

# The Impact of Living in Co-ed Resident Halls on Risk-taking Among College Students

Brian J. Willoughby, PhD; Jason S. Carroll, PhD

**Abstract. Objective:** Although previous research has suggested that college housing impacts student behavior and outcomes, recent research linking college housing to risk-taking has been limited. In this study, we investigate if patterns of risk behavior differ based on the type of college housing environment students reside in. **Participants:** This study utilizes 510 college students living in on-campus college housing. **Methods:** Students were recruited from 5 college sites across the United States. Participants responded to survey items online that measured current risk-taking behaviors such as binge drinking and sexual activity. **Results:** After controlling for an assortment of demographic and psychological variables, results indicated that students living in co-ed housing were more likely than students living in gender-specific housing to binge drink and consume alcohol, have more permissive sexual attitudes, and have more recent sexual partners. **Conclusions:** On-campus housing environments impact college student risk behaviors. Implications are discussed in light of the decline of *in loco parentis* on most college campuses.

**Keywords:** behavioral risk factors, binge drinking, college, college health, drug use, resident halls, risk-taking, sexual activity.

For several years now, researchers have documented that the social environment at American colleges and universities is frequently characterized by informal hanging out rather than planned dating, sexual hook-ups with non-committed partners, and frequent experimentation with alcohol and other drugs.<sup>1,2</sup> Although it is often assumed that these behaviors have always been a part of the American college experience, recent studies show that there have been significant changes and increases in risk-taking behaviors, such as binge drinking and sexual activity, on today's college campuses compared to previous generations.<sup>3,4</sup> Although changing social norms are often cited as the explanation for recent increases in risk behaviors among college students,<sup>5</sup> very little attention has been devoted to changes in univer-

sity policies and practices that may be contributing to these patterns.

One of the most notable changes at many universities in the last half century has been the demise of *in loco parentis*, a policy through which colleges and universities assumed some of the responsibility for students that parents could no longer directly exercise.<sup>6</sup> As colleges and universities have accepted less responsibility for the personal and social instruction of students, once common policies related to housing, dress/grooming, substance use, and social interaction have begun to fade away, thus reorganizing the social environment of college campuses.

During the past 3 decades, one of the most widespread policy changes at American colleges and universities has been the restructuring of on-campus housing from gender-specific (ie, all-male or all-female) to co-educational or "co-ed" (mixed gender) living. Recently Willoughby and colleagues<sup>6</sup> found that over 90% of college housing in the United States is now co-ed in nature. Despite the rapid pace with which co-ed housing has overtaken gender-specific housing in the United States, little is known about what impact different types of college housing may have on young adult development and outcomes.

Although previous research suggests that college housing environments may impact student participation in certain risk-taking activities,<sup>7-9</sup> little research to date has investigated if levels of risk-taking behaviors vary between students living in co-ed versus gender-specific college housing. Furthermore, no study has looked at potential differences between students in co-ed or gender-specific housing regarding pro-social behaviors or other psychological dimensions of well-being, such as body image and depression. In one of the only studies to investigate co-ed housing and risk-taking, Wechsler and colleagues<sup>9</sup> found that living in a co-ed residence hall was a significant predictor of binge-drinking levels. A follow-up study revealed that students in co-ed residence halls also experienced more problem behaviors related to drinking than their counterparts in gender-specific

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Dr Willoughby and Dr Carroll are with the School of Family Life, Brigham Young University, Provo, Utah.  
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housing.<sup>10</sup> Although these studies lend credibility to a hypothesis suggesting that living within co-ed dorms may elevate risk-taking behaviors, more research is needed to see if these findings can be replicated and to extend this line of investigation to other risk behaviors beyond binge drinking.

The purpose of this study was to investigate if behavioral or attitudinal differences exist between students living in different college housing environments, particularly in the area of risk-taking. The central premise of the study presented here is that the inclusion of both males and females in the same living environment produces a different social context, with different perceived norms, social expectations, and behavior patterns than gender-specific housing arrangements. Due to the lack of research in this area, this study serves the exploratory purpose of attempting to understand what positive or negative outcomes might be associated with different types of college student housing. Quantitative analyses are presented to address the following research questions:

1. Is college housing type (co-ed or gender-specific) associated with differences in student risk-taking including alcohol use, drug use, and sexual behavior?
2. Is college housing type associated with differences in psychological outcomes such as pro-social behavior tendencies, depression, body image, extroversion, and impulsivity?
3. Can college housing type significantly contribute to the prediction of sexual behavior and binge drinking beyond common demographic variables?

