. However, these studies are commonly limited by designs and corresponding analytic approaches that do not allow for within-person comparisons of experiences during different activities. Specifically, these studies compare means of reported experiences during TV episodes and other activities, with activity means based on aggregated experiences of all individuals who engaged in each relevant type of activity.

Because these analyses are not within-person comparisons—that is, they do not compare how people feel when they watch TV to how those same people feel when they engage in other activities—they cannot rule out the possibility that results are a function of person-related factors rather than the leisure activities themselves. For instance, because wealthy individuals tend to be more likely to engage in some types of leisure (e.g. physically active leisure, cultural activities) and also to be slightly happier (Crawford, Jackson, & Godbey, 1991; Diener, 1984), one alternative explanation of results from prior studies (e.g. Csikszentmihalyi & Kubey, 1981) is that differences in reported well-being during TV and other leisure activities may be attributable to differences between the types of people who tend to engage in those activities rather than the activities themselves. Similar arguments could be made for certain personality traits (e.g. extraversion).

¹ While space constraints prevent a thorough discussion of all relevant articles, Table S1 in the Supplementary Materials (p. 1) provides greater detail on relevant studies and their findings and limitations.

Because any differences that emerge in experiences during different activities could arguably be a function of the type of people who engage in those activities, a better approach for understanding how experiences differ across leisure activities that rules out these alternative explanations would involve collecting information about experiences during different activities (i.e. TV and other activities) from each participant and assessing within-person differences in experiences during different activities. No prior studies have made such within-person comparisons, nor have any prior studies addressed concerns about alternative explanations by sufficiently controlling for relevant individual differences (e.g. income, personality traits).

Other Methodological Approaches. Other studies have adopted a different methodological approach, assessing the relationship between daily time spent in various leisure activities and daily or end-of-day well-being (e.g. Rook & Zijlstra, 2006; Sonnentag, 2001; Sonnentag & Zijlstra, 2006). These studies have employed within-person designs (i.e. experience-sampling designs) and analyses that rule out concerns about third variables that may explain any observed associations. However, because these studies measure well-being at the end of the day or for the entire day, they are arguably less ideal for capturing comparisons of experiences during different activities than designs that measure experiences during specific activities. These studies are still relevant for addressing the question at hand, however, since they provide within-person associations between time spent in different leisure activities and momentary well-being that can be compared across activities.

Yet, to date, studies employing these designs have been limited with respect to addressing our focal research question, in that they do not distinguish between TV and other low-effort leisure activities such as reading that are commonly considered cognitively stimulating activities (Mitchell et al., 2012), and are thus likely to be experienced as being more challenging and requiring more concentration and skill than watching TV (Csikszentmihalyi & Kubey, 1981). As such activities are likely associated with different experiences of need fulfillment and well-being, including these different activities in the same category as TV limits conclusions that can be drawn about TV specifically (Sonnentag, Venz, & Casper, 2017).

Summary of Methodological Limitations. A study that overcomes the limitations of prior studies by: (1) accurately capturing experiences during different activities and (2) making within-person comparisons of experiences during TV and other activities would provide greater clarity on how TV differs from other leisure activities.

Incorporating Relevant Theoretical Perspectives

In addition to using an appropriate methodological approach, providing greater clarity on how TV differs from other leisure activities also requires incorporating various theoretical frameworks that have previously been used to address this question. To do so, we use a need-based framework that synthesises a number of theoretical perspectives to predict how experiences of need fulfillment and well-being differ when watching TV and engaging in other leisure activities. We focus on those needs that have been emphasised in prior work as important psychological mechanisms through which leisure promotes well-being for working adults (i.e. the DRAMMA model; Newman, Tay, & Diener, 2014): (1) detachment from work (i.e. mental disengagement from work) and relaxation (i.e. a state in which personal resources are not being used), (2) autonomy (i.e. the feeling that one's actions are self-determined), (3) meaning (i.e. purposefulness), (4) mastery (i.e. competence), and (5) affiliation (i.e. feeling connected to others). We suggest that, compared to other leisure activities, watching TV is equally conducive to fulfilling needs for: (1) detachment from stress and relaxation and (2) autonomy, but is less conducive to fulfilling needs for (3) meaning, (4) mastery, and (5) affiliation. Further, drawing on research that suggests that well-being is best promoted through experiences that fulfill multiple needs (Tay & Diener, 2011; Van den Broeck, Ferris, Chang, & Rosen, 2016), we suggest that watching TV should be less conducive to promoting well-being (i.e. positive affect, low negative affect, and satisfaction) than other leisure activities.

In what follows, we explain how watching TV likely differs from other leisure activities with respect to affording opportunities for need fulfillment. We compare watching TV to the following types of leisure activities: (1) physically active leisure (i.e. activities that involve physical exertion such as sports or exercise), (2) social leisure (i.e.

activities that involve spending time with others such as parties or social gatherings), (3) cognitively stimulating leisure (i.e. cognitively stimulating activities such as reading, playing games, or learning a language; Mitchell et al., 2012), and (4) creative leisure, which consists of creative expression (i.e. actively producing artifacts or expressing oneself in a creative way; Tuisku, Virtanen, de Bloom, & Kinnunen, 2016) and attending cultural activities (i.e. attending cultural events in the role of an audience or spectator; Tuisku et al., 2016).

Relaxation and Detachment From Stress. In his hierarchy of needs, Maslow (1954) emphasises physiological needs, particularly the need for homeostasis or optimal operation of physiological systems. More recently, the effort-recovery model (Meijman & Mulder, 1998) has emphasised the physiological need for homeostasis by explaining how the daily effort required to address work demands activates individuals' allostatic systems (i.e. the physiological systems that vary to meet perceived demands), which causes fatigue and harms well-being if individuals do not have regular breaks from work and similarly demanding activities. To maintain well-being, allostatic systems must be regularly allowed to return to baseline—a recuperative process that occurs when people detach from (i.e. do not think about) work-related stressors and engage in relaxing, non-stressful leisure activities. Research has shown support for the importance of detaching from work-related thoughts and engaging in relaxing activities for well-being (for a recent review, see Sonnentag et al., 2017). Because all employees experience activation of their allostatic systems to some extent during their daily work experiences (Meijman & Mulder, 1998), the need to detach from work-related thoughts and engage in relaxing, non-stressful leisure activities should be salient—albeit to different degrees—for all workers on a daily basis.

Researchers have suggested that detachment can be effectively facilitated by a variety of leisure activities. Specifically, it has been suggested that because low-effort activities such as watching TV place no demands on the individual, they are useful for allowing people to detach from stressors, facilitating needed physiological recuperation (Reinecke & Eden, 2017). However, less passive leisure activities (e.g. sports, creative activities) are also thought to promote detachment because—by

requiring concentration and absorbing one's attention in an enjoyable experience—they allow for distance from work-related thoughts (Sonnentag, 2001). Thus, TV and other leisure activities should be equally conducive to providing detachment from work stress.

Similarly, relaxation is also thought to be facilitated by a variety of leisure activities. Researchers have suggested that activities are conducive to relaxation when they require very little self-regulation or expenditure of personal resources (ten Brummelhuis & Bakker, 2012). Thus, effortless activities such as watching TV should be conducive to relaxation. However, more effortful activities can also be experienced as requiring very little self-regulation when they are intrinsically motivated—as is typically the case for more effortful leisure activities such as sports and games (Csikszentmihalyi & Graef, 1980). As a result, we expect that both watching TV and more effortful leisure activities are typically experienced as requiring very little self-regulation and are thus similarly conducive to relaxation.

Very little research has specifically examined whether people experience similar levels of detachment and relaxation when watching TV and engaging in other leisure activities. In fact, no studies to our knowledge have examined whether detachment differs when watching TV and engaging in other leisure activities. The one study that has examined whether relaxation differs when watching TV and engaging in other leisure activities did not find significant differences in relaxation between TV and other leisure activities (Csikszentmihalyi & Kubey, 1981), though—as noted above—conclusions from this study are limited because analyses were not conducted within-person.

