

Effect of Watching Comedy on Affect in Young Adult Runners

Kelly McCaskill¹, Gene L. Farren², Paul E. Yeatts³, Michelle Bartlett², & Vanessa Fiaud²

¹University of St. Augustine, ²West Texas A&M University, ³Texas Women's University

In many studies, researchers have investigated the positive effects of distractions while exercising. In most gyms, there are usually televisions playing random channels. Young adult undergraduate runners ($N = 125$; 64 female and 61 male) completed one mile on a treadmill at their selected pace. Approximately half the participants ($n = 63$) were randomly assigned to watch the comedy video while completing their mile, and the other half ($n = 62$) completed their mile with no video. The Feeling Scale (FS; Hardy & Rejeski, 1989), which asks participants to rate on a scale from -5 (very bad) to 5 (very good) was administered to all participants before starting the mile and after completing the mile. A repeated-measures ANOVA was used to compare group means over two observations. Results revealed statistically significant greater change in affect from pre- and post-mile in the watch group than in the no watch group. These results indicate there was an increase in affect when participants watched the comedy film while completing the mile versus the participants that only completed the mile and did not watch the video. This suggests that, on average, watching videos, such as a comedy film, is an effective option to distract gym patrons from their exercise, which may further increase their affect.

Keywords: college students, exercise distractors, feeling scale, fitness facilities

It is well understood that exercise is beneficial; however, many people decide not to exercise (Hallal et al., 2012). Even though exercise buffers consequences related to aging and decreases chances of cardiovascular disease, diabetes, cancer, osteoporosis, depression and obesity, the National Center for Health Statistics (2018) indicated approximately 50% of people in most states do not meet the Centers for Disease Control (CDC) exercise recommendations. Though leisure-time physical activity trends (e.g., membership in fitness facilities) have remained relatively stable over the last 40 years, factors related to sedentary behavior such as television (TV) watching have almost doubled (Kruger et al., 2007). Although the perceived lack of time is often the most frequently reported barrier to exercise for inactive adults (Hoare et al., 2017), perceptions that other activities, like watching TV, are more enjoyable or appealing is often the second most common barrier (Auweele et al., 1997; Bartlett et al., 2011; Hoare et al., 2017; Privitera et al.,

2014). Despite heavy research focus, continued research on factors that promote exercise adherence is needed (Hallal et al., 2012). Jones et al. (2014) indicated that discontinued exercise is often due to feelings of fatigue and negative effects that exercising have on the body.

One possible solution to this challenge is to distract the mind of the exerciser from the feelings of fatigue and negative effects by focusing their attention elsewhere (Jabr, 2013; Russell et al., 2002). Distractions while exercising have a high demand on the auditory and visual systems of the body by commanding our attention and focus rather than our attention and focus centering on the exercises themselves (Hutchinson et al., 2015). In fitness facilities, people who use cardio equipment (e.g., treadmills) often listen to music, watch TV, or read books. Listening to music, watching TV or reading are considered an attentional distraction from the workout (Russell et al., 2002). The TV shows in each recreation facility differ from place to place; however, some fitness facilities have banned certain content because it was deemed to promote negativity (Walsh, 2018). For a distraction to be beneficial, it is recommended to be individually based on what the person perceives as enjoyable, appealing, and/or motivating (Privitera et al., 2014).

RECEIVED: July 12, 2021

ACCEPTED: August 18, 2022

CONTACT: Kelly McCaskill, 620 Maybrook Dr., Buda, TX 78610, USA. E-mail: k.mccaskill@usa.edu

Many researchers have found that listening to music and/or watching TV while exercising can be used as a distraction to possibly increase pleasure and enjoyment of exercise (Hutchinson et al., 2015; Privitera et al., 2014). Given that enjoyment is a key predictor in determining future participation (Bartlett et al., 2011), positively manipulating other factors that foster enjoyment may improve adherence. Although some fitness professionals argue that exercisers should concentrate on their exercise programs and not be distracted, the majority of leisure-time exercisers disagree as they seek facilities with sophisticated exercise entertainment, like TVs and cardio machines with touchscreens (Hoffman, 2019). Further, exercise itself can act as a distractor as it can distract exercisers from the daily grind and related stressors; it distracts the engagers from focusing on stressful stimuli and emancipates them from related negative mood enhancers (Anderson & Shivakumar, 2013).