## METHODS

### Participants

Data used for this study were gathered from Project R.E.A.D.Y., a multi-site research project dedicated to investigating multiple aspects of emerging adulthood development. The sample used in the current study consisted of 510 unmarried undergraduate students (353 women, 157 men) who lived in on-campus housing and were recruited from 5 college sites across the United States during the 2004–2005 academic year (a small, private liberal arts college and a medium-sized, religious university on the East coast; 2 large, Midwestern public universities; and a large, public university on the West Coast). The mean age of the sample was 19.24 years ( $SD = 1.17$ ) for women and 18.96 years ( $SD = 1.01$ ) for men (age ranged from 18 to 26). Eighty-seven percent of the participants were European American, 4% were African American, 4% were Asian American, 2% were Latino American, and 3% indicated that they were “mixed/biracial” or of another ethnicity.

### Procedure

Participants completed the Project R.E.A.D.Y., questionnaire via the Internet. Participants were recruited at each sampling site through faculty’s announcement of the study in undergraduate and graduate courses. Interested students then accessed the study Web site with a location-specific re-

cruitment code. Most participants were offered course credit or extra credit for their participation. In some cases (less than 5%), participants were offered small monetary compensation (ie, \$10 to \$20 gift certificates) for their participation. Permission to conduct this research was obtained by the proper Human Subjects Committee at each university site.

## Measures

### Type of Housing

College housing type was assessed with a single item that asked: “Where do you live now? That is, where do you stay most often?” Only respondents who indicated that they currently lived in on-campus college housing, specifically gender-specific dorms ( $n = 68$ ) or co-ed dorms ( $n = 442$ ), were included in this study. A variable that distinguished which housing type respondents lived in was created and used in all analyses.

### Substance Use

Participants’ *substance use* was assessed by measuring the frequency of 3 behaviors during the last 12 months. Alcohol consumption, binge drinking (ie, drinking 4 or 5 drinks or more in one occasion), and marijuana use were assessed using a 6-point scale (0 = none; 1 = once a month or less; 2 = 2 or 3 days a month; 3 = 1 or 2 days a week; 4 = 3 to 5 days a week; 5 = everyday or almost everyday).

### Sexual Attitudes and Behaviors

Participants’ *sexual permissiveness* was measured using a 3-item scale assessing how much participants agreed or disagreed with sexual value statements on a 6-point scale ranging from *very strongly disagree* (1) to *very strongly agree* (6). These statements related to personal sexual ethics regarding premarital sexual relations (“It is all right for a man and woman to have sexual relations before marriage”), uncommitted sexual relations (“It is all right for two people to get together for sex and not necessarily expect anything further”), and pornography use (“Viewing pornographic material, such as magazines, movies, and/or Internet sites, is an acceptable way to express one’s sexuality”). Preliminary analyses found that this scale had strong internal consistency (college men,  $\alpha = .86$ ; college women,  $\alpha = .81$ ). *Sexual behavior* was measured by asking how many sexual partners the participant had in the last 12 months. *Pornography use* was assessed with one item asking respondents how often they “view pornographic material (such as magazines, movies, and/or Internet sites).” Responses ranged from 0 (*none*) to 5 (*everyday or almost every day*).

### Personality Variables

*Body image* was assessed with a 4-item scale (“I wish my body was different,” “I am happy with my height and weight,” “I am not happy with the way I look,” and “I like my physical appearance the way it is”). All items were measured on a 4-point scale ranging from 1 (*not at all true for me*)

to 4 (*very true for me*). The scale had good internal reliability (college men,  $\alpha = .77$  college women,  $\alpha = .84$ ). A *depression* scale (college men,  $\alpha = .85$ ; college women,  $\alpha = .86$ ) was created from three items which asked participants to indicate how often phrases described them (“sad and blue,” “depressed,” and “feel hopeless”). Responses ranged from 0 (*never*) to 5 (*very often*). *Impulsivity* was assessed using 2 items measured on the same scale as depression (“easily irritated” or “mad and fight with others/lose temper”). *Extroversion* was measured on the same scale and was computed using a 3-item scale (college men,  $\alpha = .81$ ; college women,  $\alpha = .74$ ). The items were, “talkative,” “shy” (reversed coded), and “outgoing.”

