Analysis of UW-River Falls’ 2015 National Collegiate Health Assessment Data

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Executive Summary

This report summarizes the results of the National Collegiate Health Assessment (NCHA) survey that was administered on the UW-River Falls campus in 2015. The report will:

- Summarize selected portions of the 2015 results
- Identify any statistically significant changes since the same survey was administered in 2009
- Determine if a given variable is correlated with student academic performance as measured by grade point average (GPA).

Description of the Sample. The 660 students who completed the 2015 NCHA survey were:

- Predominantly female (73%).
- About half were under 21 and half older than that.
- Fairly evenly distributed from freshmen to seniors.
- Overwhelmingly white (92%) and single (92%).
- Most were full-time students (95%).
- Slightly more than one in five were transfer students (22%).
- Relatively few were international students (7%) or members of Greek life (5%).
- Intercollegiate and club athletes comprised 11% of the respondents and more than twice that proportion (26%) reported participating in intramurals.
- Similar proportions said they were not in a relationship (47%) as were in a relationship but not living together (40%); 11% were cohabitating.
- Most said they are heterosexual (90%).
- A minority (3%) would be classified as underweight based on their Body Mass Index, about half (54%) in the normal range, and more than 40% as overweight (24%) or obese (19%).
- Only one-third said they don’t typically work for pay; two-thirds don’t typically volunteer.
- Slightly more than one-half have lived on campus (54%) and nearly one-third off-campus (30%).
- Most (80%) get their health insurance through their parents.

Other than somewhat more females than would be expected, the profile of respondents seems to reflect the overall student body fairly well (Table 1).

Methods. The SRC tested for significant changes between 2009 and 2015 using the standard T-Test and reported differences that were significant at the 5% or better level. Statistical significance at the .05 level indicates there is only a 5 in 100 probability that the estimated difference in average values between two groups is not real.

To test for a relationship between a given behavior or condition and GPA, the SRC used Pearson’s correlation coefficient. Again correlations that are significant at the 5% or better level
are reported. Significance in this context means there is only a 5% chance that the variable and GPA don’t tend to change in systematically positive or negative ways together.

GPA of Respondents. Figure 1 suggests that the students who responded to the survey generally have relatively high GPAs. The average GPA for 2015 was a robust 3.27 and more than 80% had a B average or better.

General Student Health and GPA. In 2015, only 45% of UWRF students rated their health as very good (35%) or excellent (10%), which was significantly less than in 2009 (Figure 2). Since ill-health may cause students to miss class, reduce their study time and/or hinder their concentration, it is probably not surprising that there is a strong correlation between general health and GPA – the better their health, the higher their GPA (Figure 2a).

Physical Traumas and GPA. The more traumas, such as an assault, non-consensual sex, being threatened and so on (Figure 3), a student has experienced in the past 12 months, the lower their average grade (Figure 3a).

Abusive Relationships and GPA. Ten percent of UWRF students said they had been in a relationship that was emotionally, sexually, or physically abusive in the past 12-months (Figure 4). Though not statistically significant there were slightly higher proportions of students in 2015 who reported being in an abusive relationship than in 2009. There is a highly significant negative relationship between the number of abusive relationships experienced and average GPA (Figure 4a).

Tobacco, Alcohol, and Drug Use and GPA. Fewer than 10% of UWRF students reported using tobacco in any form in the 30 days preceding the NCHA survey (Figure 5). Tobacco use is down significantly from 2009 levels. There is a clear, negative relationship between tobacco use and average GPA. The negative correlation is highly, statistically significant (Figure 5a).

Only about 38% of UWRF’s NCHA respondents either don’t drink at all (21%) or hadn’t consumed alcohol in the previous 30 days (Figure 6). Alcohol consumption may have been less in 2015 than in 2009 (significant only at the 10% level). Frequency of alcohol consumption did not, surprisingly, have a statistically significant relationship with GPA (Figure 6a).

Marijuana use at UWRF, as reported by this set of respondents is relatively uncommon (Figure 7). Though not pronounced, the negative correlation between smoking marijuana and GPA is statistically significant (Figure 7a).

Very few 2015 NCHA respondents said they had ever used illegal drugs or had not used them in the past 30 days (Figure 8).

A relatively high proportion of UWRF students have used e-cigarettes in the past year (17%) (Figure 9). The negative relationship between e-cigarette use and GPA is highly statistically significant (Figure 9a).
**Additional Alcohol Consumption Factors.** Slightly more than 20% reported drinking at least 6 alcoholic beverages at their last party and more than 10% spent at least 6 hours drinking (Figure 10). Compared to 2009, the number of drinks consumed at the last party is down significantly. There is a significant negative correlation between the number of alcoholic drinks consumed at the last party and the student’s GPA (Figure 10a).

Nearly three-quarters of UWRF students said they had no instances during the prior 2 weeks when they consumed five or more drinks at a sitting (Figure 11). Though not quite statistically significant at the 5% level, the incidence of binge drinking appears to have diminished since 2009. The negative correlation between the number of binge drinking episodes and GPA is highly statistically significant (Figure 11a).

**Adverse Partying Outcomes.** Substantial proportions of UWRF students said they had experienced times when they forgot where they were or what they had been doing (23%), later regretted things they had done (22%), and had unprotected sex (16%) (Figure 12). There is a statistically significant decline in GPA among students having later regrets and forgetting where they were or what they had done at a party (Figure 12a).