Based on the argument from recovery theory that detachment and relaxation can be similarly facilitated by effortless activities (i.e. watching TV) or more effortful leisure activities, we predict that:

Hypothesis 1a. Employees will experience similar levels of detachment when watching TV and engaging in physical leisure activities, creative leisure activities, social leisure activities, or cognitively stimulating leisure activities.

Hypothesis 1b. Employees will experience similar levels of relaxation when watching TV and engaging in physical leisure activities, creative leisure activities, social leisure activities, or cognitively stimulating leisure activities.

Autonomy. Another important psychological need that is emphasised by self-determination theory is autonomy—the feeling that one’s actions are self-determined that results from a perceived internal locus of causality (Ryan & Deci, 2000). Autonomy has consistently been shown to predict well-being (Van den Broeck et al., 2016). Because work and family activities are often inherently obligatory, as they are domains of responsibility, they are often quite limited in the extent to which they can satisfy needs for autonomy (Diener, 1984). Since leisure activities—unlike work and family activities—are typically not experienced as obligatory (Csikszentmihalyi & Graef, 1980; Graef, Csikszentmihalyi, & McManama Gianinno, 1983), leisure is an important and salient domain for fulfilling one’s needs for autonomy (Kuykendall et al., 2017).

While people likely experience variability in the extent to which leisure activities are experienced as autonomous, we do not believe there is any reason to expect that people will experience more or less autonomy when watching TV than when engaging in other leisure activities, as both TV and non-TV leisure activities are likely to be experienced as highly autonomous. That is, research has indicated that people almost always indicate that watching TV is something they want to do—a defining feature of autonomy—rather than something they have to do (Csikszentmihalyi & Kubey, 1981). This finding is unsurprising, given that employees whose days are spent exerting effort at work should generally find low-effort activities like TV highly attractive. However, other leisure activities (e.g. social activities, physical activities) can also exhibit very high levels of autonomous (i.e. “want to”) motivation (ten Brummelhuis & Trougakos, 2014), possibly because such activities, while arguably more effortful than watching TV, are aligned with individuals’ enduring values and interests—a characteristic that confers feelings of autonomy (Ryan & Deci, 2000). Thus, while different reasons may underlie why TV and other leisure activities are experienced as autonomous, we suggest that they are likely to be equally conducive to feelings of autonomy.

Results from one prior diary study were consistent with this argument, albeit inconclusive because it did not involve within-person comparisons between activities (Csikszentmihalyi & Graef, 1980). This study showed greater experiences of autonomy during leisure activities compared to work and family activities, but few meaningful differences in autonomy across leisure activities. However, differences in autonomy during specific leisure activities have not been examined using a design that overcomes the methodological limitations discussed above. We predict that:

Hypothesis 2. Employees will experience similar levels of autonomy when watching TV and engaging in physical leisure activities, creative leisure activities, social leisure activities, or cognitively stimulating leisure activities.

Mastery. While arguably affording similar experiences of detachment, relaxation, and autonomy as other leisure activities, TV is less likely than other leisure activities to afford fulfillment of mastery needs. Mastery (or competence)—a need that is emphasised in several need-based accounts of well-being—refers to feeling effective in interactions with one's environment. Mastery has consistently been shown to predict well-being (Van den Broeck et al., 2016).

As emphasised in self-determination theory, activities must involve challenge and skill to facilitate mastery (Ryan & Deci, 2000). Passive activities like leisure—that place no demands on individuals and require no skills—are not conducive to facilitating mastery (Bakker, Demerouti, Oerlemans, & Sonnentag, 2013; Csikszentmihalyi & Kubey, 1981) and should be much less conducive to facilitating mastery than leisure activities that involve effortful and skillful engagement with an activity, such as often occurs during physical activities (e.g. sports), creative hobbies, and cognitively stimulating activities (e.g. games). Arguably, even social activities, which afford opportunities to exert and develop social skills, likely provide greater opportunities for experiencing mastery than watching TV. Past research supports the idea that watching TV is less conducive to mastery—albeit not using rigorous methods that make within-person comparisons of activities—by showing that people

report feeling less challenged and skillful when watching TV compared to other leisure activities (Csikszentmihalyi & Kubey, 1981). We predict that:

Hypothesis 3 Employees will experience lower levels of mastery when watching TV than when engaged in physical leisure activities, creative leisure activities, social leisure activities, or cognitively stimulating leisure activities.

Meaning. Meaning, defined as a sense of goal directedness or purposefulness, is a psychological need emphasised in Ryff and Keyes' (1995) account of psychological well-being, as well as in Maslow's hierarchy of needs (1954) as an aspect of self-actualisation. Consistent with these accounts, experiencing meaning has been shown to predict well-being (Steger, Oishi, & Kashdan, 2009). Unlike other needs like mastery, meaning is not necessarily facilitated by a particular attribute of an activity (i.e. challenge), but rather can be facilitated by a wide variety of factors. That is, meaning can be facilitated by activities that provide a sense of purpose, a sense of worth, or a sense of generativity (Baumeister & Vohs, 2002; Steger et al., 2009).

Given this understanding of meaning, TV is likely not conducive to providing meaning, since its inherently passive nature makes it unlikely to afford any of the experiences that facilitate meaning (i.e. purpose, worth, or generativity). In contrast, given that other leisure activities—that is, physical activities, social activities, creative activities, cognitively stimulating activities

—are less passive and involve potentially productive engagement with activities and people, they should be more conducive to generating a sense of meaning. No research to date—to our knowledge—has examined how experiences of meaning differ across different leisure activities. We predict that:

Hypothesis 4. Employees will experience watching TV as less meaningful than physical leisure activities, creative leisure activities, social leisure activities, or cognitively stimulating leisure activities.

Affiliation. The need for affiliation—often also referred to as the need for relatedness or the need to belong (Ryan & Deci, 2000)—refers to the need to feel connected to important others. Affiliation is strongly related to well-being (Van den Broeck et al., 2016). Activities are most conducive to fulfilling the need for affiliation when they provide interaction and shared experiences that allow for interpersonal connection (Bakker et al., 2013).

While TV and other leisure activities can all provide a sense of connection to some extent when others are present, activities that are more interactive— that is, that involve actively engaging with others—are more likely to provide a stronger sense of connection. Thus, we suggest that when engaging in creative, physical, social activities, or cognitively stimulating activities (e.g. learning a language or playing games) with other people, people will experience a stronger sense of affiliation than when watching TV with other people. As with meaning, we are unaware of any research examining whether people experience lower levels of affiliation when watching TV compared to when engaging in other leisure activities. Csikszentmihalyi and Kubey (1981) did find that people reported higher levels of loneliness when watching TV than when engaging in other types of leisure activities—albeit in a design that did not make within-person comparisons. We predict that:

Hypothesis 5. Employees will experience watching TV as less affiliative than physical leisure activities, creative leisure activities, social leisure activities, or cognitively stimulating leisure activities.

Consequences for Subjective Well-Being. Need-based perspectives on well-being posit that distinct needs make unique contributions to well-being and that well-being is best promoted when individuals fulfill a wide range of needs (Tay & Diener, 2011; Van den Broeck et al., 2016). This argument is based on the notion that each need provides a distinctly rewarding experience (Sheldon, Ryan, & Reis, 1996). Empirical evidence has supported this perspective by showing that needs make unique contributions to well-being (Sheldon et al., 1996; Tay & Diener, 2011; Van den Broeck et al., 2016). Because different psychological needs provide unique rewards and thus

unique benefits for well-being, leisure activities that more effectively fulfill a wider range of psychological needs should be most conducive to affording momentary subjective well-being (i.e. satisfaction, positive affect, and low negative affect). While watching TV may fulfill some psychological needs as effectively as other leisure activities, it likely does not fulfill other needs (i.e. mastery, meaning, and affiliation) as effectively. Since other leisure activities are likely to be more conducive to fulfilling a wider range of psychological needs, they should be more conducive to promoting well-being. We predict that:

Hypothesis 6. Employees will experience lower levels of well-being (i.e. lower satisfaction, lower positive affect, and higher negative affect) when watching TV than when engaged in physical leisure activities, creative leisure activities, social leisure activities, or cognitively stimulating leisure activities.

