

# Associations Between Marijuana Use and Time Spent Playing Different Types of Video Games Alone and with Others

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## INTRODUCTION

Different types of video games may be associated with risky behaviors more so than others. One study found that heavy video gaming predicted less marijuana use in adolescents, but did not analyze findings based on type of game (Liu, 2014). In addition, playing more risk-glorifying games is associated with alcohol and drug use for both genders but it is unclear whether who adolescents play this style of game with influences their marijuana consumption (Hull et al., 2014). This is relevant because adolescents typically use marijuana during leisure time to enhance activities such as video gaming. (Liebregts et al., 2014). Little has been documented about how the type of video game influences the association between time spent playing video games and marijuana use as well as how who they play with influences this association. **The purpose of this study was to explore whether types of video games and who adolescents play them with predict marijuana use.**

## SAMPLE

### The Adolescent Adjustment Project

- Participants were drawn from a five year longitudinal study examining the relationship between family dysfunction and adolescent adjustment
- This study utilized data from Wave 3 which was collected in the spring of 2007
- Adolescents were recruited by contacting public high schools in Delaware, Pennsylvania, and Maryland and inviting them to participate
- The sample included 1,001 adolescent boys (47%) and girls (53%) with ages ranging from 15 to 17;  $M_{age} = 16.09$ ,  $SD = .68$
- 59% Caucasian; 22% African-American; 12% Hispanic; 2% Asian; 5% 'Other'

## PROCEDURE

In the spring of 2007, 10<sup>th</sup> and 11<sup>th</sup> grade adolescents were administered a self-report survey in school by trained research personnel following parental consent and adolescent consent. The survey took approximately 40 minutes to complete and participants received a movie pass incentive as well as an invitation to participate again the next spring at time 4.

## MEASURES

**Adolescent Drug Use.** Participants were asked how frequently they had used marijuana in the last 6 months. The response scale ranged from 0 = *no use* to 7 = *every day*. Because this score was positively skewed, a logarithmic transformation was used.

**Video Game Play.** Participants reported their frequency of playing video games on a typical day. The response scale ranged from 1 = *none* to 6 = *4 or more*.

**Who Adolescents Play With.** They were also asked if they usually play video games alone or with others. This was dichotomized as 0 = played with others and 1 = played alone.

**Types of Video Games.** Adolescents were additionally asked what types of video games they play, dichotomously coded as 0 = do not play that type of game and 1 = play that type. Results were drawn from racing games and physical games such as those on a Wii game system, but data was collected from a larger pool of video game types. Data analyzed for fantasy, war, sports, traditional, and simulation games were not statistically significant.