**Prescription Medicine Abuse.** Prescription drug abuse is relatively uncommon at UW-River Falls; no more than 5% of UWRF students admitted using a drug without a prescription (Figure 13).

**Sexual Activity and Academic Performance.** In 2015, more than 90% of students said they had no (32%) or one (63%) sexual partner over the previous 12-months (Figure 14). The correlation between GPA and number of sexual partners is significant and negative (Figure 14a).

**Weight and Exercise.** More than half (54%) of UWRF students said they were trying to lose weight (Figure 15). If a student is not trying to change their weight, they tend to have a higher GPA on average (Figure 15a).

About three-quarters of students said they engaged in moderate exercise at least once a week, but only one-quarter do so five or more times a week (Figure 16). Significantly more students were lifting weights and other means of strength training in 2015 than in 2009. The more students engage in vigorous physical activity, the higher their GPA is expected to be (Figure 16a).

**Mental Health.** Roughly two-thirds of UWRF’s students said they had felt exhausted or overwhelmed in the past month (Figure 17). Compared to 2009, the only significant change is with respect to anxiety, which is up substantially in 2015. The SRC found no statistically significant relationships between the mental traumas listed in Figure 17 and students’ GPAs.

Nearly 20% reported having been diagnosed with anxiety or depression and between 5% and 10% have been diagnosed with ADHD or panic attacks (Figure 18). The proportions of students who reported being diagnosed with anxiety, depression and panic attacks are significantly higher than in 2009 and nearly so for ADHD. There are only two mental health issues for which there were a significant differences in GPA; students diagnosed with ADHD or depression had significantly lower GPAs than students not so afflicted (Table 2).
Many UWRF students reported facing hard to handle academic challenges (42%), financial challenges (36%), problems with intimate partners (31%), and sleep problems (30%) (Figure 19). Since 2009, significantly higher proportions of UWRF students are experiencing challenges with respect to the health of family members or a partner, personal health issues, and sleep difficulties. If a student said they’d had difficulty handling academics, the death of a friend or family member, problems with significant others or friends, financial problems, concerns about their personal appearance or health, or sleep disturbances, their GPAs suffered (Table 3).

**Overall Stress Levels.** Half the students said they’d experienced more than average (41%) or a tremendous amount of stress (9%) (Figure 20). There is a significant negative relationship between GPA and stress levels (Figure 20a).

**Sleep Habits.** There is a wide variation of sleep patterns among UWRF students. Fifty-five percent said they had enough sleep to awaken refreshed on 3 or fewer days per week (Figure 21). The correlation between days of adequate sleep and GPA is positive and highly statistically significant (Figure 21a).

When asked how big a problem it was to feel sleepy during the day, 60% of UWRF students said it was not a problem or only a little problem (Figure 22). Feeling sleepy during the day correlates very significantly with declining academic performance (Figure 22a).

About three-quarters of the students have relatively few days when they wake up too early, can’t fall asleep, or go to bed because they can’t stay awake any longer (Figure 23). More than half said they were sleepy during the day, three or more days in the preceding week. Compared to 2009, more students in 2015 noted a problem with waking up earlier than desired and being unable to get back to sleep. All of these sleep disturbances except waking too early are significantly and negatively correlated with academic performance (Figure 23a).

**Electronic Devices.** A majority of UWRF students spend at least three hours per day using an electronic devise for leisure (Figure 24). There is a highly significant negative correlation between time spent on electronic devices for leisure and average GPA (Figure 24a).

**Stressors and Academic Performance.** Roughly one-third of the respondents said their academics suffered as a result of stress and about one-quarter felt sleep problems or anxiety did so (Figure 25). The self-assessed negative impacts of alcohol were lower in 2015 than in 2009, as were the impacts of colds/flu, drug use and gambling. On the other hand, anxiety and depression seem to be bigger issues in 2015 than in 2009.

Alcohol use, anxiety, sexual assault, having ADHD, coming down with a cold or the flu, having a chronic illness, experiencing the death of a friend or family member, depression, drug use, financial worries, gambling addictions, computer game use, having a learning disability, having roommate difficulties, having an infection (e.g. inner ear, bronchitis, etc.), having sleep difficulties, stress, and work issues were all negatively correlated with GPA.
Habits and Conditions. The SRC created an index of habits that tend to produce lower GPAs (e.g. use of tobacco, alcohol, drugs, lack of sleep, heavy computer devise use, etc.) and one for conditions that also tend to reduce GPA (poor general health, mental illness diagnoses, abusive relationships, etc.). Using a linear regression model, we found that these indexes were highly significant and negatively related to GPA. For each habit a student has that is associated with weaker academic performance, their GPA is expected to fall 0.029 points. For each condition afflicting a student that we found to be associated with weaker academic performance, their GPA is expected to fall 0.014 points.
In 2009, the SRC analyzed the data for UW-River Falls from the National Collegiate Health Assessment survey to see what relationships might exist between certain student behaviors or experiences and their performance as measured by their grade point average (GPA). In the spring of 2015, the same survey was administered to students at UW-River Falls. In this report the SRC will look at changes in student experiences and behaviors since 2009 and at the relationship, if any, they have to students’ GPA in 2015. The SRC understands that the student’s GPA was pulled from the University’s records and was not as reported by the students themselves.