OVERVIEW OF STUDIES

We tested our hypotheses in two studies (Studies 1a and 1b) designed to overcome methodological limitations of prior studies by collecting information about how individuals experience TV and other leisure activities, using an appropriate methodological approach (i.e. the day reconstruction method; Kahneman et al., 2004) to elicit accurate experiential information and an appropriate analytic approach (i.e. paired-sample *t*-tests) to make within-person comparisons of experiences during different activities. This approach minimises concerns that any observed differences may be a function of differences in the type of people who engage in the activities. Then, in Study 2, we used a different methodological approach—a daily diary approach—to examine whether daily associations between time spent on different activities and daily well-being would converge with our findings from Study 1.²

² Prior to collecting data for Study 1, we used the Well-Being Module of the American Time Use Survey to conduct a preliminary test of a subset of our predictions (Hypotheses 1b, 4 and 6). The details of this study are reported in the Online Supplementary Materials (Appendix S2).

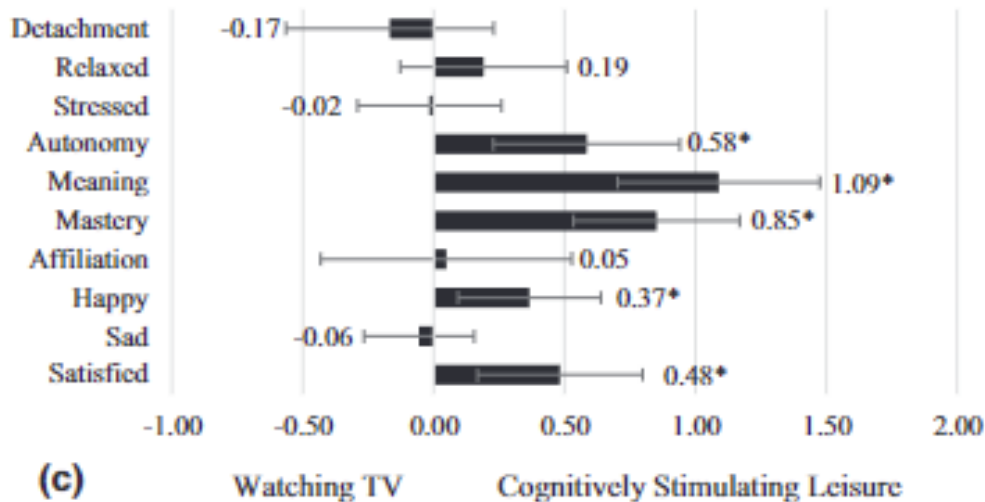
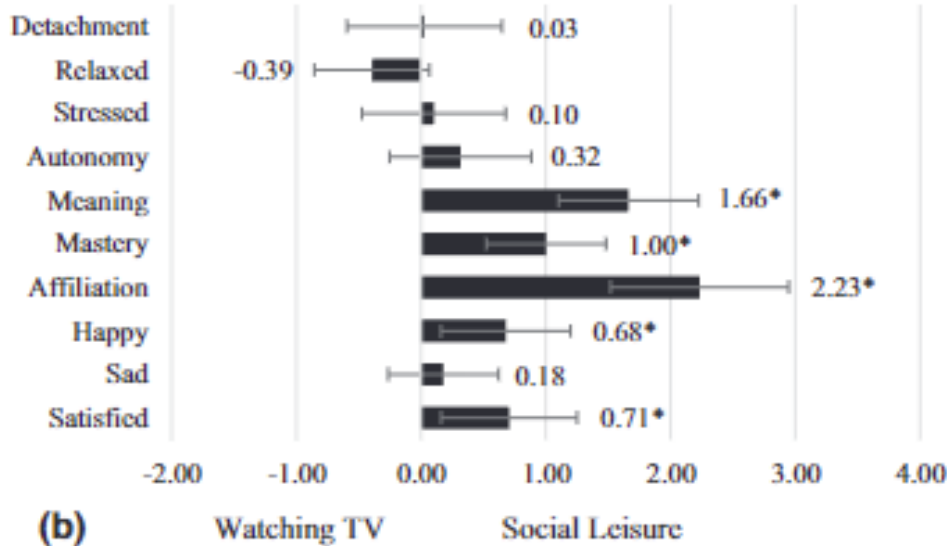
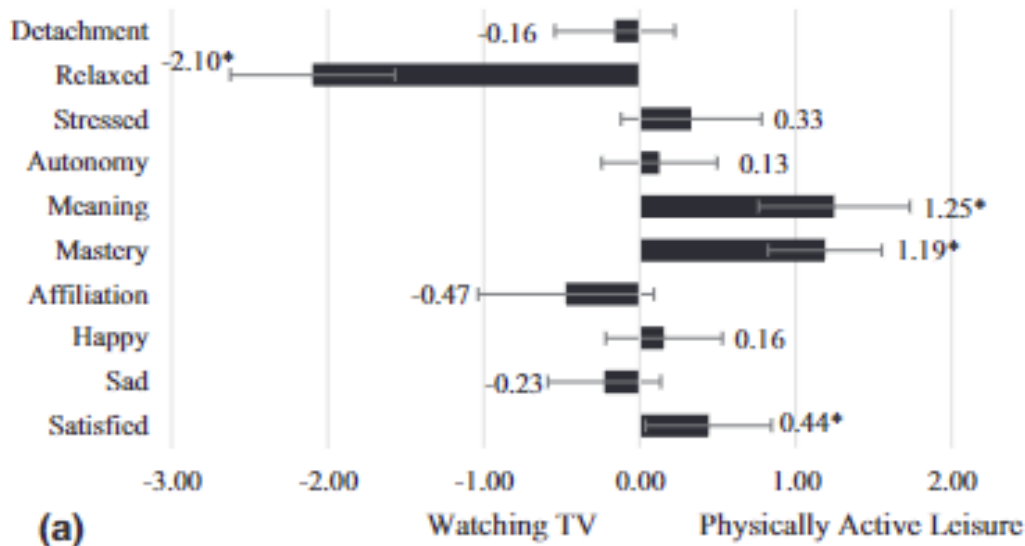
Study 1a

Participants. Using Amazon Mechanical Turk, we recruited full-time working adults in the United States who reported watching TV and participating in at least one other leisure activity on the prior day (see the list of activities in Table S2 on p. 9 of the Online Supplementary Materials) and who had completed at least 500 MTurk assignments with at least a 96 per cent approval rating. The latter criterion was imposed to ensure data quality, whereas the prior day activity criteria were imposed to allow for within-person comparisons between TV and other types of leisure. These procedures resulted in a final sample of 264 participants (50% women; mean age = 38.7 years; 76.9% white).

Materials and Procedures. Consenting participants who met the inclusion criteria completed a day reconstruction task adapted from Kahneman et al. (2004), in which they reconstructed their activity episodes from the prior day. This section asked participants to choose the activity they engaged in during each episode from a standard list of daily activities and to indicate where they were located and with whom they were interacting. After the day reconstruction task, participants were asked to complete measures assessing the extent to which they experienced need fulfillment and well-being in each reported leisure activity. This method has been shown to reduce recall bias, thus providing accurate recall of momentary experiences (Dockray et al., 2010).