*Prosocial behavioral tendencies.* Prosocial tendencies were assessed using the Prosocial Tendencies Measure (PTM), which has been used in the past with both adolescents and young adults, and has displayed adequate internal reliability and validity.<sup>11,12</sup> This 25-item measure had good internal consistency (college men,  $\alpha = .76$ ; college women,  $\alpha = .82$ ). Items on the scale measured tendencies toward prosocial behaviors such as “I tend to help people who are in real crisis or need.” Participants responded on a scale ranging from 1 (*does not describe me at all*) to 5 (*describes me greatly*). Higher scores on this measure indicated greater tendency toward prosocial behaviors.

### Demographic Variables

Several demographic variables were utilized as controls in most analyses. *Race* was assessed by one item asking participants, “How would you describe yourself?” *Parent’s marital status* was measured by one item asking participants, “What is your parent’s marital status?” Responses were recoded into 4 categories (married, separated, divorced, and widowed). *Dating status* was assessed by 1 item asking participants “What describes your current dating status?” Responses were recoded into 2 categories (0 = *not dating*; 1 = *dating*). *Religiosity* was measured with a 4-item scale addressing various aspects of religious practice and belief (college men,  $\alpha = .83$ ; college women,  $\alpha = .82$ ). Four items assessing the importance of faith and religious behavior (service attendance and prayer frequency) were all measured on a 4-point scale (1 = *strongly disagree* to 4 = *strongly agree*). These items were summed to create a religiosity score.

### Analysis Plan

The analyses of this study were conducted in 2 phases. First, differences between students residing in co-ed and gender-specific residence halls were assessed using 1-factor multivariate analyses of covariance (MANCOVAs) grouped by correlated variables. Preliminary analyses (not reported here) detected differences on several variables based on the location or site of data collection. Given that these findings indicated the possibility of a site-effect in our sample, university campus was also coded and included as a control in all analyses. Gender was originally run as a second factor in all MANCOVAs, but all results showed that the gender  $\times$

housing type interaction was not significant and the model was simplified by including gender as a control. Descriptive frequencies were also calculated to further investigate identified difference patterns based on housing type.

The first set of analyses controlled for demographic and personality variables and investigated if risk-taking behaviors and attitudes differed based on housing type. In order to see if housing type was associated with differences in personality characteristics, MANOVAs were next run testing for mean differences based on housing type on measures of impulsivity, extroversion, body image, depression, and pro-social behavior tendencies.

Next, in order to see if housing type could predict risk-taking beyond other common demographic variables, hierarchical multiple linear regression analysis techniques were utilized. For predicting both binge drinking and sexual partners in the last 12 months, 2 models were tested. The number of sexual partners in the last year was chosen because housing environment is more likely to impact recent sexual behavior. The first model included age, gender, level of education, parent’s marital status, dating status, employment status, religiosity, race, and university site, all factors commonly predictive of various forms of risk-taking. The next step of the analysis included housing type. Hierarchical multiple regression allows for an investigation of not only if housing type can significantly predict binge drinking and sexual partners in the last 12 months, but also if housing type can significantly add to the prediction of these outcomes after accounting for other demographic variables.

## RESULTS

Of the 510 students in our sample living in on-campus housing, 87% ( $n = 442$ ) lived in co-ed residence halls. Analyses were run to determine if there were demographic differences based on housing type. Results suggested that students living in co-ed housing ( $M = 19.4$  years) were older than students in gender-specific housing ( $M = 19.0$  years).

Analyses were next run to see if mean differences could be detected on risk-taking attitudes and behaviors between students living in co-ed and gender-specific housing. Multivariate results controlling for age, gender, religiosity, impulsivity, extroversion, and depression indicated that students significantly differed on risk-taking behaviors and attitudes based on housing type ( $F = 2.67, p < .001$ ). Univariate results using Bonferroni contrasts are summarized in Table 1. Results showed that students living in gender-specific housing were less likely to consume alcohol and engage in binge drinking than students living in co-ed housing. Students living in co-ed housing were also more likely to have more sexual partners in the last 12 months, use pornography more frequently, and have more permissive attitudes toward sexual activity than students living in gender-specific housing.

