

# A BRIEF REPORT ON THE PREVALENCE OF SELF-REPORTED MOOD DISORDERS, ANXIETY DISORDERS, ATTENTION-DEFICIT/HYPERACTIVITY DISORDER, AND AUTISM SPECTRUM DISORDER IN ANIME, BRONY, AND FURRY FANDOMS

Dr. Stephen Reysen, Texas A & M University at Commerce

Dr. Courtney N. Plante, MacEwan University

Daniel Chadborn, Texas A & M University at Commerce

Dr. Sharon E. Roberts, Renison University College, University of Waterloo

Dr. Kathleen C. Gerbasi, Niagara County Community College

Justin I. Miller, Transylvania University

Amanda Gamboa, Texas A & M University at Commerce

Adam Ray, Texas A & M University at Commerce

## Abstract

We examined the prevalence rates of mental and neurodevelopmental illness among members of three different fandoms: anime, *My Little Pony* (brony), and furry. In total, nearly 2,600 fans across these groups self-reported whether or not they had ever been diagnosed with a psychological and/or neurodevelopmental illness. Data revealed that anime fans, bronies, and furies all show higher rates of diagnoses on the autism spectrum than rates observed in studies of the general population. Rates of mood and anxiety disorders were lower than that of the general population. Rates of attention-deficit/hyperactivity disorder were lower in anime and brony fandoms, but were not different from the general population

for furry fans. Taken together, the results provide an exploratory look at mental health issues in fan communities and suggest both commonalities across fan groups and idiosyncrasies within particular fandoms.

*Keywords:* anime, brony, furry, autism, mood disorders, anxiety disorders, ADHD

## Introduction

A growing body of research suggests that engaging with fan communities is associated one's psychological well-being. Illustrating this point, research on anime fans has shown that interpersonal connections and friendships fostered between fans is associated with psychological well-being (Reysen,

Plante, Roberts, & Gerbasi, 2017a). Social interaction has been suggested as a plausible mechanism, with a study of anime fans showing that convention-going fans report better psychological well-being than anime fans surveyed online (Ray, Plante, Reysen, Roberts, & Gerbasi, 2017). Hardly unique to the anime fandom, participation in the furry fandom has similarly been found to positively correlate with psychological well-being, in no small part through affiliation with like-minded others and the reduced need to conceal one's stigmatized identity (Mock, Plante, Reysen, & Gerbasi, 2013). And, like anime fans, furies also report greater well-being while attending a fan convention than they do in the weeks immediately following the convention (Plante, Reysen, Roberts, & Gerbasi, 2016). Despite this research on the relationship between fan groups and well-being, there has been considerably less work assessing the converse relationship – that of fandom participation and mental health and neurodevelopmental disorder diagnoses. Addressing this gap in the existing literature, the present research aims to explore the prevalence of mood disorders, anxiety disorders, attention-deficit/hyperactivity disorder (ADHD), and autism spectrum disorder in different fandoms: anime fans, bronies, and furies.

### **Anime, *My Little Pony*, and Furry Fans**

Anime fans are presently defined as people with a passionate interest in Japanese animation and manga. Demographically, anime fans are comprised primarily of young males interested in anime and video games (Reysen, Plante, Roberts, Gerbasi, & Shaw, 2016). Their primary motivations for fandom engagement include the sense of belongingness it provides, entertainment, eustress, escape from the drudgery of everyday life, and self-esteem (Schroy, Plante, Reysen, Roberts, & Gerbasi, 2016). Many anime fans report having discovered the fandom through online sources, friends, media, and anime clubs, with their interest often manifesting as consumption of anime and manga and participating in discussions about anime with other fans (Reysen, Plante, Roberts, Gerbasi, Schroy, et al., 2017).

Bronies are presently defined as fans of the television show *My Little Pony: Friendship Is Magic*. The show, originally meant to promote sales of a series of toys targeted primarily at young girls, was recently rebooted in 2010 (Gilbert, 2015). In addition to its popularity among its targeted demographic, this new rendition of the show has also become popular among young adult males, who refer to themselves as bronies (Reysen, Chadborn, & Plante, 2017). The show's content espouses a myriad of prosocial norms, with fans reflecting on,

internalizing, and behaving in accordance with those norms through charity work and other prosocial behaviour (Chadborn, Plante, & Reysen, 2016).