We measured need fulfillment and well-being using items from published day reconstruction studies or from published validated scales. This portion of the day reconstruction task asked, "During this activity, to what extent did you [insert item]". Items used to measure the constructs included: Detachment ["forget about work"], Relaxation ["feel relaxed", "feel stressed" (indicator of the absence of relaxation)], Autonomy ["feel a sense of choice and freedom"], Meaning ["feel a sense of meaning and purpose"], Mastery ["feel capable"], Affiliation ["feel connected with people (or a person) who cares for you, and for whom you care"], and General Well-Being ["feel happy", "feel sad", "feel satisfied"]. Responses for all items ranged from 1 (Not at all) to 11 (Extremely). Sample sizes and mean levels of psychological need fulfillment and well-being for each type of leisure are included in Tables S3 and S4 on pp. 17–18 in the

Online Supplementary Materials.



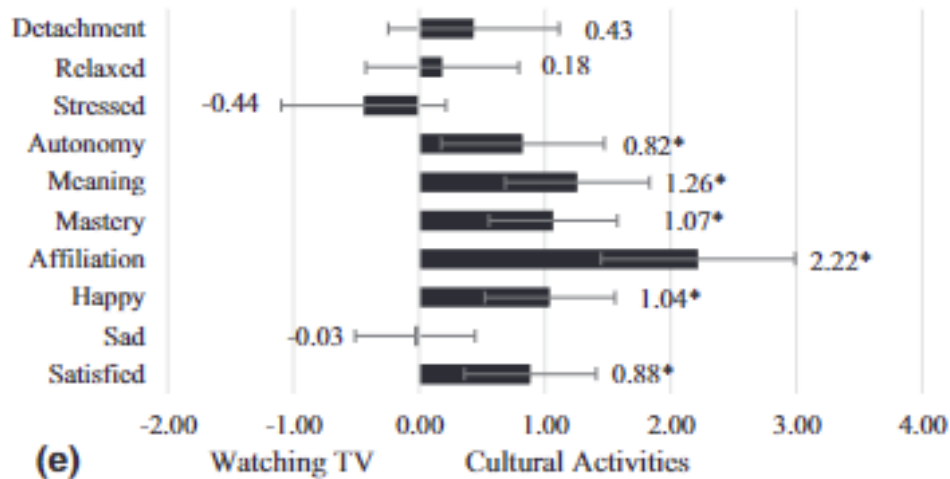
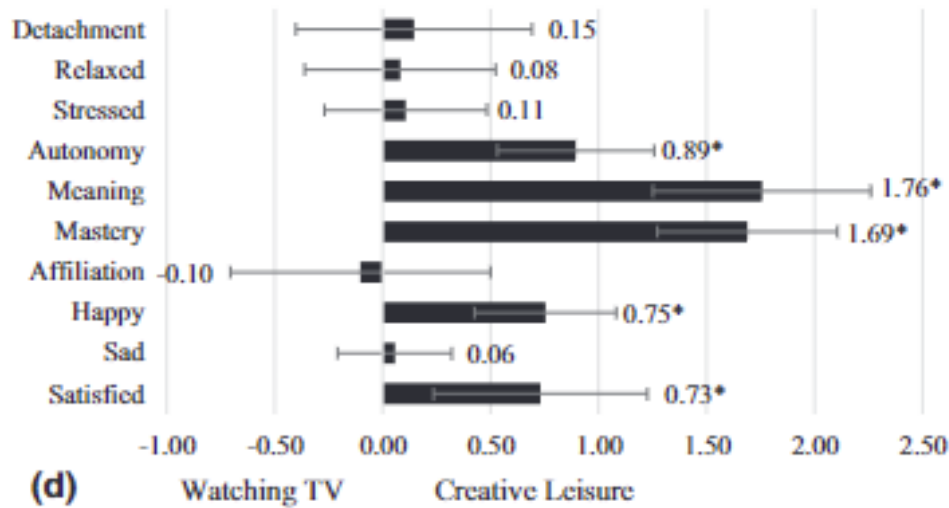


FIGURE 1. (a) Mean differences in psychological need fulfillment and well-being when watching TV and engaging in physical activities ($N = 102$). (b) Mean differences in psychological need fulfillment and well-being when watching TV and engaging in social activities ($N = 89$). (c) Mean differences in psychological need fulfillment and well-being when watching TV and engaging in cognitively stimulating activities ($N = 138$). (d) Mean differences in psychological need fulfillment and well-being when watching TV and engaging in creative expression activities ($N = 92$). (e) Mean differences in psychological need fulfillment and well-being when watching TV and engaging in cultural activities ($N = 56$). *Significant mean differences, as evidenced by 95% confidence intervals not including zero.

Analyses and Results. To compare within-person experiences during TV episodes and other leisure episodes, we conducted a series of paired-sample *t*-tests, which reflect within-person differences in need fulfillment and well-being when watching TV and engaging in another leisure activity.³ Figure 1 shows the within-person mean differences from the paired-sample *t*-tests. Positive scores represent higher levels when engaged in the physical activity, social activity, cognitively stimulating activity, creative expression activity, or cultural activity. Error bars represent 95 per cent confidence intervals. Numerical values represent mean differences. Significant mean differences, as evidenced by confidence intervals not including zero, are marked with asterisks. To supplement mean differences, we also report Cohen's *d* values (i.e. unbiased paired-sample *d*; Cumming, 2012) for significant mean differences.

As expected, people reported similar levels of detachment, as predicted by Hypothesis 1a, and relaxation (i.e. high relaxation and low stress) as predicted by Hypothesis 1b, when watching TV and engaging in other types of leisure. Results revealed only one exception: people were substantially more relaxed when watching TV than when engaging in physical activities (Cohen's $d = .96$). Thus, Hypothesis 1a was supported and Hypothesis 1b was largely supported. Results were mixed for autonomy. Partially supporting Hypothesis 2, employees reported similar levels of autonomy when watching TV and engaging in physical and social activities, but—inconsistent with Hypothesis 2—they reported greater levels of autonomy when engaged in cognitively stimulating activities ($d = .25$), creative expression activities ($d = .43$), and cultural activities ($d = .41$) than when watching TV. Supporting Hypotheses 3 and 4, employees reported lower levels of meaning and mastery when watching TV than when engaged in other leisure activities. This prediction was supported when comparing TV to every other type of leisure for meaning (watching TV vs. physical [$d = .47$], social [$d = .61$], cognitively stimulating [$d = .42$], creative [$d = .73$], and cultural [$d = .59$]) and mastery (watching TV vs. physical [$d = .64$], social [$d = .44$], cognitively stimulating [$d = .45$], creative [$d = .84$], and cultural [$d = .52$]). In.

³ If participants engaged in more than one episode of a particular type of leisure (e.g. watched TV

twice), we computed an average score for that activity. If a person engaged in multiple categories of non-TV leisure (e.g. physically active leisure and creative leisure), we used their data for more than one comparison (e.g. watching TV vs. physical activities and watching TV vs. creative expression). In initial analyses, Hypothesis 5 was only partially supported, as only social activities ($d = .79$) and cultural activities ($d = .88$) facilitated a stronger sense of affiliation than watching TV. However, in additional analyses, we conducted an additional paired-sample t -test comparing affiliation during any physical, cognitively stimulating, creative, or cultural activities with an interaction partner to affiliation during TV episodes with an interaction partner. This approach allowed us to compare TV and alternative leisure activities when an interaction partner was present, and thus when affiliative needs are most likely to be met. Results showed affiliation was higher during physical, cognitively stimulating, creative, and cultural episodes with an interaction partner than during TV episodes with an interaction partner ($d = .25$), supporting Hypothesis 5.