**Purpose of the Survey**

Periodically, UW-River Falls surveys its students to gauge the prevalence of certain behaviors and experiences that could be expected to affect their experiences and academic performance at UW-River Falls. In 2015, 660 students were included in the UWRF survey sample.

**Description of Sample**

Table 1 on the next page provides a snapshot of the students who responded to the 2015 NCHA survey. They were:

- Predominantly female (73%).
- About half were under 21 and half older than that.
- Fairly evenly distributed from freshmen to seniors.
- Overwhelmingly white (92%) and single (92%).
- Most were full-time students (95%).
- Slightly more than one in five were transfer students (22%).
- Relatively few were international students (7%) or members of Greek life (5%).
- Intercollegiate and club athletes comprised 11% of the respondents and more than twice that proportion (26%) reported participating in intramurals.
- Similar proportions said they were not in a relationship (47%) as were in a relationship but not living together (40%); 11% were cohabitating.
- Most said they are heterosexual (90%).
- A minority (3%) would be classified as underweight based on their Body Mass Index, about half (54%) in the normal range, and more than 40% as overweight (24%) or obese (19%).
- Only one-third said they don’t typically work for pay; two-thirds don’t typically volunteer.
- Slightly more than have lived on campus (54%) and nearly one-third off-campus (30%).
- Most (80%) get their health insurance through their parents.

Other than somewhat more females than would be expected, the profile of respondents seems to reflect the overall student body fairly well.
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Analytical Approach

The typical pattern in the sections to follow will be to summarize the behavior or experiences of UWRF students based on the 2015 NCHA survey, compare the 2015 results to the 2009 results, and determine what relationship, if any, exists between that behavior or experience and the student’s grade point average.

The SRC used a chi-squared or T-Test to test for statistical differences in the 2009 and 2015 surveys. A T-Test result is called statistically significant if it is unlikely to have occurred by chance. Statistical significance is expressed as a probability that the difference between average values for the groups is not real. A commonly used probability standard is .05 (5%). Statistical significance at the .05 level indicates there is only a 5 in 100 probability that the estimated difference in average values between two groups is not real. It does not mean the difference is necessarily large, important, or significant in the common meaning of the word. If there are a sufficiently large number of observations, even small differences in average values can be statistically significant. Response patterns that vary at statistically significant levels (p < .05) will be noted in the report. If the significance level is less than .01, we will say it is highly significant.

When looking at the relationship between a given experience or behavior and GPA, the SRC has used the Pearson’s Correlation Co-efficient to determine if there is a correlation between the experience or behavior on the one hand and GPA on the other. Correlation tests to see if two variables tend to change in non-random ways. For example, if one variable (e.g. the number of traumatic experiences a student has experienced in the previous year) is high and the other variable (GPA) tends to have a low value and vice versa (few traumatic incident and high GPA), we say they are negatively correlated. We, again, use (p<.05) as a threshold for saying the two variables are correlated. For instances when p<.01, we will say the correlation is highly statistically significant.
GPA of Respondents

As noted, the primary focus of this analysis of the NCHA data is to gauge the impact of various student behaviors or circumstances on their academic performance as measured by the grade point average (GPA). Figure 1 suggests that the students who responded to the survey generally have relatively high GPAs. The average GPA for 2015 was a robust 3.27 and more than 80% had a B average or better. In 2009, the average GPA of respondents was 3.19. The difference in GPA between 2009 and 2015 is not statistically significant.

![Figure 1: GPA of 2015 UWRF Respondents to the NCHA Survey](image)
General Student Health and GPA

Figure 2 indicates that fewer than half the 2015 NCHA respondents said their general health was very good or excellent. Given the age of this population, this is a somewhat surprisingly low proportion. The average self-reported general health assessment in 2015 was significantly lower than in 2009.

Figure 2a indicates that students who rated their health less good tended to have lower GPAs. This correlation is significant at a very high level. In 2009, a similar, statistically significant relationship was also observed. Since ill-health may cause students to miss class, reduce their study time and/or hinder their concentration, this result is not surprising.
**Experienced Traumas**

Students were asked if during the past twelve months they had been in a physical fight, been assaulted, verbally threatened, sexually touched without their consent, experienced an attempt to penetrate them sexually without consent, experienced sexual penetration without consent, or stalked.

Figure 4 shows the proportion of the 660 students in the NCHA survey sample who said they had experienced each of these traumas. With the exception of being verbally threatened (19%), fewer than 10% of UWRF respondents said they’d experienced these traumas. There were no significant differences between 2009 and 2015 in the incidence of any of these events.

Because these traumas are relatively rare and might be expected to have a cumulative impact, the SRC created an index of the total number of these traumas experienced by each respondents. Thankfully, a large majority (78%) had experienced none of the traumas listed in Figure 3 and another 12% had experienced only one of them. At the other end of the spectrum, 10 respondents said they’d experienced 4 or more of these traumatic events. Figure 3a highlights a negative relationship between the number of traumas experienced and the average GPA of students. The negative correlation between the number of traumas and GPA is highly statistically significant.
Abusive Relationships

Respondents were asked if, during the past twelve months, they have been in an intimate relationship that was emotionally, physically or sexually abusive. Based on these results, emotionally abusive relationships are not that uncommon at UWRF, with 10% of the 2015 NCHA respondents saying they have experienced this in the past 12 months. Physically and sexually abusive relationships appear to be much less common at UWRF. While not statistically significant, the percentages for all three of these abusive relationship types were slightly higher in 2015 than in 2009.