Furries are defined as people with a passionate interest in art and stories featuring anthropomorphized animal characters (Plante et al., 2016). Rather than interest in a specific show or genre, furries enjoy a broad range of shows, stories, art, music, and costuming that all feature animals with anthropomorphic traits (Plante, Reysen, Roberts, & Gerbasi, 2017). Like anime fans, furries are motivated primarily by the sense of belongingness and entertainment provided by the fandom (Schroy et al., 2016). Unlike anime fans, however, many furries become involved in the fandom through a persistent, lifelong interest in anthropomorphic animals that eventually led to their accidental discovery of the fandom (Reysen, Plante, Roberts, & Gerbasi, 2017b).

Taken together, the anime, brony, and furry fandoms comprise three distinct fan groups which share several demographic and content-based similarities. Demographically, all three groups tend to be comprised primarily of males in their late teens and early twenties (Reysen, Chadborn, & Plante, 2017; Reysen, Plante, Roberts, Gerbasi, & Shaw, 2016; Plante et al., 2016). In terms of content, anime fans, bronies, and furries all broadly overlap with regard to their content: animated media with a fantasy or science-fiction theme. Given such similarities in both the

groups' composition and in the content with which show an interest, they appear to be excellent candidates for cross-fandom comparison, given that such similarities rule out a number of potentially important confounding variables when it comes to cross-fandom differences in mental health diagnoses prevalence.

### **Mood Disorders, Anxiety Disorders, ADHD, Autism Spectrum Disorder**

Nearly half of the US population will have a diagnosable mental disorder at some point in their life, with mood and anxiety disorders being the most common (Kessler & Wang, 2008). Mood disorders tend to occur in women more than men, and reflect times in one's life when one is abnormally happy or sad, including diagnoses such as depression, dysthymia (persistent depression), or bipolar disorder (manic and depressive episodes; Morrison, 2014). The National Comorbidity Survey Replication (NCS-R, 2007), a large, nationally representative epidemiological survey, polled adults (18 years of age or older) in the US and found a lifetime prevalence rate of mood disorders of 21.4% (male = 17.5%, female = 24.9%). Anxiety disorder, also more common among women than men, reflects extreme anxiety or fear which is distressing, with common diagnoses including panic disorder (episodes of intense dread), phobias (intense fear of objects or situations), or generalized anxiety disorder (anxiousness and worry

over period of time; Morrison, 2014). The NCS-R found a lifetime prevalence rate of anxiety disorders of 31.2% (male = 25.4%, female = 36.4%).

Attention-deficit/hyperactivity disorder (ADHD), more common for boys than for girls, but relatively equal in adults, reflects behaviors that include excessive impulsivity, inattention, and/or hyperactivity (Morrison, 2014). The NCS-R (2007) found a lifetime prevalence rate of ADHD of 8.1% (male = 9.8%, female = 6.4%). Individuals with an autism spectrum disorder, more common for boys than girls, tend to show impaired social interaction, impaired communication, and compulsive or ritualistic behaviors (Morrison, 2014). In 2012, the prevalence of diagnoses on the autism spectrum for 8-year-old children in the US was 1.46% (boys = 2.4%, girls = 0.5%; Christensen et al., 2012). Autism is usually diagnosed as a child, with the condition persisting throughout life (Morrison, 2014). As such, this prevalence rate for children can be a suitable proxy for adult prevalence rates of autism.

## **Present Research**

The purpose of the present research is exploratory: to assess the prevalence rates of mood disorders, anxiety disorders, ADHD, and autism spectrum disorder in the anime, brony, and furry fandoms. Members of each of these fandoms were asked to indicate whether they had ever been diagnosed by a

mental health professional with a mental disorder as part of a set of larger survey studies of each of the fandoms. Past research has suggested that there may be a higher prevalence of people on the autism spectrum among members of the furry fandom relative to the general population (Plante, Roberts, Reysen, & Gerbasi, 2017), but beyond this, there is little work testing whether this finding is unique to the furry fandom and whether the increased prevalence is also found for other mental/neurodevelopmental conditions. However, Plante and colleagues did suggest that higher prevalence of autism may not be unique to the furry fandom and may, in fact, be characteristic of fans in general, given that criteria for autism spectrum diagnosis includes fixations on interests with abnormal or excessive intensity or focus. Given the relative dearth of research on this topic and the exploratory nature of the study, we have no a priori hypotheses, with the exception that, based on prior findings (Plante et al., 2017), furries will show a higher prevalence rate of autism spectrum than is found in the general population.