While not the same, mood and affect are related and often congruent, with the glossary of the DSM-V differentiating between the constructs as “*affect is momentary (like weather), while, mood is a prolonged emotion (like climate)*” (American Psychological Association, 2013, p. 824). It is well established that exercise of appropriate intensity and duration, on average, results in enhanced mood (Hoffman & Hoffman, 2008). It is also established that laughter enhances mood (Bahari & Lorica, 2019). Given Hutchinson and colleagues (2015) found the greatest affective valence scores participants had while exercising was when participants experienced greater dissociation (e.g., watching a music video), the current study aimed to investigate whether the distraction of watching comedy during exercise (i.e., one mile on a treadmill) led to an enhanced positive affect over and above exercising with no distractors present. It was hypothesized that participants who were distracted by watching a comedy program while exercising (i.e., treatment condition) would report a statistically significant greater increase in affect following the bout of exercise (i.e., one mile on a treadmill) over and above participants who completed that same exercise activity but were not distracted (i.e., control condition).

Method

Participants

Participants were undergraduate students from a Hispanic-serving university in the Southwest region of the United States. Once the study received approval from the Institutional Review Board, participants were

recruited via posted flyers throughout common areas on the university campus and via face-to-face through class announcements during the first two weeks of a 5-week summer semester. For compensation, each participant was entered into a lottery to win a university logoed double-wall vacuum insulated water bottle. A priori power analysis for a repeated-measures, between-factor ANOVA indicated the minimum total sample size needed to achieve 80% power with a moderate effect size ($f = .25$) and an alpha level of 0.05 was 98 participants (49 per group). One-hundred and twenty-five students were recruited to participate (64 female and 61 male) in this study to protect against participant attrition, outlier deletion, and to avoid an underpowered analysis, in that, researchers tend to overestimate the effect sizes in a priori analyses (Brysbart, 2019; McCrum-Gardner, 2010). Participants were able to choose a participation time slot that suited their schedules within a three-week span. Each participant provided written informed consent before he or she participated, and all participants were healthy enough to participate according to the 2017 Physical Activity Readiness Questionnaire (Warburton et al., 2017). In addition, for inclusion in the study, participants needed to be familiar with using a treadmill and be confident they could complete one mile on a treadmill at a fixed self-selected speed. Participants were systematically randomly assigned to either the experimental group ($n = 63$) or the control group ($n = 62$) after they completed the warm-up. The experimental group (i.e., watch group) watched the video while completing the one mile on the treadmill, and the control group (i.e., no watch group) completed the one mile on the treadmill without any distractors present.

Procedures and Materials

Selection of Standup Comedy

A panel of 25 university students, (12 male and 13 female) from the same university in which the participants were to be sampled, were asked to write their top three favorite standup comedy shows on a piece of paper. For each of the 25 responses, first choice was given three points, second choice was given two points, and third choice was given one point. This procedure was done to ensure that the video playing would have a greater probability of being deemed humorous by the participants (Hutchinson et al., 2015). Of the 25 responses, Jeff Dunham: Relative Disaster (Simon & McNeil, 2017) appeared on 17 papers, with ten first choices and total score of 42 points. Second highest score was 21 points; thus, *Jeff Dunham: Relative Disaster* was selected as the video used in this study.

Measures and Equipment

Sex was the only demographic information collected. All participants used the Woodway® For The Long Run® DESMO model treadmill (Woodway USA, Inc.) to complete one mile on the treadmill. During a warm-up, participants were asked to self-select a fixed speed at which they completed their one mile. The speed was recorded for each participant. The Feeling Scale (Hardy & Rejeski, 1989) was used to assess the affective valence of the participants twice: once before participation in the one mile on the treadmill and once after the one mile on the treadmill was completed. Participants were asked to rate how they felt, right now, on a scale ranging from *very bad* (-5) to *very good* (5) using the posted scale. The Feelings Scale (Hardy & Rejeski, 1989), which was designed as a measure of in-task affect, was posted on the wall in front of the treadmill so that the participants could clearly view it (Figure 1). Participants randomly assigned to the watch group were also asked to rate the extent they enjoyed the video on a scale from *strongly did not like* (1) to *strongly liked* (10).