The SRC again created an index for abusive relationships. Most respondents (88%) said they had not been in a relationship that was abusive physically, sexually, or emotionally. But, 46 had experienced a relationship that was abusive in at least one of these ways, another 20 had experienced a relationship abusive in two ways and 5 had experienced all three. There is a negative relationship between the number of abusive relationships experienced and average GPA. Pretty clearly, the number of observations for those who’ve had two or three abusive relationships is not large, meaning that these results may not be robust. However, the negative correlation between GPA and number of abusive relationships is highly significant.
Tobacco, Alcohol and Drug Use

Students were asked about their use of the following during the preceding 30 days: cigarettes, tobacco from a water pipe, cigars, smokeless tobacco, alcohol, marijuana, cocaine, methamphetamines, other amphetamines, sedatives, hallucinogens, steroids, opiates, inhalants, ecstasy, club drugs or any other illegal drugs. Answer options were: never used, used but not in past 30 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, and used daily. The SRC estimated the number of days a student used one of these substance during the previous month by taking the mid-point of each range (e.g. 1.5 days for the 1-2 days option). Further, we grouped these four types of drugs: tobacco, alcohol, marijuana and other illegal drugs.

Tobacco Use

Figure 5 indicates that 10% or fewer of UWRF students reported using tobacco in any form in the 30 days preceding the NCHA survey. In Figure 5, the SRC grouped those who said they’ve never used tobacco with those who have used tobacco in the past, but not in the previous month. For cigarettes, cigars, and hookah’s about 76% had never used these forms of tobacco. For smokeless tobacco, 87% said they’d never used this product. The good news is that use of cigarettes and cigars are down significantly from 2009 levels. Being a smoke-free campus may be contributing to this positive outcome.

In Figure 5a, the SRC cumulated the days a student said they used any of the four types of tobacco products during the previous 30 days using the mid-point of the answer ranges, as described above. We then compared the GPA for students who reported zero use, those using tobacco 1-7 days during the previous month, those using tobacco 8-29 days and those using it daily (30+ days are possible if a student reported regular use of multiple tobacco sources). There is a clear, negative relationship between tobacco use and average GPA. The negative correlation is highly, statistically significant.
Alcohol Use

Thirty-eight percent of NCHA respondents either don’t drink at all (21%) or hadn’t consumed alcohol in the previous 30 days. Another 38% appear to drink about once a week (17%) or less (21%). The remaining nearly one-quarter of respondents use alcohol more than once a week. Alcohol consumption may have been less in 2015 than in 2009 (significant only at the 10% level).

Figure 6a suggests that the impact of alcohol consumption on academic performance is less clear than for some of the other behaviors/experiences discussed thus far. While it appears that those with the heaviest level of alcohol consumption have much lower GPAs, there are too few respondents in these categories to produce statistical significance: only 18 of the 660 respondents said they consume alcohol 20 or more days out of 30.
Marijuana Use

Marijuana use at UWRF, as reported by this set of respondents is relatively uncommon. Figure 7 indicates that 90% of the respondents either have never smoked marijuana (73%) or not done so in the prior 30 days (17%). Only 29 students reported smoking marijuana, six or more times in the preceding 30 days. Average use of marijuana was slightly less in 2015 than in 2009, but the difference was not significant.

Figure 7a shows a slightly downward relationship between frequency of use of marijuana and average GPA. Though this negative relationship is not pronounced, the correlation is statistically significant.
**Other Illegal Drugs**

As noted at the start of this section, students were asked about their use of a fairly long list of illegal drugs (cocaine, opiates, hallucinogens, etc.). Figure 8 indicates that very few 2015 NCHA respondents said they had used illegal drugs ever or in the past 30 days; at least 96% of respondents said they had never used any of these drugs.

Though insignificant, the average use of the drugs in Figure 8 were all the same (inhalants, anabolic steroids, club drugs) or lower than in 2009.

![Figure 8: Days Using Illegal Drugs During the Past 30 Days, Percent UWRF Students, 2015](image)

There is insufficient variation in use of these drugs to test for their impact on average GPA.
**E-Cigarettes**

The 2015 survey added a question about students’ use of e-cigarettes/vaping in the past 12-months with answer options of never used e-cigarettes, used e-cigarette nicotine, used e-cigarette THC, used e-cigarette nicotine and THC. A relatively high proportion of UWRF students have used e-cigarettes in the past year (17%). Recall from Figure 5 that only 10% or fewer students said they’d used tobacco products in the past month.

The negative relationship between e-cigarette use and GPA is highly statistically significant. There are few observations for students who are vaping THC, either exclusively or in combination with nicotine. Though not conclusive, these data suggest that it doesn’t matter what is being vapéd in terms of the negative impact on academic performance.
Additional Alcohol Consumption Factors

Because alcohol is the most available and frequently used drug on college campuses, including UWRF, the NCHA asked a number of additional questions about alcohol consumption. This section of the report will summarize those factors and their impact on students’ grade point average.