Regarding the momentary well-being outcomes, as expected, people reported higher levels of satisfaction when engaged in all other types of leisure than when watching TV (watching TV vs. physical [$d = .20$], social [$d = .28$], cognitively stimulating [$d = .20$], creative [$d = .31$], and cultural [$d = .41$]) and higher levels of happiness when engaged in other types of leisure than when watching TV for each leisure type except physical activity, in which levels of happiness were similar to watching TV (watching TV vs. social [$d = .28$], cognitively stimulating [$d = .17$], creative [$d = .36$], and cultural [$d = .56$]). However, no differences emerged for sadness when watching TV and engaging in any other types of leisure. Thus, Hypothesis 6 was fully supported for satisfaction, supported with one exception (TV vs. physical activities) for happiness, and unsupported for sadness.

Discussion. Using a within-person design, Study 1a results supported our general thesis that watching TV is typically less conducive to fulfilling a wider range of needs and promoting general well-being—specifically satisfaction and happiness—than other types of leisure. These results are not particularly surprising, as fulfillment of the needs emphasised in our framework tend to have stronger effects on positive affect than on negative affect (Tay & Diener, 2011; Van den Broeck et al., 2016). While

TV and other types of leisure are similarly conducive to detaching from stress and relaxing, with the one exception that watching TV is more relaxing than physically active leisure, other types of leisure are generally more conducive to fulfilling other psychological needs, including, in some cases, autonomy—an unexpected finding. These findings may be a function of some leisure activities (e.g. physical activities as social activities) being experienced as more obligatory than watching TV. Additionally, autonomy may be diminished when watching TV relative to other activities because people may actually prefer to engage in other activities but may lack the energy or resources to engage in these activities.

These findings suggest that, if relaxing or detaching from stress are salient needs, watching TV is likely to be just as conducive to fulfilling those needs as any other activity—and even more conducive to relaxing than engaging in physical activities. However, if autonomy, meaning, mastery, and affiliation are salient needs, then activities other than TV may be more conducive to fulfilling those needs. In the case of meaning and mastery, every leisure activity in our framework appears to be more conducive to fulfilling these needs than watching TV. Similarly for the well-being outcomes, leisure activities other than TV may be more conducive to facilitating positive affect and satisfaction, but not lower levels of sadness.

One limitation of Study 1a is that the well-being measures did not distinguish between high and low arousal affect items—a distinction that would provide more useful information about affective well-being when watching TV and engaging in other activities. To address this limitation, we conducted an additional study using the same design as Study 1a but with affective indicators that captured high and low levels of arousal. We expected that the differences between affective experiences during TV and other leisure activities would be most pronounced for positive activated states since: (1) fulfillment of the needs in our framework tends to have stronger effects on positive affect than on negative affect (Tay & Diener, 2011; Van den Broeck et al., 2016) and (2) TV is a particularly sedentary and passive activity and thus especially less likely to generate positive activated states compared to other, more active leisure activities. While we expected differences in affective experiences when comparing TV to other activities to be most pronounced for positive activated states, we also expected the rationale for

Hypothesis 6 (above) to extend to the other affective dimensions such that TV would be less conducive to positive deactivated states—and more conducive to negative activated and deactivated states—than other leisure activities.⁴ Thus, we predicted:

Hypothesis 7. Employees will experience lower levels of affective well-being (i.e. higher negative activated and deactivated states and lower positive activated and deactivated states) when watching TV than when engaged in physical leisure activities, creative leisure activities, social leisure activities, or cognitively stimulating leisure activities.

Hypothesis 8. When comparing affect during TV and other leisure activities, the largest differences will occur for positive activated states.

Study 1b

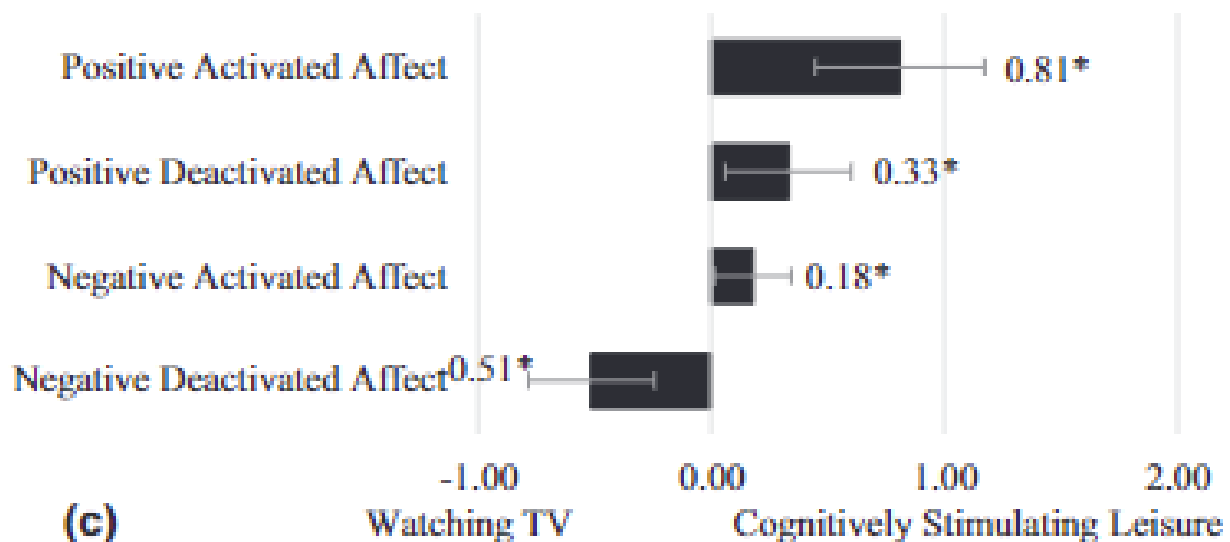
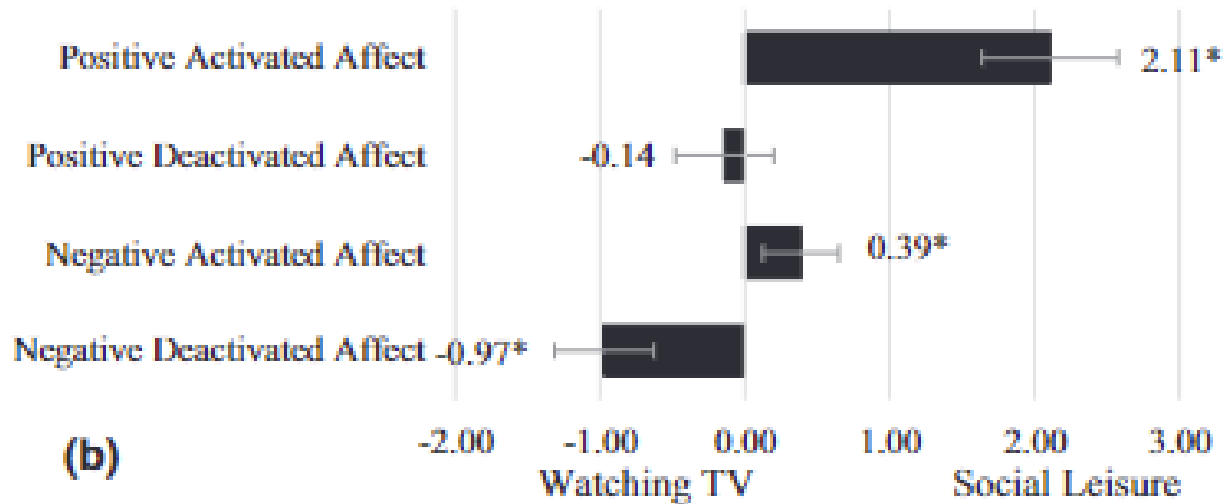
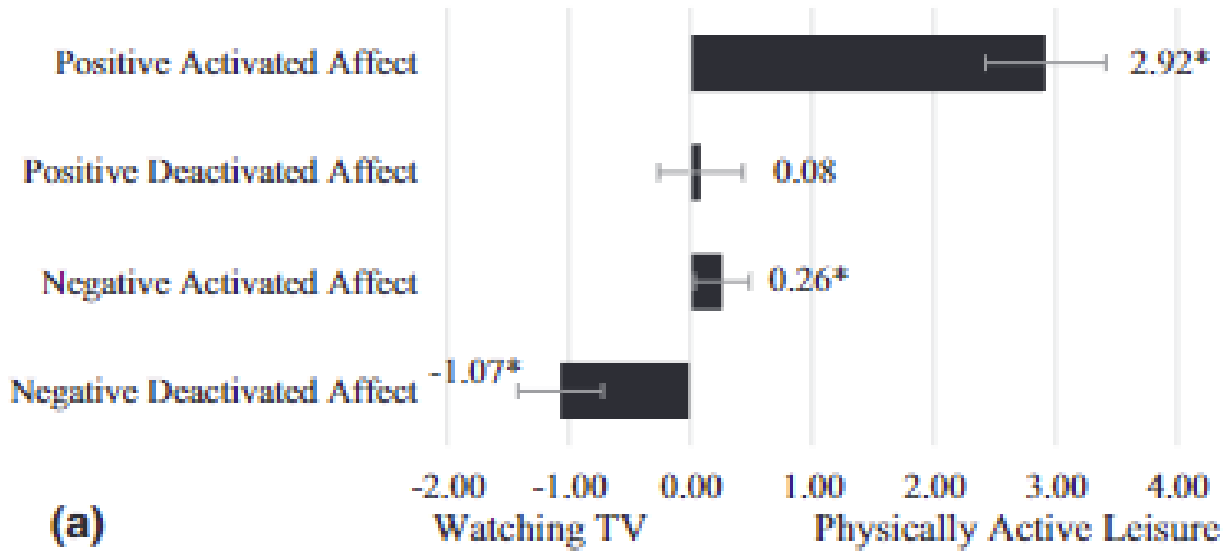
Participants. We recruited participants using the same methods as in Study 1a. These procedures resulted in a sample of 538 participants (49.8% women; mean age = 37.2; 66% white).