Figure 1. Equipment and Instrument Setup



Note. Feeling Scale (How do you feel right now?) is posted on the wall in front of participant and above the HP® Laptop streaming the video. Speakers are to the right and left of the laptop. The HP® Laptop was closed for participants in the no-watch group.

The video was streamed on an HP® Laptop placed directly in front of the treadmill, and an auxiliary speaker was used to provide appropriate user selected audio volume (Figure 1).

Procedure

After the participants met the inclusion criteria and agreed to participate, they selected their 30-minute participation time slot. Time slots were available from 7:00am to 7:00pm for 25 straight days during the summer of 2019. Participants were informed of the particulars of the study protocol, including the setting and appropriate wear (i.e., shoes and clothing) when they selected their 30-minute participation time slot. In addition, a researcher sent all participants a text message reminding them of their participation time slot 24 hours before their 30-minute participation time slot. This message also reiterated location and appropriate wear guidelines for participation. During their self-selected time slot, each participant read and signed the informed consent and were again informed of the safety guidelines and potential risks. Participants were then asked to start a two-minute warm up, which consisted of finding the preferred speed at which they chose to complete the one mile. At the end of the two-minute warm-up, participants preferred speed was finalized and recorded. Participants would then click the stop button on the treadmill. Before participants began the one mile, they were asked to rate their affective valence using the Feeling Scale (Hardy & Rejeski, 1989). The rating was recorded as the pre-mile measure. Participants were then given time to prepare and stretch, whether it was dynamic or static, before running their one mile. Once participants indicated they were ready to begin, they were told their group assignment and to begin their one mile at their self-selected fixed speed until one mile was completed. As displayed in Figure 1, when the watch group began their one mile on the treadmill, the video also began streaming from the beginning of the video on the HP® laptop in front of them at the audio volume they selected. For all participants, once they completed their one mile, they were again asked to rate their affective valence using the Feeling Scale (Hardy & Rejeski, 1989). This rating was recorded as the post-measure. For the watch group, participants were also asked to rate the extent they enjoyed the video. This measure concluded participation.

Data Analysis

Statistical analyses were conducted using SPSS® 24.0 (IBM Corporation, Armonk, NY, USA) for Windows®/ Apple Mac®, and statistical significance was set at $\alpha < .05$. G*Power Version 3.1.9.6 (Faul et al., 2009) was

EFFECT OF WATCHING COMEDY ON AFFECT

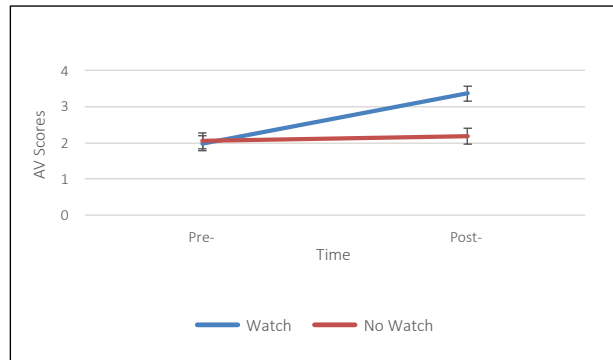
used to perform the a priori power analysis. Before hypothesis testing, descriptive statistics were explored and independent-samples *t*-tests were conducted to explore mean differences of the studied variables (i.e., speed, pre- and post-affect rating, and enjoyment of video) between sexes to determine if sex should be controlled and to explore speed mean difference between groups. To determine whether differences in participants' affect between the pre- and post-measure were statistically significantly different across groups a repeated-measures ANOVA was performed with group assignment as the between-subjects variable and affect as the within-subjects variable.