Number of Drinks and Hours at Last Party

Students were asked to indicate the number of alcoholic drinks they consumed the last time they “partied/socialized” and over how many hours they drank at that event. Figure 10 shows that just shy of one-third of the respondents said they did not drink alcohol at the last party they attended and spent no hours consuming alcohol. Slightly more than 20% reported drinking at least 6 alcoholic beverages at their last party and more than 10% spent at least 6 hours drinking. Compared to 2009, the number of drinks consumed at the last party is down significantly. The time spent drinking also appears to be somewhat lower in 2015 than in 2009, but the difference is not significant.

There is a significant negative correlation between the number of alcoholic drinks consumed at the last party and the student’s GPA. The relationship between the number of hours drinking alcohol at the most recent party and the student’s GPA is also negative, but is not statistically significant.
Binge Drinking

The U.S. Center for Disease Control defines binge drinking for men as 5 or more drinks in a two hour period and for women 4 drinks in a two hour period. In the NCHA survey, students were asked to indicate the number of times in the previous 2-week period they had consumed five or more alcoholic beverages at a sitting. Answer options included: not applicable/don’t drink and 0 through 10 or more.

No UWRF student reported more than 8 such episodes and relatively few reported more than two. As Figure 11 indicates, nearly three-quarters of UWRF students said they had no instances when they consumed five or more drinks at a sitting. Though not quite statistically significant at the 5% level, the incidence of binge drinking appears to have diminished since 2009.

Figure 11a shows the now-familiar negative relationship between GPA and an adverse behavior. The negative correlation between the number of binge drinking episodes and GPA is highly statistically significant.
Adverse Partying Outcomes

Students were asked if, during the past 12-months, any of the following had happened to them as a result of partying: they did something they later regretted, forgot where they were or what they did, got in trouble with the police, had sex with someone without their consent, had sex with someone without getting their consent, had unprotected sex, physically injured themselves, physically insured someone else, or seriously considered suicide. Answer options included: NA/Don’t Drink, No, and Yes.

Figure 12 indicates that substantial proportions of UWRF students said they had experienced times when they forgot where they were or what they had been doing (23%), later regretted things they had done (22%), and had unprotected sex (16%). Given that forgetting where they were or what they were doing was the most prevalent adverse outcome, it is possible that some of the other outcomes may be somewhat more common than reported. For instance, the student might not remember having had sex without consent. There have been no significant changes in the proportion of students who experienced these adverse partying outcomes between 2009 and 2015.

Only three of the adverse outcomes listed in Figure 12 had sufficient variation to test for impacts on GPA. Because there are three outcomes, Figure 12a uses a different sort of graph. The decline in GPA with respect to having later regrets and forgetting where they were or what they had done are statistically significant. The decline with respect to unprotected sex is not significant. It is probably no surprise that these
three items are highly and positively correlated with each other. For example, the later regrets may have been caused by having a blackout experience or an unprotected sexual encounter.

**Prescription Medicine Abuse**

Students were asked if they had taken any of the following medications that had not been prescribed for them: antidepressants (e.g. Prozac, Wellbutrin, etc.), erectile dysfunction drugs (e.g. Viagra, Cialis, etc.), pain killers (OxyContin, Vicodin, etc.), sedatives (e.g. Xanax or Valium), or stimulants (e.g. Adderall or Ritalin).

![Figure 13: Use of Non-Prescribed Prescription Drugs, UWRF, 2015](image)

Figure 13 suggests that prescription drug abuse is relatively uncommon at UW-River Falls. At most, 5% of UWRF students admitted using a drug without a prescription. Even though pain killers were the most-commonly abused prescription drug, the frequency of abusing these drugs has declined significantly compared to 2009.

There is insufficient variation in prescription drug abuse to provide reliable estimates of their impact on GPA.
Sexual Activity and Academic Performance

In 2015, more than 90% of students said they had no (32%) or one (63%) sexual partner over the previous 12-months. Though not quite statistically significant at the 5% level, the data suggest a slight increase in the number of sexual partners the average UWRF student had in 2015 compared to 2009.

There were a relatively small number of UWRF students who said they’d had 2 or more sexual partners in the previous 12 months (30 students out of 660). Nevertheless, Figure 14a does indicate that there is a negative relationship between the number of sexual partners and average GPA. The correlation between GPA and number of sexual partners is significant and negative. The only type of sexual activity that had a significant correlation with GPA was sex with a female during the prior 12-months. Since most of those having sex with a female were male and since males tend to have lower GPAs than women, this correlation is not surprising.
Weight and Exercise

Students were asked how they would describe their weight with options of: very underweight, slightly underweight, about the right weight, slightly overweight and very overweight. In 2015, only nine percent said they were underweight to any degree, half said they were at about the right weight and 40% said they were slightly (34%) or very (6%) overweight. The pattern in 2009 was very similar.

Even though only a bit more than 40% of 2015 respondents said they were at least slightly overweight, more than half (54%) said they were trying to lose weight (Figure 15). It isn’t uncommon for people to be less than forthcoming about their weight, which may explain the difference between the self-assessment of their weight and their desire to shed pounds. Though not significant, more 2015 respondents said they are very overweight (6%) than was the case in 2009 (4%).