## RESULTS

Figure 1. Physical Games and Marijuana Use

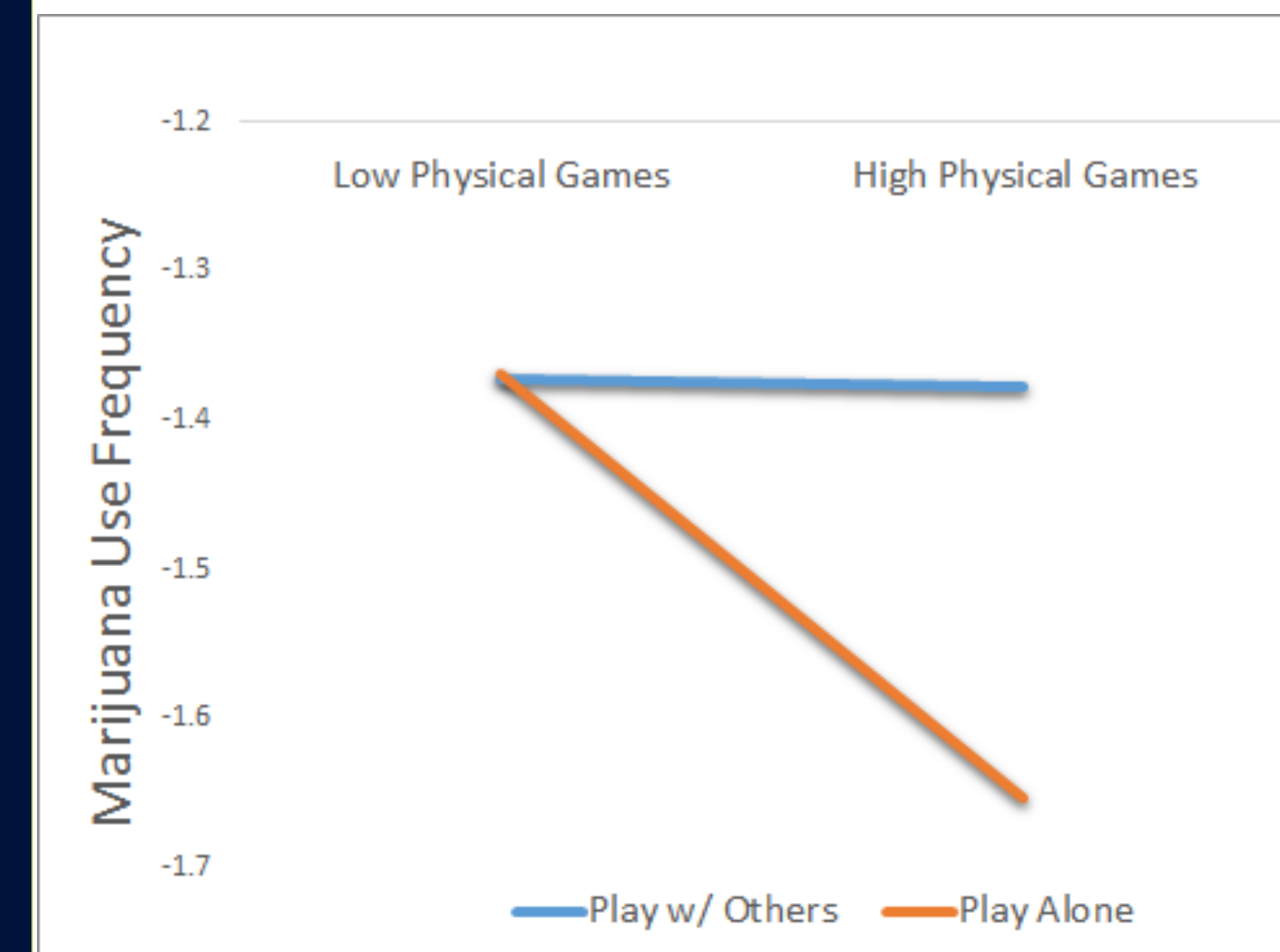
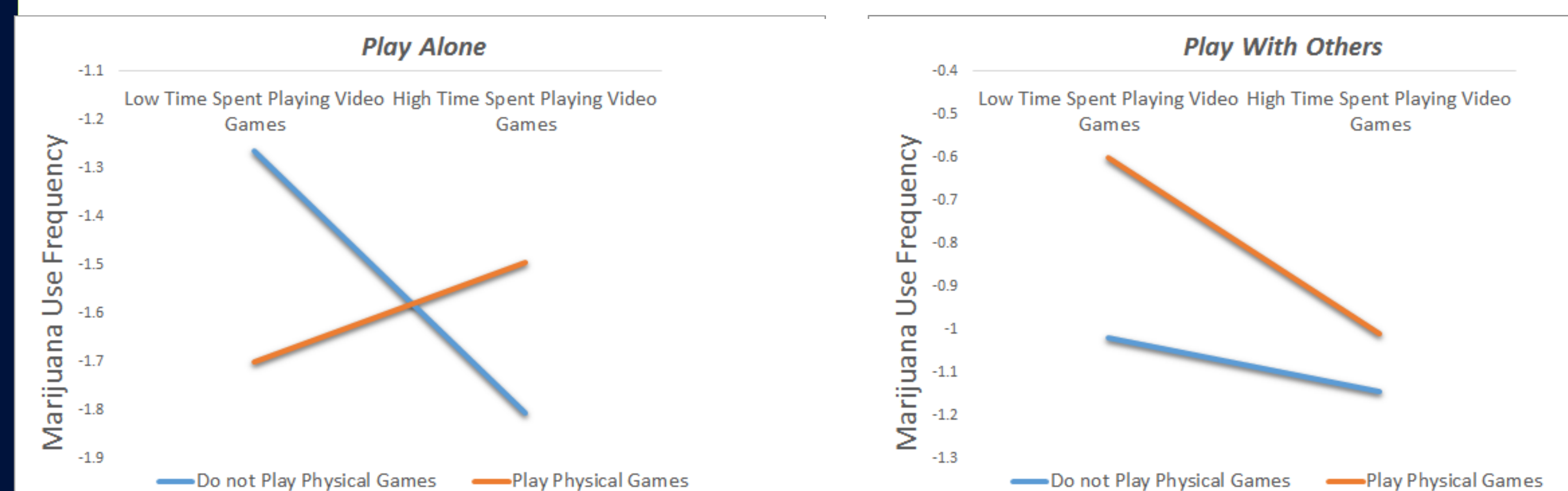


Figure 2. Marijuana Use as influenced by with Whom Adolescent Play Physical Games