Results

Results of the initial independent-samples *t*-tests, displayed in Table 1, indicated mean values of the studied variables were not statistically significantly different between sexes. Additionally, mean speed of the watch group (*M* = 4.92 mph, *SD* = 1.65) and no-watch group (*M* = 4.60 mph, *SD* = 1.34) were not statistically significantly different, *t*(123) = -1.19, *p* = .24. Given the results of the previous tests, sex and speed were not controlled in further analyses. As displayed in Table 2, results of the repeated-measures ANOVA indicated a statistically significant within-subjects main effect

for affect, *F*(1, 123) = 23.12, *p* < .001, η_p^2 = .16, and interaction effect for affect * group, (*F*(1, 123) = 16.66, *p* < .001, η_p^2 = .12. Results also indicated a statistically significant between-subjects main effect for group, *F*(1, 123) = 3.97, *p* = .048, η_p^2 = .03. Figure 2 is the graphic representation of the mean differences in the affect scores between the treatment and control groups.

Figure 2. Pre- and Post- Affective Valence Mean Score Differences Between the Watch and No-Watch Groups



Note. This figure demonstrates the change in mean scores of affective valence (AV) from pre- to post-mile. Error bars reflect the standard error of the mean scores.

Table 1. Results of Independent-Samples *t*-tests Examining Mean Differences Between Sexes

Variable	Female (<i>n</i> = 64)		Male (<i>n</i> = 61)		<i>t</i>	<i>p</i> -value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Speed	4.51	1.42	5.02	1.56	-1.94	.055
Pre-AV	1.92	1.65	2.13	1.75	-0.69	.492
Post-AV	2.63	2.09	2.93	1.78	-0.89	.375
Enjoyed Video	6.47	1.48	6.00	2.91	0.81	.421

Note. Enjoyed Video *n* = 63; AV = affective valence.

Table 2. Means, Standard Deviations, and ANOVA Statistics for the Studied Variables

Variable	Watch Group		No-Watch Group		ANOVA			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Effect	<i>F</i> Ratio	<i>df</i>	η_p^2
AV					G	3.97*	1	.03
Pre-AV	1.98	1.65	2.06	1.75	T	23.12**	1	.16
Post-AV	3.37	1.65	2.18	2.05	G x T	16.66**	1	.12

Note. *N* = 125. ANOVA = analysis of variance; AV = affective valence; G = group; T = time. **p* < .05. ***p* < .01.

Discussion

The purpose of the present investigation was to examine whether the distraction of watching comedy while completing one mile on a treadmill demonstrated enhanced affect over and above completing one mile on a treadmill with no distractors present. Results indicated the treatment group experienced a statistically significant greater positive change in affect from pre- to post-activity than the control group. This finding supported the hypothesis that being distracted by watching comedy while running would demonstrate a positive affect increase significantly greater than an increase from running with no distractor present. Although, this greater increase in affect is likely to solely be attributed to being distracted (Hutchinson et al., 2015; Privitera et al., 2014; Russell et al., 2002), Bahari and Lorica (2019) indicates that laughter is also likely to enhance mood, and thus affect. Therefore, this significant positive change could also be due to watching the comedy film alone. However, Bahari and Lorica (2019) explain that laughter therapy can increase a chance of having a more positive experience overall while strengthening positive emotions, in that laughter is associated with enhanced dopamine and serotonin levels. Therefore, an increase in affect from watching comedy may also increase the positive emotions of activity performed while watching comedy (e.g., running). However, this hypothesis should be further tested by adding an additional control group that watches the video without completing a mile. Further, future studies can also compare varying levels of perceived comedic value on affect while exercising to measure if comedic value moderates the relationship.

As previously noted, any form of distraction that is perceived enjoyable could have raised the affect in that it provided a distraction (Hutchinson et al., 2015; Privitera et al., 2014; Russell et al., 2002). Many researchers have found that listening to music and/or watching TV while exercising can be used as a distraction to possibly increase pleasure and enjoyment of exercise (Hutchinson et al., 2015). The comedy film could have been a distraction to the stressor of completing the mile for some; thus, increasing their pleasure and enjoyment of exercise. In Hutchinson and colleagues' article, the highest pleasure was when participants listened to music or when they listened to music and watched a video. Although enjoyment and affect response are not the same construct, previous research indicates they are highly related (Raedeke,

2007). While watching a comedy film, participants were using visual and audio senses, therefore, creating a distraction from the exercise and having a more positive affect than participants who were not provided a distractor. Distractions such as music and video can grab a person's attention, reduce the perception of the amount of exertion and increase motivation to exercise (Hutchinson et al., 2015). Distractions such as watching an enjoyable video can induce positive effects of exercise onto one's mood (Privitera et al., 2014). Distractions during exercise can enhance mood during exercise, but also after exercise is complete (Privitera et al., 2014).