Figure 15a suggests that if a student is not trying to change their weight, they will have a higher GPA on average. Perhaps the stress of an adverse body image puts additional stress on students, resulting in poorer classroom performance. The negative correlation between GPA and desired weight change shown in Figure 15a is significant.
Students were asked how many days each week they engaged in moderate exercise for 30 minutes (e.g. a brisk walk), vigorous exercise for 20 minutes (e.g. jogging), and 8-10 strength training exercises with at least 8 repetitions. Their responses are summarized in Figure 16. About three-quarters of students said they engaged in moderate exercise at least once a week, but only one-quarter do so five or more times in a week. Slightly less than 60% said they engage in at least 20 minutes of vigorous exercise at least once a week and fewer than 10% do so 5 or more times per week. Fewer than half participated in strength training at least once a week. Since 2009, the only significant change is with respect to strength training; more students were lifting weights and other means of strength training in 2015 than in 2009.

Figure 16a shows the relationship between GPA and the number of days in which the respondent reported engaging in vigorous activity. The positive slope is significant, indicating that the more students engage in vigorous physical activity, the higher their GPA is expected to be. There were no statistically significant relationships between moderate exercise or strength training and GPA.
Mental Health

Mental Traumas

Students were asked if they had experienced any of the mental traumas listed in Figure 17. Answer options were: never, not in past 12 months, yes in last two weeks, yes in last 30 days, or yes in last 12 months. For ease of exposition, the SRC combined the never and not in past year respondents into “no/not recently.” We also combined the yes in last 30 days and in last 2 weeks into “recently.” Figure 17 indicates that few UWRF students have recently attempted suicide, intentionally injured themselves or considered suicide. About one-quarter or fewer have felt hopeless, anger or depressed in the month prior to this survey. Between one-third and one-half have experienced anxiety, loneliness or sadness within a month of this survey. Roughly two-thirds said they had felt exhausted or overwhelmed in the past month. Compared to 2009, the only significant change is with respect to anxiety, which is up substantially in 2015.

The SRC found no statistically significant relationship between any of the mental traumas listed in Figure 17 and students’ GPAs. We also created categories for the items listed in Figure 17 where, if a student had experienced the mental trauma in the past year, they received a 1, otherwise they were assigned a zero. From this we created an index ranging from 0 (none of these mental traumas experienced) to 11 (experienced all of these situations). We hypothesized that the more of these mental traumas a student reported the lower their grade was likely to be. The SRC found no statistical relationship between this index of mental traumas and GPA. Because we found no statistically significant relationships, the SRC did not include a graph or table of our findings.
Students were asked if they had been diagnosed with any of the mental health concerns listed in Figure 18. Answer options were: no, yes but not treated, yes and treated with medications, yes and treated with psychotherapy, yes and treated with both medications and therapy, and yes, other treatment. In Figure 18, the SRC grouped all yes answers into a single category. The portion in red, to the right in the graph are the percentage of students diagnosed with a given condition. Nearly 20% reported having been diagnosed with anxiety or depression and between 5% and 10% have been diagnosed with ADHD or panic attacks. The proportions of students who reported being diagnosed with anxiety, depression and panic attacks are significantly higher than in 2009 and nearly so for ADHD.

Table 2 compiles the number of students who reported being diagnosed with each mental health issue, the GPA of students with the disorder and the GPA of students who had not experienced the disorder. There are only two mental health issues for which there were a significant differences in GPA; students diagnosed with ADHD or depression had significantly lower GPAs than students not so afflicted. For many of the mental health diagnoses, there were too few instances to be tested meaningfully. Though they have no statistical significance, it is interesting to note that those who said they’d been diagnosed with a sleep disorder or OCD actually had higher average GPAs than students who had not been so diagnosed.
The SRC also tallied the number of the mental health diagnoses each student had and compared that to GPA. We found no correlation between the number of mental health issues a student reported and their GPA.

Finally, a follow-up question in the NCHA asked if the student had ever been diagnosed with depression. Of the 640 students who answered this question, 153 said they had been diagnosed with depression. While the average GPA of those who had received a diagnosis of depression were lower (3.20) than those who’d never been so diagnosed (3.29), the difference was not quite significant ($p = .066$).

The results of this section suggest that depression that is current or in a student’s recent experience, has a deleterious impact on GPA, but that, once recovered, academic performance also rebounds.
**Hard to Handle Recent Experiences**

Students were asked if, during the prior 12-months, they had experienced difficulty handling academics, career-related issues, death of a family member or friend, family problems, intimate relationship problems, problems with friends, financial challenges, health concerns involving family or a partner, personal appearance concerns, personal health issues, or sleep issues. Nearly one-in-five of our students reported experiencing the death of a friend or family member over the past year. The proportion of students experiencing the challenges included in Figure 19 ranged from this low of 18%, to more than twice that who reported that academic challenges had been traumatic or difficult for them to handle (42%). Other challenges afflicting relatively high proportions of UWRF students include financial challenges (36%), problems with intimate partners (31%), and sleep problems (30%). Since 2009, significantly higher proportions of UWRF students are experiencing challenges with respect to the health of family members or a partner, personal health issues, and sleep difficulties.