## **Method**

### **Participants and Procedure**

Anime fans ( $N = 737$ , 54.8% male, 0.7% other sex;  $M_{\text{age}} = 25.01$ ,  $SD = 8.13$ ) were sampled at A-Kon (an anime convention in Dallas, TX) and from online anime-related websites and

message boards. Bronies ( $N = 1055$ , 87.8% male, 0.4% intersex, 0.9% other sex;  $M_{\text{age}} = 24.64$ ,  $SD = 6.90$ ) were solicited from online brony-related websites and message boards. Furry fans ( $N = 804$ , 75.5% male, 2.9% transgender, 0.7% other sex;  $M_{\text{age}} = 26.22$ ,  $SD = 7.49$ ) were sampled at Anthrocon (a furry convention in Pittsburgh, PA). As part of a larger study about each of these respective fandoms, participants indicated whether they had ever been diagnosed with a psychological disorder by a mental health professional.

## Materials

Participants were asked if they had “been diagnosed by a licensed practitioner with one or more psychological problems” and given two spaces to write or type their diagnoses. We coded the frequency of all of the diagnoses and are presenting the most prevalent conditions here. For comparison to the prevalence rate in the general US population, we used prevalence rates from published reports noted in the introduction.

## Results

### Comparisons with Population

To examine differences between prevalence rates compared to the US population, we conducted a series of binomial tests (see Table 1 for prevalence rates). The prevalence of mood and anxiety disorders was

significantly lower in anime, brony, and furry fandoms than the US population ( $ps < .001$ ). Anime fans and bronies also showed lower ADHD rates than the US population ( $ps < .001$ ), and the furies showed no difference ( $p = .241$ ). Anime, brony, and furry fandoms all showed a higher prevalence of diagnoses on the autism spectrum than the US population ( $ps < .001$ ).

### Comparisons between Fan Groups

A similar series of binomial tests were used to examine differences in prevalence rates between the different fan groups (see Table 1). Anime fans showed higher mood disorders ( $p = .006$ ) and anxiety disorders ( $p = .022$ ) than bronies. Anime fans showed fewer autism diagnoses ( $p < .001$ ) and did not differ significantly from bronies for ADHD diagnoses ( $p = .265$ ). Anime fans did not differ from furies for mood disorders ( $p = .226$ ), anxiety disorders ( $p = .164$ ), or autism spectrum diagnoses ( $p = .089$ ), but did report fewer ADHD diagnoses ( $p = .001$ ) than furies. Bronies reported lower incidences of mood disorders ( $p < .001$ ) and ADHD ( $p = .001$ ), and a greater frequency of autism ( $p < .001$ ), and no difference in rates of anxiety disorders ( $p = .130$ ) than furies.

### Sex Differences

#### Comparisons with population.

Given that the fan groups differed considerably from one another and from

the general population with regard to their sex composition, we next ran analyses examining group differences from the general population for males and females separately (see Table 1). Male anime, brony, and furry fans reported lower mood and anxiety disorders than US males ( $p < .001$ ). Male anime fans ( $p = .001$ ) and bronies ( $p < .001$ ) reported a lower rate of ADHD, while furies showed no difference ( $p = .454$ ) with US males. Male anime fans did not differ from the US male population ( $p = .267$ ), while males bronies ( $p < .001$ ) and furies ( $p = .004$ ) were higher than the population rates for diagnoses on the autism spectrum.

Female anime fans were lower ( $p = .024$ ), while female brony ( $p = .122$ ) and furry fans ( $p = .279$ ) showed no difference with rates of females in the US population for mood disorder diagnoses. Female anime, brony, and furry fans showed lower rates of anxiety disorders diagnoses than US females ( $p < .001$ ). Female anime fans ( $p = .379$ ), bronies ( $p = .325$ ), and furies ( $p = .487$ ) did not differ from US females for diagnoses of ADHD. Female anime fans ( $p < .001$ ), bronies ( $p < .001$ ), and furies ( $p = .010$ ) were all higher than US females for autism spectrum diagnoses.

**Comparisons between groups.** We next examined group differences by sex using an analogous set of binomial tests (see Table 1). Male anime fans did not differ from bronies for mood disorders ( $p = .332$ ) and ADHD ( $p = .368$ ), and were lower than brony males for rates of

anxiety ( $p = .012$ ) and autism ( $p < .001$ ). Male anime fans did not differ from furry fans on self-reported autism ( $p = .112$ ), but reported were less likely that furies to report mood disorders ( $p = .017$ ), anxiety disorders ( $p = .004$ ), and ADHD ( $p = .002$ ). Male bronies were lower than furies for rates of mood disorders ( $p = .006$ ) and ADHD ( $p < .001$ ), higher on rates of autism ( $p < .001$ ), and did not differ for anxiety disorders diagnoses ( $p = .307$ ).