To our knowledge, this was the first study to investigate the effect of watching comedy on affect while running in young adult runners. Therefore, the current study expands the existing knowledge related to the studied variables. On the other hand, results of the present study should be considered in light of the following limitations. First, particulars of the sample may limit generalizability to populations with similar geographical and age demographics. To increase generalizability, subsequent research should examine samples with different geographical and age demographics, as well as conducting analyses that control for possible covariates such as preferred exercise mode, exercise experience, and race. Second, results may have been different with a different comedy. While the results of the enjoyment of video measure indicated the participants who watched the video, on average, perceived the video more positively than negatively, distraction activities like watching TV should be enjoyable to the person and have self-motivating factors to the individual for best mood enhancement results after exercise (Russell et al., 2002). Thus, future studies should examine a more individually determined comedy selection. Third, it should be noted that a positive affective response after activity may not predict future motives and may decrease with time (Cavarretta et al., 2019; Rhodes & Kates, 2015). Subsequent research should include additional measurement times of affect, such as during and 30 minutes after activity. Lastly, results may be attributable to the distraction alone. Future studies should include equivalent controls such as a group watching a non-comedy video or group watching the video but not completing a mile. In addition, future studies should also examine the possible negative effects of distractions that runners do not enjoy as an equivalent control.

ORCID

Kelly McCaskill

 <http://orcid.org/0000-0002-0427-2308>

Gene L. Farren

 <https://orcid.org/0000-0002-7180-3922>

Paul E. Yeatts

 <https://orcid.org/0000-0003-1597-2294>

Michelle Bartlett

 <https://orcid.org/0000-0002-5031-8485>

Vanessa Fiaud

 <https://orcid.org/0000-0002-5306-0627>

References

- American Psychological Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Anderson, E., & Shivakumar, G. (2013). Effects of exercise and physical activity on anxiety. *Frontiers in Psychiatry, 4*(APR), 10–13. <https://doi.org/10.3389/fpsy.2013.00027>
- Auweele, Y., Rzewnicki, R., & Mele, V. (1997). Reasons for not exercising and exercise intentions: A study of middle-aged sedentary adults. *Journal of Sports Sciences, 15*(2), 151–165. <https://doi.org/10.1080/026404197367425>
- Bahari, K., & Lorica, J. D. (2019). The effects of laughter therapy on mental health: An integrative literature review. *The Malaysian Journal of Nursing, 10*(3), 55–61. <https://doi.org/10.31674/mjn.2019.v10i03.008>
- Bartlett, J. D., Close, G. L., Maclaren, D. P. M., Gregson, W., Drust, B., & Morton, J. P. (2011). High-intensity interval running is perceived to be more enjoyable than moderate-intensity continuous exercise: Implications for exercise adherence. *Journal of Sports Sciences, 29*(6), 547–553. <https://doi.org/10.1080/02640414.2010.545427>
- Brysbaert, M. (2019). How many participants do we have to include in properly powered experiments? A tutorial of power analysis with some simple guidelines. *Journal of Cognition, 2*(1), 1–38. <https://doi.org/10.5334/joc.72>
- Cavarretta, D. J., Hall, E. E., & Bixby, W. R. (2019). Affective responses from different modalities of resistance exercise: Timing matters! *Frontiers in Sports and Active Living, 1*(August), 1–6. <https://doi.org/10.3389/fspor.2019.00005>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*, 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Hallal, P. C., Andersen, L. B., Bull, F. C., Guthold, R., Haskell, W., & Ekelund, U. (2012). Global physical activity levels: Surveillance progress, pitfalls, and prospects. *The Lancet, 380*(9838), 247–257. [https://doi.org/10.1016/S0140-6736\(12\)60646-1](https://doi.org/10.1016/S0140-6736(12)60646-1)