As Table 3 indicates, there is a strong negative correlation between most of the experiences listed, and GPA. If a student said they’d had difficulty handling academics, the death of a friend or family member, problems with significant others or friends, financial problems, concerns about their personal appearance or health, or sleep disturbances, their GPAs suffered. Interestingly, all of the issues in Table 3 except the death of a family member or friend were highly and positively correlated with being diagnosed with depression.

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<th>Table 3: Relationship Between Difficulty and GPA, UWRF, 2015</th>
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<td>Academics</td>
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<td>Personal Health</td>
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<td>Sleep</td>
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**Overall Stress Levels**

When asked to rate their overall stress levels over the previous twelve months, half the students said they’d experienced more than average (41%) or a tremendous amount of stress (9%). Only 9% said they’d experienced less than average levels of stress over that time. Though the mean level of stress in 2015 is slightly higher than in 2009, the difference is not significant.

Figure 19a shows the relationship between the level of stress reported by students and their average GPA. The negative relationship between GPA and stress level is statistically significant. The SRC combined the handful of students (7), who said they’d had no stress over the past year with those claiming below average levels of stress in this graph. Interestingly, the students who said they’d had no stress also had the lowest average GPA. The small number of students claiming no stress means that the difference in their GPA is not statistically significant, however.
Sleep Habits

Days of Adequate Sleep

Students were asked the number of days in the prior week when they got enough sleep to feel rested when they woke up in the morning. As shown in Figure 21, answer options ranged from zero to seven days of adequate sleep. Figure 21 shows that there is a wide variation of sleep patterns among UWRF students. Fifty-five percent said they had enough sleep to awaken refreshed on 3 or fewer days per week. Only 4% felt they got that amount of sleep every day. Sleep patterns in 2009 were very similar to those in 2015.

Figure 21a indicates that there is a positive relationship between the number of days of adequate sleep a student got and his/her GPA. The more days of adequate sleep, the higher the average GPA. The correlation between days of sleep and GPA is highly statistically significant.
Sleepiness During Daytime Activities

It is probably not uncommon for professors to see students nodding off in class! When asked how big a problem feeling sleepy during the day, 60% of UWRF students said it was not a problem or only a little problem (Figure 22). At the other end of the spectrum, 15% said feeling sleepy during the day was a big or very big problem for them. The results for 2015 were similar to those in 2009.

Feeling sleepy during the day correlates very significantly with declining academic performance as measured by average GPA. Students who said that feeling sleepy during the day was not a problem they faced, had an average GPA of 3.43; those who said it was a very big problem for them, had an average GPA of only 3.02.
Days Per Week with Sleep-Related Issues

Figure 23 summarizes the number of times per week students reported having four sleep-related issues. Dark green (left-most segment) means they said they had zero days when the sleep problem arose, light green means they seldom had this issue (1 – 2 days in the previous 7), light red (third segment from left) means the issue happened pretty often (3 – 5 days) and dark red (last segment to right) means it happened most nights (6 – 7 times a week). The figure indicates that about three-quarters of the students have relatively few days when they wake up too early, can’t fall asleep, or go to bed because they can’t stay awake any longer. More than half said they were sleepy during the day, three or more days in the preceding week. Interestingly, only 40% of the students said that feeling sleepy during the day was at least “more than a little problem”, but 58% said they had experienced this at least 3 days a week. It appears that some of those students we see sleeping in class don’t view this as a problem! Compared to 2009, more students in 2015 noted a problem with waking up earlier than desired and being unable to get back to sleep. Otherwise, there were no statistically significant differences between the two years.

All of these sleep disturbances except waking too early are significantly and negatively correlated with academic performance. For expository purposes, we’ve shown only the graph for the relationship between having a hard time falling asleep and GPA. As the number of days during which students have difficulty falling asleep goes up, GPA trends downward. The graphs for being sleepy during the day and going to bed because they couldn’t stay away any longer were similar. It is probably not surprising that these sleep disturbances are significantly correlated with each other – e.g. if I wake up too early and can’t get back to sleep, I am likely to feel sleepy during the day and have to go to bed earlier than planned that night.
Electronic Devices

UW-River Falls students were asked how many hours they spend using electronic devices for leisure purposes in an average day. Answer options were: none, under an hour, 1 hour per day, 2 hours per day, 3 hours per day, 4 hours per day, and 5+ hours per day. Figure 24 indicates that a majority of UWRF students spend at least three hours per day using an electronic device for leisure.

The 2009 UWRF survey included two questions related to this topic, one asked about the hours spent watching television and a second asked about playing computer or video games. Because the questions in 2009 and 2015 don’t align, we can’t really compare the two datasets.

There is a highly significant negative correlation between time spent on electronic devices for leisure and average GPA. In Figure 24a, the SRC combined the handful of students who said they spend no time on electronic devices in an average day (8 students), with the 29 who said they spend less than an hour a day using them. The 2009 survey also found a significant negative correlation between hours spent playing video/computer games and average GPA.
Stressors and Academic Performance

Students were asked about the impact of a wide array of factors that could potentially adversely affect academic performance. Answer options included: NA, experienced but academics not affected, lowered exam grade, lowered course grade, received incomplete/dropped class, disrupted thesis. The SRC grouped answers into two groups:
- Not Applicable + No Impact
- Impact.