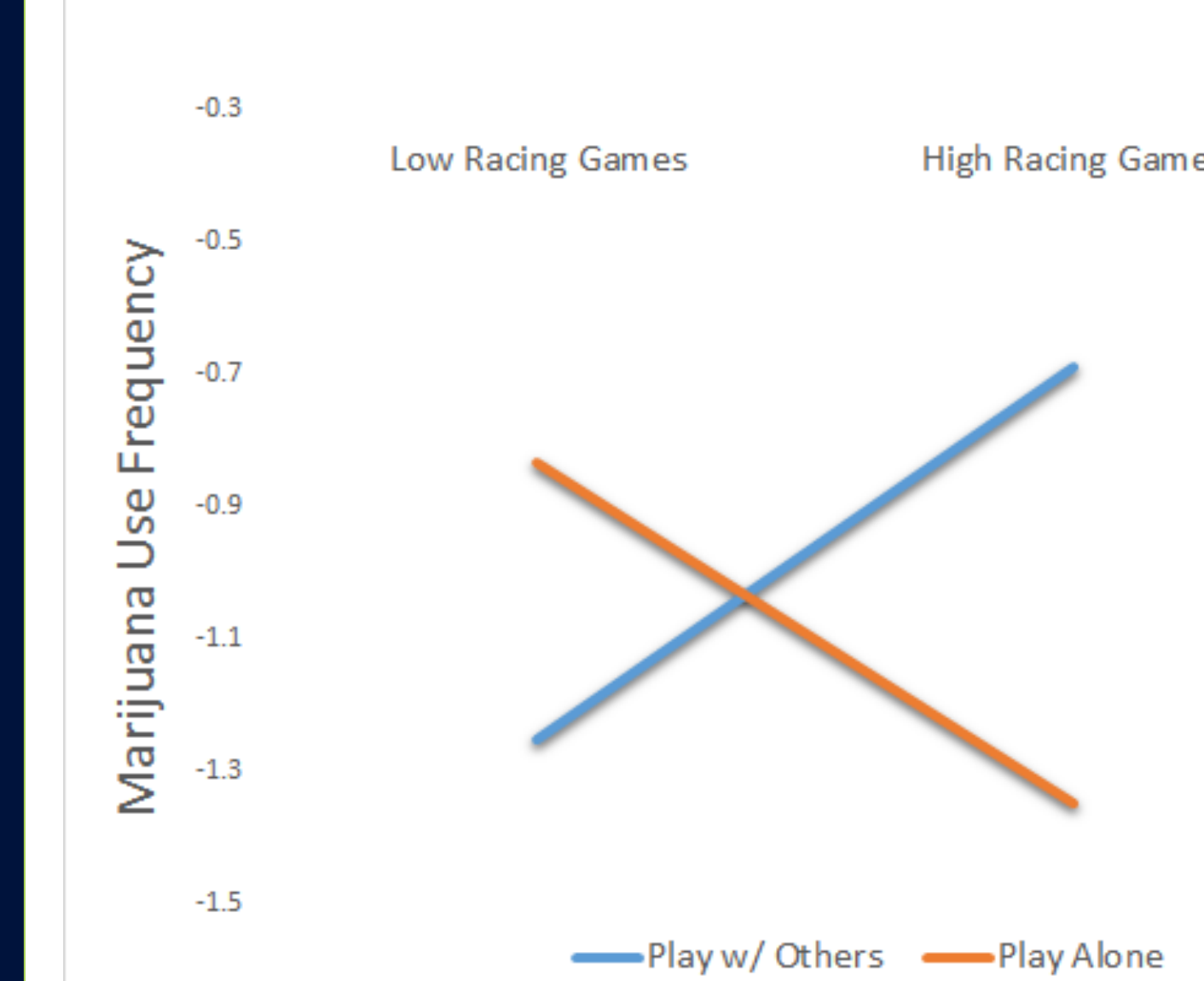


### Physical Games

The hierarchical regression is significant for the two-way interaction between playing alone and physical games,  $\beta = -0.309$ ,  $B = -1.149$ ,  $SE = 0.485$ ,  $p < .05$ , and for the three-way interaction between time spent playing, playing alone, and physical games,  $\beta = -0.317$ ,  $B = 0.304$ ,  $SE = 0.151$ ,  $p < .05$ .

## RESULTS

Figure 3. Racing Games and Marijuana Use



### Hierarchical Regression

- Step 1. Gender
- Step 2. Main effects for time spent playing, playing alone, and type of game
- Step 3. All two-way interactions
- Step 4. Three-way interaction

### Racing Games

There is a main effect for racing games, such that adolescents who reported playing video games also reported using marijuana more frequently,  $\beta = 0.205$ ,  $B = -0.565$ ,  $SE = 0.279$ ,  $p < .05$ . The two-way interaction between playing alone and racing games is significant,  $\beta = -0.333$ ,  $B = -1.083$ ,  $SE = 0.487$ ,  $p < .05$ .

## DISCUSSION

Adolescents who play more racing games with others typically report higher marijuana use than adolescents who play alone (Figure 4). In contrast, adolescents who report playing physical games tend to report a higher frequency of marijuana use when playing with others but not when playing alone (Figure 1). Lastly, increasing time spent playing video games is associated with higher marijuana use for adolescents who play physical games alone compared to adolescents who report increasing time spent playing video games that are not physical (Figure 2). In contrast, both playing physical games and not playing physical games are associated with lower marijuana use when adolescents are playing with other people (Figure 3).

- Adolescents who play video games with others may be more likely to use marijuana to enhance this leisure activity or under the influence of peer pressure.
- Future research should examine how violent or mature rated video games affect other risky behavior among adolescents such as alcohol use, other drug use, and cigarette smoking.