Materials and Procedures. We used the same procedures as were used for Study 1a. However, instead of using the indicators of need fulfillment and well-being used in Study 1a, we used the following indicators—drawn from Yik, Russell, and Steiger (2011)—to provide information on activated and deactivated affective states during activities: energetic, alert, vigorous (positive activated items; $\alpha = .87$); anxious, jittery, nervous (negative activated items; $\alpha = .95$); bored, tired, dull (negative deactivated items; $\alpha = .88$), and peaceful, at ease, serene (positive deactivated items; $\alpha = .87$).

⁴ While Study 1a did not reveal any differences in sadness when comparing TV to other leisure activities, we expected that other indicators of negative deactivated states may reveal differences.

Analyses and Results. Again, as in Study 1a, we conducted a series of paired-sample *t*-tests. Figure 2 shows the within-person mean differences from the paired-sample *t*-tests. Positive scores represent higher levels when engaged in the non-TV activity. Error bars represent 95 per cent confidence intervals. Numerical values represent mean differences. Significant mean differences, as evidenced by confidence intervals not including zero, are marked with asterisks.

Participants reported higher levels of positive activated affect when engaged in all other types of leisure than when watching TV (watching TV vs. physical [$d = 1.32$], social [$d = .96$], cognitively stimulating [$d = .37$], creative [$d = .79$], and cultural [$d = .89$]). Participants reported higher levels of positive deactivated affect when engaged in cognitively stimulating ($d = .16$) and creative leisure ($d = .42$) than when watching TV. Levels of positive deactivated affect were similar when watching TV and engaging in physically active leisure, social leisure, or cultural activities. Surprisingly, negative activated affect was lower when watching TV than when engaged in physically active leisure ($d = .12$), social leisure ($d = .17$), and cognitively stimulating leisure ($d = .07$)—the only results that reflect better experiences when watching TV than when engaged in other activities. Negative activated affect was similar when watching TV and engaging in creative leisure and cultural activities. Participants reported higher levels of negative deactivated affect when watching TV than when engaged in physically active leisure ($d = .48$), social leisure ($d = .44$), cognitively stimulating leisure ($d = .21$), creative leisure ($d = .39$), and cultural activities ($d = .37$). Thus, Hypothesis 7 was supported for positive activated affect and negative deactivated affect, partially supported for positive deactivated affect, and unsupported for negative activated affect. Hypothesis 8 was supported, as evidenced by larger d 's for positive activated states than for any other affective indicator.



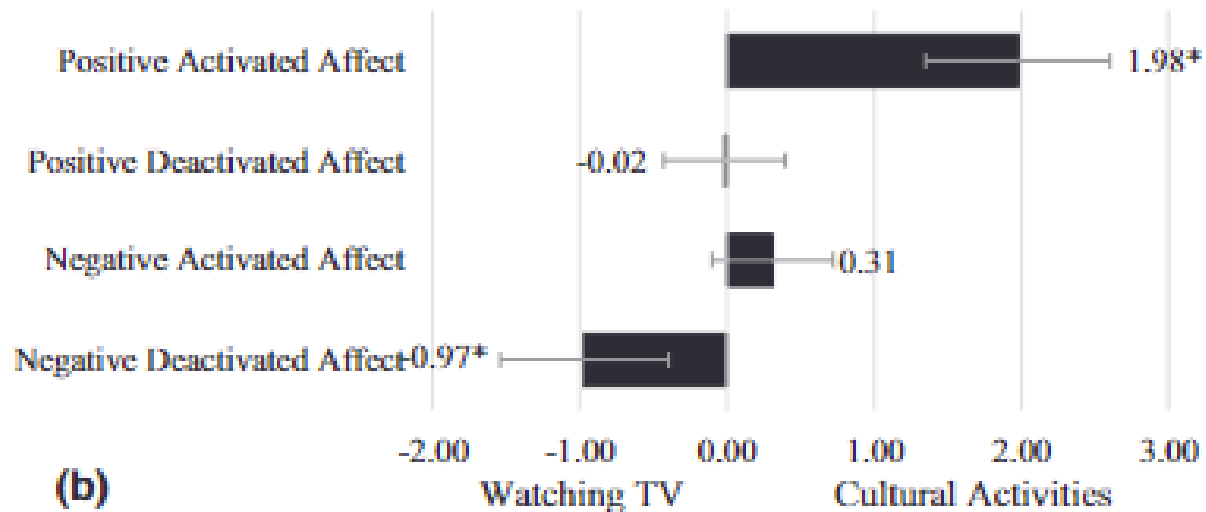
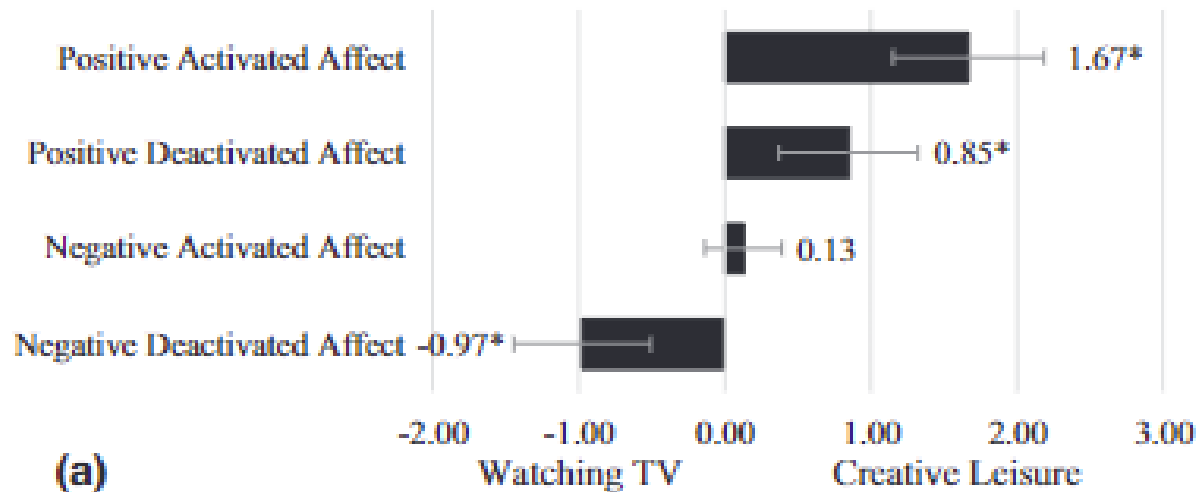