As mean differences were detected on risk-taking variables by housing type, frequency statistics were computed to better understand the magnitude and range of differences between students in co-ed and gender-specific housing. Nearly

**TABLE 1. Univariate Results Assessing Risk-taking Differences of Students Based on Housing Type**

Variable	Gender-specific (Mean)	Co-ed (Mean)	F
Binge drinking	1.15	1.81	6.41*
Alcohol consumption	1.54	2.33	13.03**
Marijuana use	.38	.55	.001
Pornography use	.92	1.01	3.85*
Recent sexual partners	.66	1.08	5.55*
Sexual permissiveness	3.16	3.61	6.97**

Note. \* $p < .05$ ; \*\* $p < .01$ .

two thirds (63.2%) of students in gender-specific housing indicated that they had no sexual partners in the last year, whereas less than half of (44.3%) of students in co-ed housing indicated zero sexual partners in the last year. Conversely, students in co-ed housing (12.6%) were more than twice as likely as students in gender-specific housing (4.9%) to indicate that they had had 3 or more sexual partners in the last year. These findings mirrored similar trends in sexual permissiveness where only 26.5% of students in gender-specific housing reported some degree of agreement with the item “it is alright for two people to get together for sex and not necessary expect anything further” compared to 44.1% of students in co-ed housing. Differences based on alcohol consumption were even larger. Students in co-ed halls were more than twice as likely as students living in gender-specific halls (56.4% versus 26.5%) to indicate that they consume alcohol at least weekly. Students in co-ed halls (41.5%) were nearly two and a half times more likely than students in gender-specific housing (17.6%) to report binge drinking on a weekly basis.

To further test for any possible selection effects in the results based on intrinsic personality qualities, analyses were next run to detect mean differences on psychological measures (including body image, depression, extroversion, and impulsivity) based on housing type. MANCOVA results controlling for gender, age, religiosity, and data source indicated that no significant mean differences were detected based on housing type ( $F = 1.71, p = .093$ ). No mean differences were detected on the measure of prosocial behavior tendencies based on housing type, controlling for the same factors ( $F = .017, p = .983$ ).

### Prediction of Risk-taking

Table 2 summarizes the standardized beta coefficients for the prediction of both binge drinking and number of recent sexual partners. Hierarchical multiple regression analyses predicting binge drinking indicated that dating status, religiosity, and university site were significant predictors of binge drinking in the first model (overall model significant;  $R^2 = .073, p < .001$ ). The second step of the model introduced the housing variable and results indicated that the

addition of this variable significantly increased the model’s prediction of binge drinking ( $R^2$  change = .041,  $p < .001$ ). Compared to students in gender-specific housing, living in co-ed housing was associated with significantly higher levels of binge drinking among students.

Regression analyses predicting sexual partners in the last 12 months produced similar results. The first step of the model was significant ( $R^2 = .094, p < .001$ ), largely due to the strong predictive power of age, dating status, and religiosity on the number of sexual partners in the last 12 months. Like binge drinking, type of housing significantly predicted recent sexual partners once it was added to the model and its addition significantly increased the model’s predictive power ( $R^2$  change = .017,  $p < .01$ ). Compared to students living in co-ed housing, living in a gender-specific residence hall was associated with fewer sexual partners in the last 12 months.

### COMMENT

Although the shift to co-ed dorms has given university housing offices the flexibility to meet students demands,<sup>6(p8)</sup> the results of this study suggest that this transition in college housing may merit greater scholarly scrutiny and investigation. Binge drinking, one of the leading health concerns on American college campuses, was found to be more prevalent among students living in co-ed residence halls than students living in gender-specific residence halls. This was true even after controlling for age, gender, religiosity, and personality factors. Students in co-ed housing were drinking at significantly higher levels than students in gender-specific housing. Specifically, this study found that that students living in co-ed dorms are approximately twice as likely to engage in binge drinking and frequent alcohol consumption as their peers in gender-specific housing. The fact that students in co-ed residence halls were found to have higher drinking rates suggests that social norms around drinking are likely higher in co-ed housing than in gender-specific housing.

Students in co-ed housing were also more likely to report more recent sexual partners and have more permissive sexual attitudes than their peers in gender-specific housing. All of these differences were found to be statistically significant, even after controlling for religiosity and several other sociodemographic variables. Also, living in a gender-specific

**TABLE 2. Standardized Beta Coefficients for Variables Predicting Binge Drinking and Number of Recent Sexual Partners**

Variables	Binge drinking		Number of recent sexual partners	
	Model 1	Model 2	Model 1	Model 2
Age	-.006	.013	.125**	.150**
Gender	.079	.071	-.007	-.007
Race				
(White)				
Black	-.034	-.035	.046	.042
Asian	-.119**	-.124**	-.109*	-.112**
Hispanic	-.023	-.020	.008	.007
Biracial	-.038	-.028	-.053	-.048
Other	-.049	-.050	-.073	-.074
Years of education	-.062	-.050	-.086	-.073
Parents' marital status				
(Married)				
Divorced	.012	.016	-.023	-.017
Separated	.027	.033	.063	.064
Never married	-.071	-.086*	.050	.045
Dating status	.110*	.111*	.146**	.148**
Source of data	.112*	.102*	.027	.011
Religiosity	-.202***	-.192***	-.230***	-.226***
Housing type				
(Co-ed)				
Gender-specific	—	-.194***	—	-.126**
Adjusted $R^2$	.073***	.112***	.094***	.108***
$R^2$ change		.041***		.017**

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

hall was predictive of fewer sexual partners compared to co-ed housing—strengthening the finding that students in co-ed housing engage in more sexual activity than students in gender-specific housing. Taken together, the findings of this study suggest that co-ed residence halls may create a social environment that contributes to students being more prone to endorse and engage in risk-taking behaviors.