Female anime fans did not differ from female bronies on rates of mood disorders ( $p = .464$ ), anxiety ( $p = .345$ ), ADHD ( $p = .102$ ), or autism ( $p = .055$ ). Female anime fans did not differ from female furies on rates of mood disorders ( $p = .157$ ), anxiety ( $p = .152$ ), ADHD ( $p = .497$ ), or autism ( $p = .531$ ). Female bronies did not differ from female furies on rates of mood disorders ( $p = .278$ ), anxiety ( $p = .198$ ), ADHD ( $p = .261$ ), or autism ( $p = .148$ ).

**Comparisons within groups.** To examine sex differences for each mental disorder within each of the fan groups, we conducted chi-square analyses. Female anime (Table 2), brony (Table 3), and furry (Table 4) fans reported higher rates of mood and anxiety disorders than expected in comparison to their male counterparts. No other sex differences within each group were found.

## Discussion

The purpose of the present study was to explore and assess the prevalence rates of mood disorders, anxiety

disorders, ADHD, and autism spectrum disorder in anime, brony, and furry fandoms and test whether they differed significantly from one another and from the general population. Beyond the expectation that furies would have a higher prevalence of diagnoses on the autism spectrum, which was observed in the present study, we had no a priori hypotheses.

In line with past research (Plante et al., 2017), furies were found to have a higher prevalence of autism spectrum disorders compared to the US population. Plante and colleagues also suggested that this finding might not be unique to the furry fandom. Indeed, the results showed that anime fans and bronies both had a higher prevalence of autism spectrum disorder than the general population. Further research is needed regarding the possibility that fans with an autism spectrum disorder are attracted to fantasy-based fandoms specifically, which all of the fandoms in the present research arguably fall in this category, or if this finding extends to fandoms in general, due to their association with a strong interest in a specific topic. In general, fans in all three fandoms showed lower rates of mood disorders, anxiety disorders, and ADHD diagnoses than the US population. The one exception was that furies showed no difference from the general population for rates of ADHD. These results suggest, at least for these young fans, that at present fans are mentally healthier than the general population.

Although sex differences in mental/neurodevelopmental issues was not a primary purpose of the present research, sex differences in the demographic composition of the three fan groups made it necessary to examine whether sex-level differences existed between and within each group with respect to mental/neurodevelopmental disorder prevalence. Women were more likely than the males in these fandoms to indicate a mood disorder and/or an anxiety disorder for anime, brony, and furry fandoms. This is consistent with a wealth of past research (Morrison, 2014) showing women to be more likely to be diagnosed with disorders under these umbrella terms. Women across the fan groups tended to show similar rates of mental/neurodevelopmental diagnoses. Male fans showed minor differences between the fan groups. Thus, in general, the sex differences that were observed followed the general trend of those found in the population.

The present research should be interpreted cautiously, given a number of important limitations in its methodology. First, participants were asked to self-report diagnoses of mental and/or neurodevelopmental issues – in other words, there is no way to confirm the accuracy of these reports in the present research. It may be possible, for example, that demand characteristics (i.e., the need to appear “normal”) may lead participants to not disclose any mental/neurodevelopmental issues they have been diagnosed with. In addition, it is also possible that participants may

have simply forgotten to list a diagnosis, or may not be able to accurately recall the diagnosis itself. The measure also does not account for participants who may have a mental/neurodevelopmental issue but have not yet been diagnosed by, or sought treatment from, a licensed professional. Such cases would not have been included in the present research, which may lead to underestimation of prevalence rates in the fan groups. Another limitation of the present study is that the fan groups assessed tended to be young and male; this may also present differences between prevalence rates as different from the general population. In a related vein, further research is needed comparing these groups to other fan groups such as sport fans. Despite these considerable limitations, however, the present work has tremendous theoretical value, given the relative dearth of research regarding mental and/or neurodevelopmental issues within fan communities, the prevalence of fan groups in general, and the potential practical applications of this work.