- Hardy, C. J., & Rejeski, W. J. (1989). Not what, but how one feels: The measurement of affect during exercise. *Journal of Sport and Exercise Psychology, 11*(3), 304–317. <https://doi.org/10.1123/jsep.11.3.304>
- Hoare, E., Stavreski, B., Jennings, G. L., & Kingwell, B. A. (2017). Exploring motivation and barriers to physical activity among active and inactive Australian adults. *Sports, 5*(3), 1–8. <https://doi.org/10.3390/sports5030047>
- Hoffman, F. (2019, June). Why entertainment options are necessary at your gym. *Club Business International*. <https://www.ihrsa.org/improve-your-club/why-entertainment-options-are-necessary-at-your-gym/>
- Hoffman, M. D., & Hoffman, D. R. (2008). Exercisers achieve greater acute exercise-induced mood enhancement than nonexercisers. *Archives of Physical Medicine and Rehabilitation, 89*(2), 358–363. <https://doi.org/10.1016/j.apmr.2007.09.026>
- Hutchinson, J. C., Karageorghis, C. I., & Jones, L. (2015). See hear: Psychological effects of music and music-video during treadmill running. *Annals of Behavioral Medicine, 49*(2), 199–211. <https://doi.org/10.1007/s12160-014-9647-2>
- Jabr, F. (2013, March). Let's get physical: The psychology of effective workout music. *Scientific American*. <https://www.scientificamerican.com/article/psychology-workout-music/>
- Jones, L., Karageorghis, C. I., & Ekkekakis, P. (2014). Can high-intensity exercise be more pleasant? Attentional dissociation using music and video. *Journal of Sport and Exercise Psychology, 36*(5), 528–541. <https://doi.org/10.1123/jsep.2013-0251>
- Kruger, J., Carlson, S. A., & Kohl, H. W. (2007). Fitness facilities for adults. Differences in perceived access and usage. *American Journal of Preventive Medicine, 32*(6), 500–505. <https://doi.org/10.1016/j.amepre.2007.02.003>
- McCrum-Gardner, E. (2010). Sample size and power calculations made simple. *International Journal of Therapy and Rehabilitation, 17*(1), 10–14. <https://doi.org/10.12968/ijtr.2010.17.1.45988>
- National Center for Health Statistics. (2018). Exercise or physical activity. *Center for Disease Control and Prevention*. <https://www.cdc.gov/nchs/fastats/exercise.htm>
- Privitera, G. J., Antonelli, D. E., & Szal, A. L. (2014). An enjoyable distraction during exercise augments the positive effects of exercise on mood. *Journal of Sports Science and Medicine, 13*(2), 266–270.
- Raedeke, T. D. (2007). The relationship between enjoyment and affective responses to exercise. *Journal of Applied Sport Psychology, 19*(1), 105–115. <https://doi.org/10.1080/10413200601113638>

EFFECT OF WATCHING COMEDY ON AFFECT

- Rhodes, R. E., & Kates, A. (2015). Can the affective response to exercise predict future motives and physical activity behavior? A systematic review of published evidence. *Annals of Behavioral Medicine, 49*(5), 715–731. <https://doi.org/10.1007/s12160-015-9704-5>
- Russell, W. D., Pritschet, B., Frost, E., Emmett, J., Pelley, T. J., Black, J., Owen, J., & Woodall, T. (2002). A comparison of post-exercise mood enhancement across common exercise distraction activities. *Medicine & Science in Sports & Exercise, 34*(5), S29. <https://doi.org/10.1097/00005768-200205001-00160>
- Simon, M., & McNeil, M. (2017). Jeff Dunham: Relative Disaster. *NetFlix*.
- Walsh, P. (2018, January 5). Life Time fitness tunes out all-news TV outlets from its big screens. *Star Tribune*. <https://www.chicagotribune.com/business/ct-life-time-fitness-cable-news-20180105-story.html>
- Warburton, D. E. R., Jamnik, V. K., Bredin, S. S. D., Shephard, R. J., & Gledhill, N. (2017). The 2017 Physical Activity Readiness Questionnaire for Everyone (PAR-Q+) and electronic Physical Activity Readiness Medical Examination (ePARmed-X+). *The Health & Fitness Journal of Canada, 10*(1), 29–32. <https://doi.org/10.14288/hfjc.v10i1.234>