FIGURE 2. (a) Mean differences in affective well-being when watching TV and engaging in physical activities ($N = 134$). (b) Mean differences in affective well-being when watching TV and engaging in social activities ($N = 90$). (c) Mean differences in affective well-being when watching TV and engaging in cognitively stimulating activities ($N = 145$). (d) Mean differences in affective well-being when watching TV and engaging in creative expressive activities ($N = 72$). (e) Mean differences in affective well-being when watching TV and engaging in cultural activities ($N = 57$). *Significant mean differences, as evidenced by 95% confidence intervals not including zero.

Discussion. Study 1b extended our Study 1a results by considering how activated and deactivated affective states differed when watching TV and engaging in other types of leisure activities. Again, as with Study 1a, Study 1b results generally supported our hypothesis that people experience lower levels of well-being across numerous well-being indicators when watching TV than when engaging in other leisure

activities. However, results revealed important differences when distinguishing between activated and deactivated affect. Specifically, for positive activated and negative deactivated affect, participants had worse affective experiences when watching TV than when engaging in any other leisure activities. For positive deactivated affect, participants had worse affective experiences when watching TV than when engaging in some other leisure activities (i.e. cognitive stimulating and creative leisure). Importantly, for these three outcomes, in no cases were experiences *better* when watching TV than when engaging in another activity. However, results for negative activated affect showed a slightly different pattern, in that negative activated affect was lower—albeit with very small effect sizes (d 's ranging from .07 to .17)—when people watched TV than when they engaged in some other leisure activities (i.e. physically active, social, and cognitively stimulating leisure).

These findings helpfully supplement findings from Study 1a by providing a more fine-grained picture of how experiences of affective well-being—specifically activated and deactivated affective experiences—differ across leisure activities. This fine-grained information is important, given that individuals differ in the extent to which they value experiencing different types of activated and deactivated affect (Tsai, Knutson, & Fung, 2006). Our findings suggest that people typically experience poorer well-being for most affective dimensions (i.e. positive activated, negative deactivated, and—for at least some activities—positive deactivated affect) when watching TV than when engaging in other leisure activities. However, these findings do not appear to extend to negative activated affect. In retrospect, this finding is not particularly surprising, as watching TV is a particularly non-demanding and predictable activity and thus is unlikely to make people feel stressed compared to other leisure activities.

In Study 2, we assessed whether our DRM results would converge with results from another similar methodological approach often used to compare how people experience different leisure activities—a daily diary approach examining how time spent in various activities is associated with daily well-being. In this study, we compared the effects of time spent watching TV and one alternative leisure activity—physical activities—on daily well-being. As mentioned in the introduction, this approach shares the strengths of the DRM approach of Study 1 in that it is a within-person approach that

rules out concerns about person-level confounding factors. We were specifically interested in examining whether daily time spent watching TV and engaging in other leisure activities had significantly different associations with daily well-being. Because this design assesses well-being over a larger time period (i.e. a whole day) in which the person engages in numerous activities other than the focal leisure activities, we expected that the observed effects would be much smaller in magnitude, yet still converge in overall conclusions with the findings of Study 1b. That is, we expected the largest differences in associations between time spent on TV and other leisure activities to occur for positive activated states.

Study 2

Participants and Procedures. We analysed data from the Daily Stress Project (or National Study of Daily Experience)—a component of the Midlife in the United States (MIDUS II) Study (Ryff et al., 2006) collected in 2004–09 that assessed the daily experiences of middle-aged adults for eight consecutive days. Because this dataset contained information about daily time spent watching TV and engaging in physical activity, we focused only on these two activities. We limited our analyses to full-time workers ($N = 653$; gender = 53.3% women; mean age = 52.3; 91.4% white). The number of daily observations ranged from 4,718 (90.31% of a total possible of 5,224) to 4,818 (92.23% of total possible) across variables.

Measures. The relevant measures were contained within a longer survey about daily experiences. Daily TV consumption was measured using the item, “Since we spoke yesterday, how much time did you spend watching television?” Time spent in physical activities was measured using the item, “Since we spoke yesterday, how much time did you spend engaged in vigorous physical activity or exercise?” Responses were recorded in hours and minutes. Subjective well-being was measured using the items that reflected the following dimensions: positive activated affect (cheerful, full of life, enthusiastic, attentive, proud, active; $\alpha = .89$), positive deactivated affect (calm), negative activated affect (nervous, afraid, jittery, irritable, ashamed, upset, angry; $\alpha = .73$), and negative deactivated affect (sad). Items asked, “How much of the time today did you feel _____” with responses ranging from 0 (none of the time) to 4 (all of the time).

Analyses and Results. Given the nested nature of our data (daily experiences nested within individuals), we used hierarchical linear modeling (HLM) to test our hypotheses. We regressed each of the well-being outcomes on daily time spent watching television and exercising. To ensure that any associations between leisure activities and well-being are not attributable to the effects of work hours and work stress, we included daily work hours and daily work stress (measured as the perceived severity of anything stressful that happened at work or school that day, on a scale from 0 = not at all to 3 = very) as control variables.⁵ Finally, to control for possible serial dependence in the data, as is common in daily diary studies, we controlled for the previous day's levels of the outcome in each of the analyses. All variables were group-mean centered so that the Level-1 effects (i.e. the intra-individual effects) would represent within-person fluctuations not confounded by between-person effects. Means, standard deviations, and correlations are presented in Table S6 in the Online Supporting Materials (p. 7). HLM was warranted, as all affective variables exhibited substantial variance at the within-person level (positive activated = 75%; negative activated = 36%; positive affect = 54%; negative deactivated = 33%).

Table 1 reports the results of our multilevel analyses. Daily time spent watching TV and engaging in physical activities showed significantly different associations with daily positive activated affect, as evidenced by non-overlapping confidence intervals of the within-person effects. Specifically, whereas daily time spent engaged in physical activities was positively associated with daily positive activated affect, daily time spent watching TV was negatively associated with daily positive activated affect. For the other affective indicators, their associations with daily time spent watching TV and daily time engaging in physical activities were not significantly different from each other, as the

⁵ This item stemmed from another item asking whether anything stressful happened at work or school that day. We imputed a "0" on this stress severity item for participants who responded "no" to this question and subsequently were not asked the severity question. As participants were all full-time employees, we assume that their responses largely referred to work stressors, rather than school stressors.