Figure 25 summarizes these results. Roughly one-third of the respondents said their academics suffered as a result of stress and about one-quarter felt sleep problems or anxiety did so. Work, colds/flu, and depression affected the academic performance of about 15% of the respondents. Slightly more than one-in-ten respondents said that concern for a friend, video game distractions, and relationship problems adversely affected their performance in the classroom. There are a number of positive differences between student’s assessment of some of the issues summarized in Figure 25: the self-assessed negative impacts of alcohol are lower in 2015 than in 2009, as are the impacts of colds/flu, drug use and gambling. On the other hand, anxiety and depression seem to be bigger issues in 2015.

The following factors were statistically and negatively correlated with GPA: alcohol use, anxiety, sexual assault, having ADHD, coming down with a cold or the flu, having a chronic illness, experiencing the death of a friend or family member, depression, drug use, financial worries, gambling addictions, computer game use, having a learning disability, having roommate difficulties, having an infection (e.g. inner ear, bronchitis, etc.), having sleep difficulties, stress, and work issues. These results align reasonably well with those reported earlier in this summary.
Habits and Conditions

The 2015 NCHA data revealed a number of associations between the habits and conditions of UWRF’s students and their academic performance as measured by GPA.

The SRC created an index of each respondent’s habits based on the following:

- Do they use tobacco in any form (1 if yes, 0 if no)
- Do they consume alcohol (1 if yes, 0 if no)
- Do they use marijuana (1 if yes, 0 if no)
- Do they use any drugs (1 if yes, 0 if no)
- Do they use e-Cigarettes (1 if yes, 0 if no)
- Do they binge drink (1 if yes, 0 if no)
- How many bad outcomes have they experienced after drinking at a party (number 0 – 9)
- How many sorts of prescription drugs do they abuse (number 0 – 4)
- Have they had multiple sex partners in past year (1 if yes, 0 if no)
- Are they trying to change their weight (1 if yes, 0 if no)
- Did they engage in no exercise (1 if yes, 0 if no)
- Do they spend an average of 4 hours or more per day on electronic devices (1 if yes, 0 if no)

This index ranged in value from 0 to 16.

We also created an index for each respondent’s condition based on the following:

- If they assessed their general health as good or worse (1 if yes, 0 if no)
- If they reported experiencing any trauma (e.g. physical or sexual assault) in past 12 months (1 if yes, 0 if no)
- If they have been in an abusive relationship in past 12 months (1 if yes, 0 if no)
- The total number of events that have been hard for them to handle (finances, relationships, family, etc.)
- Total number of mental health diagnoses they’ve received
- Total number of personal problems (loneliness, anxiety, etc.)
- If they rated their level of stress as more than average or tremendous (1 if yes, 0 if no)
- Number of days they reported having inadequate sleep (0 – 7)

This index range in value from 0 to 29.

The SRC did a linear regression using the habit and condition indexes to “explain” students’ GPA. Our results are summarized in the following equation:

\[
\text{GPA} = 3.52 - 0.029\text{Habit} - 0.014\text{Condition}
\]

(.00) \hspace{1cm} (.00)
The numbers level of significance (given in parentheses below the coefficients) is extremely high, meaning that we can be quite confident that these indexes are statistically associated with differences in a student’s GPA. The coefficient for the Habit index, 0.029, measures the impact that each “bad” habit a student has reduces their expected GPA by this amount. Other things being equal, the student who had a habit index value of 16 would have a GPA that is about half a grade point below the average for the sample as a whole. The 0.014 coefficient measures by how much we would expect each additional adverse condition to affect a student’s GPA. So for the student with an index value of 29, their GPA would be expected to be about 0.4 points lower than average.

The Habit and Condition indexes “explain” relatively little of the overall variation in GPA; the adjusted R-Squared value is only 5%. Obviously, many other things affect the GPA a student achieves (their intelligence, the difficulty of classes attempted, time management skills, and so on). There are, however, quite clear negative impacts on student achievement associated with their habits and conditions.

**Summary and Conclusions**

Based on the analysis of the 2015 NCHA data, it is hard to avoid the conclusion that the choices students make and the adverse things that befall them are systematically affecting their grades.

In terms of student choices, the ubiquity and social acceptance of alcohol consumption continues to have a significant and negative impact on academic performance. Upwards of one-quarter of all respondents had experienced one or more adverse outcomes at social events, in all likelihood because of excessive alcohol consumption. A similar proportion owned up to having had at least one incidence of binge drinking over the preceding two week period. A hopeful sign is that compared to 2009 alcohol consumption seems to have diminished a bit. Students who don’t exercise, who spend substantial amounts of time on their electronic devices, who smoke (either tobacco or e-cigarettes), and who get inadequate amounts of sleep (which may or may not be the student’s choice) also tend to have lower academic performance.

In terms of adverse events that happen to students, mental health is a key factor in academic performance. Nearly one-in-five respondents to the 2015 NCHA survey had been diagnosed with anxiety or depression. The frequency of diagnosed depression or anxiety has increased significantly since 2009. Depression and overall stress levels were associated with lower GPAs.

UWRF already expends a good deal of effort to raise the awareness of the link between some of these student choices and success in the classroom. On-going efforts to encourage students to drink responsibly, exercise, get sufficient sleep and develop coping mechanisms for dealing with stress/anxiety should be continued.