Although the current study provides a descriptive account of several identified differences in risk-taking behaviors between students living in co-ed dorms and gender-specific dorms, a number of questions arise as to an explanation for these differences. In particular, the question arises: “Why would students in co-ed housing report higher rates of risk-taking than their peers in gender-specific housing?” The simplest explanation for these differences is selection. Students who are more prone to risk-taking may be more likely to request co-ed housing, whereas students who are less prone to risk-taking select into gender-specific housing. Although this explanation may play some role in explaining the association between college housing type and risk-taking, several features of this study suggest it does not play a large role. First, housing offices from several universities have reported that almost no students are currently requesting gender-specific housing.<sup>6(p9)</sup> Therefore, the majority of students living in gender-specific housing were placed there by university housing offices, not based on their personal re-

quest. Second, results from this study found that students in co-ed and gender-specific housing do not differ on measures of depression, impulsivity, extroversion, body image, or pro-social behavior tendencies. If students who are risk prone are selecting into co-ed housing, it would be likely that differences on these measures, particularly impulsivity and extroversion, would be detected. Furthermore, analyses reported here also controlled for gender, age, religiosity, data source, and race—all factors that could potentially impact a student’s housing decision and risk-taking propensity. Lastly, two of the universities sampled in this study did not offer gender-specific housing on their campuses. At these universities, students who would normally select into gender-specific housing did not have that option. If selection was indeed a notable factor in the differences identified between housing types, this would have had the effect of diluting any real differences that existed in this sample. This evidence suggests that although selection may play a role in some students’ housing and risk-taking decisions, it is likely not the primary factor behind the differences found in this study.

Without evidence of selection effects, serious consideration needs to be given to the possibility that co-ed housing and gender-specific housing create different social environments that vary in social norms, expectations, and behaviors. Although this hypothesis was not directly examined in this study, the fact that students in co-ed residence halls tended to

be more permissive about sexual behavior suggests that their housing environment may encourage and facilitate more sexual experimentation. Also, it is likely that co-ed housing has become synonymous in young adults' minds with the college experience. Perhaps, in a way that mirrors research on fraternities and sororities,<sup>13-16</sup> students in co-ed residence halls expect to be surrounded by more risk-taking and sexuality, which leads them to engage in behaviors they perceive as the norm.

Care should be taken to not generalize the results of this study to emerging adults outside of university settings, as college housing may create a unique environment that is more likely to affect behavior compared to the more diverse housing arrangements of emerging adults not attending college. We also note that a relatively small proportion of the sample (12.9%) was living in gender-specific housing. This smaller sample may exaggerate differences between co-ed and gender-specific housing and future research should seek to replicate the results found here in more robust, larger samples.

Future research using longitudinal designs that track students through the transition to on-campus college housing are needed to better determine if the pattern of differences detected in this study are due to selection effects or changes in students' behavior after they enter college. Although care was taken to eliminate a selection bias in the results of this study, some of the results found are likely attributed to a selection effect. As housing type may be associated with differing social normative expectations regarding risk-taking, future studies should investigate if students in co-ed residence halls hold different beliefs about normal risk-taking behavior compared to students living in gender-specific housing, as well as how these norms compare to students living off-campus apartments with same-gender or opposite gender roommates.

Research has shown that heavy drinking among college students is associated with numerous negative outcomes such as missing classes, poor relationships with romantic partners, and more susceptibility to illness<sup>8</sup> and it is important for scholars and policy makers to understand the elements, both psychological and structural, that influence student risk taking such as binge drinking. Researchers should continue to investigate how housing environments impact young adult behavior in order to develop appropriate preventative programs and policies that encourage healthy behaviors during this pivotal period in life.

## NOTE

For comments and further information, address correspondence to Brian Willoughby, JFSB 2081, School of Family Life, Brigham Young University, Provo, UT 84602, USA (e-mail: brian.willoughby@byu.edu).

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