TABLE 1
Multilevel Analysis Results

<i>Predictor</i>	<i>Positive activated affect</i> <i>Estimate (95% CI)</i>	<i>Positive deactivated affect</i> <i>Estimate (95% CI)</i>	<i>Negative activated affect</i> <i>Estimate (95% CI)</i>	<i>Negative deactivated affect</i> <i>Estimate (95% CI)</i>	<i>Satisfied</i> <i>Estimate (95% CI)</i>
<i>Within-person effects</i>					
Work hours	-.002 (-.007, .002)	-.019 (-.025, -.012)	.002 (.000, .004)	.000 (-.003, .002)	-.008 (-.014, -.003)
Work stress	-.045 (-.074, -.016)	-.193 (-.241, -.146)	.070 (.052, .089)	.016 (.000, .033)	-.121 (-.167, -.076)
Prior day feelings	.033 (-.012, .079)	-.027 (-.063, .010)	.012 (-.041, .066)	-.033 (-.121, .056)	-.007 (-.047, .033)
Time spent watching TV	-.029 (-.046, -.011)	.035 (.014, .055)	-.010 (-.018, -.002)	.002 (-.016, .019)	-.001 (-.026, .023)
Time spent on physical activities	.030 (.015, .044)	.001 (-.023, .024)	.000 (-.007, .008)	-.008 (-.014, -.002)	.020 (.003, .036)
<i>Between-person effects</i>					
Work hours	.003 (-.021, .027)	-.006 (-.031, .018)	-.012 (-.019, -.004)	-.008 (-.015, -.002)	.002 (-.020, .025)
Work stress	-.301 (-.479, -.124)	-.611 (-.809, -.414)	.182 (.120, .244)	.038 (-.012, .088)	-.418 (-.594, -.242)
Time spent watching TV	-.015 (-.070, .040)	.052 (.010, .095)	-.005 (-.020, .011)	.006 (-.012, .025)	.007 (-.042, .056)
Time spent on physical activities	.108 (.053, .163)	.052 (.000, .104)	-.002 (-.014, .010)	-.004 (-.011, .003)	.063 (.016, .111)

Notes: CI = confidence interval. Level 1 (days) $N = 4,718$ – $4,818$; Level 2 (people) $N = 651$ – 653 . Satisfied was recoded to be on a scale of 1–5 in order to be consistent with the affect outcomes. Regression coefficients are all unstandardised.

confidence intervals were overlapping. Thus, as expected, the largest differences in associations between time spent on TV and other leisure activities occurred for positive activated states.

Discussion. Results from Study 2 converged with Study 1b by showing that—compared to time spent watching TV—daily time spent in physical activities is more strongly associated with positive activated affect. While the results for positive activated affect are similar to Study 1b results, the effects are, as expected, notably smaller in Study 2. Given that Studies 1a and 1b examined well-being at the activity level and Study 2 examined well-being at the day level, effects should be smaller in Study 2 since the time frame for measuring well-being (i.e. today) covers many activity episodes other than the focal leisure activity episodes. This difference in time frame for measuring well-being (i.e. for the focal episodes vs. the whole day) may explain why Study 2 results diverged somewhat from Study 1b (i.e. no significant differences across TV and physical activities for negative activated and deactivated affect). However, we note that, for negative activated affect, differences between Study 1b and Study 2 may also be attributable to the lower reliability of the negative activated affect measure in Study 2 ($\alpha = .73$) compared to Study 1b ($\alpha = .95$). For negative deactivated affect, differences may be attributable to restricted variance in the measure of negative deactivated affect in Study 2 and to the non-ideal items available for negative deactivated affect in the MIDUS data. Findings for negative deactivated affect do converge with Study 1a where—like Study 2—“sad” was the only item representing negative deactivated affect. This suggests that people may be more bored, tired, and dull—but not sadder—when watching TV than during other leisure activities. In general, however, despite these differences across studies, Study 2 is consistent with the general conclusion from Studies 1a and 1b that watching TV is associated with lower-quality affective states—particularly positive activated states—compared to other leisure activities.

GENERAL DISCUSSION

Because employed adults often have greater choice over their leisure activities than their work and family activities (Diener, 1984), researchers have suggested that targeting leisure activities may be an important, yet overlooked approach for improving well-being (Kuykendall, Tay, & Ng, 2015). Yet, such an approach is likely to be effective only insofar as employees do not already engage in leisure activities that are most conducive to promoting well-being (Margolis & Lyubomirsky, 2019). To examine this issue, the current study examined whether the most commonly chosen leisure activity (i.e. watching TV) is substantially less conducive to experiences of need fulfillment and well-being compared to less commonly chosen leisure activities.

Drawing on need fulfillment perspectives, we argued that, compared to other leisure activities, watching TV is less conducive to fulfilling a number of psychological needs and to promoting general well-being. Our day reconstruction results in Studies 1a and 1b largely supported these predictions. Specifically, our results from the day reconstruction studies suggest that watching TV and other forms of leisure are equally conducive to detachment and relaxation (with the one exception that physical leisure is less relaxing than watching TV). However, compared to other leisure activities, watching TV is generally less conducive to generating a sense of mastery, meaning, and affiliation. As expected, other leisure activities were also more conducive to general well-being—both evaluative (i.e. satisfaction) and affective (i.e. happiness/positive affect, but not sadness). A supplementary day reconstruction study (Study 1b) looking at more fine-grained indicators of affective well-being revealed that people generally had worse affective experiences when they watched TV compared to when they engaged in other leisure activities, with the most notable exception being a few activities in which people had higher levels of negative activated affect than when they watched TV. Our day reconstruction results converged to some extent with results from a complementary methodological approach—a daily diary approach—used in Study 2. Specifically, similar to the findings from Study 1b, Study 2 highlighted the benefits of physical activities relative to watching TV by showing that time spent engaged in physical activities was associated with higher daily positive activated affect, whereas time spent watching TV was associated with lower daily positive activated affect.

In sum, our results showing that employees experience lower well-being and fulfillment of a number of psychological needs when watching TV—the activity that consumes a majority of employees' leisure time—suggest that employees have room to improve their leisure experiences. These results suggest that choosing leisure activities that are more likely to fulfill psychological needs and promote well-being may be a promising approach for employees to improve their well-being. We note that, while our study does highlight some benefits of watching TV (e.g. relaxing, detaching from work stress, and experiencing lower negative activated states), these limited benefits must be considered in light of the negative consequences of watching TV, specifically the negative health consequences known to be caused by excessive sedentary behaviors such as excessive TV consumption (Tremblay et al., 2010).

Subsequent studies using experimental designs are needed to establish causality, as reverse causality could be present. Further, if participants tend to engage in particularly enjoyable or miserable types of activities prior to or after particular leisure activities, the emotional spillover effects—or anticipatory effects—of these other activities may be impacting the experience during the focal leisure activity. While future experimental research is needed to address these issues, the present findings do reveal that people experience important differences in need fulfillment and well-being when watching TV compared to engaging in other leisure activities.

We also note that results must be interpreted with caution due to possible selection effects. Selection effects should be minimized to some extent in Study 2 because of the random sampling strategies used and the nationally representative samples obtained. However, as Study 1 lacks these features, it may be somewhat vulnerable to selection biases and results should be interpreted with caution.

Future research should also consider factors that moderate the effects of time spent in various activities on well-being. For instance, the relationship between time spent in various activities and well-being is likely moderated by various intrapersonal factors (e.g. fit with one's momentary goals) and contextual factors (e.g. the extent to which the work role fails to afford opportunities to fulfill needs). Future research should also seek to understand why leisure time is often dominated by watching TV and what psychological processes could be targeted to increase engagement in other, more

beneficial leisure activities.

In sum, our findings suggest that the documented global pattern of TV-dominated leisure among working adults likely has important implications for employee well-being. Specifically, using designs aimed at accurately capturing momentary experiences, our results show that people experience limited need fulfillment and lower levels of subjective well-being when watching TV compared to when engaging in other leisure activities. While watching TV has some benefits for well-being, spending large amounts of free time watching TV—as streaming services such as Netflix make easier than ever—and neglecting other types of leisure such as physical, social, creative, and cultural activities may result in missing out on valuable opportunities to fulfill psychological needs and promote well-being.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix S1. Review of relevant studies (Table S1).

Appendix S2. Initial test of predictions using the American Time Use Survey (Table S2).

Appendix S3. Additional Study 1a information (Tables S3 and S4).

Appendix S4. Additional Study 1b information (Table S5).

Appendix S5. Additional Study 2 information (Table S6).