To conclude, we explored and assessed the prevalence rates of mood disorders, anxiety disorders, ADHD, and autism spectrum diagnoses in three different fandoms. Anime fans, bronies, and furies all showed lower rates of mood disorders, anxiety disorders, and ADHD than the general population (with the exception of furies and ADHD which was not different than the population). However, anime fans, bronies, and furies showed higher diagnoses on the autism spectrum than

the general population. Given that past research shows a variety of positive well-being outcomes for fans, further research regarding why higher rates of autism are found in some fandoms, and how fandom participation may mitigate negative symptoms of mental/neurodevelopmental issues, may provide fruitful avenues for future research.

## References

- Chadborn, D., Plante, C. N., & Reysen, S. (2016). Perceived stigma, social identity, and group norms as predictors of prosocial behavior in a fandom. *International Journal of Interactive Communication Systems and Technologies, 6*, 35-49.
- Christensen, D. L., Baio, J., Braun, K. V. N., Bilder, D., Charles, J., Constantino, J. N., . . . Yeargin-Allsopp, M. (2012). Prevalence and characteristics of autism spectrum disorder among children aged 8 years — autism and developmental disabilities monitoring network, 11 sites, United States, 2012. *Morbidity and Mortality Weekly Report, 65*, 1-23.
- Gilbert, A. (2015). What we talk about when we talk about bronies. *Transformative Works and Cultures, 20*. doi:10.3983/twc.2015.0666
- Kessler, R. C., & Wang, P. S. (2008). The descriptive epidemiology of commonly occurring mental disorders in the United States. *Annual Review of Public Health, 29*,



- 115-129.
- Mock, S. E., Plante, C. N., Reysen, S., & Gerbasi, K. C. (2013). Deeper leisure involvement as a coping resource in a stigmatized leisure context. *Leisure/Loisir, 37*, 111-126.
- Morrison, J. (2014). *DSM-5 made easy: The clinician's guide to diagnosis*. New York: Guilford Press.
- National Comorbidity Survey-Replication (NCS-R). (2007). *Lifetime prevalence of DSM-IV/WMH-CIDI disorders by sex and cohort*. Retrieved from [http://www.hcp.med.harvard.edu/ncs/ftpdir/NCS-R\\_Lifetime\\_Prevalence\\_Estimates.pdf](http://www.hcp.med.harvard.edu/ncs/ftpdir/NCS-R_Lifetime_Prevalence_Estimates.pdf)
- Plante, C. N., Reysen, S., Roberts, S. E., & Gerbasi, K. C. (2016). *FurScience! A summary of five years of research from the International Anthropomorphic Research Project*. Waterloo, Ontario: FurScience.
- Plante, C. N., Reysen, S., Roberts, S. E., & Gerbasi, K. C. (2017). "Welcome to the jungle": Content creators and fan entitlement in the furry fandom. *Journal of Fandom Studies, 5*, 63-80.
- Plante, C. N., Roberts, S. E., Reysen, S., & Gerbasi, K. C. (2017). Say it ain't so: Addressing and dispelling misconceptions about furies. In T. Howl (Ed.), *Furies among us 2: More essays on furies by furies* (pp. 142-161). Lansing, MI: Thurston Howl Publications.
- Ray, A., Plante, C. N., Reysen, S., Roberts, S. E., & Gerbasi, K. C. (2017). "You had to be there": Convention attendance and well-being in anime fans. Manuscript submitted for publication.
- Reysen, S., Chadborn, D., & Plante, C. N. (2017). Activism, character identification, and frequency of watching *My Little Pony: Friendship is Magic*. *AASCIT Journal of Psychology, 3*, 12-16.
- Reysen, S., Plante, C. N., Roberts, S. E., & Gerbasi, K. C. (2017a). Anime fans to the rescue: Evidence of Daniel Wann's team identification-social psychological health model. *The Phoenix Papers, 3*(1), 237-247.
- Reysen, S., Plante, C. N., Roberts, S. E., & Gerbasi, K. C. (2017b). "It just clicked": Discovering furry identity and motivations to participate in the fandom. In T. Howl (Ed.), *Furies among us 2: More essays on furies by furies* (pp. 111-128). Lansing, MI: Thurston Howl Publications.
- Reysen, S., Plante, C. N., Roberts, S. E., Gerbasi, K. C., Schroy, C., Gamboa, A., Gamboa, J., & McCarter, T. (2017). Routes to fandom discovery and expression of fan identity in furry, anime, and fantasy sport fans. *The Phoenix Papers, 3*(1), 373-384.
- Reysen, S., Plante, C. N., Roberts, S. E., Gerbasi, K. C., & Shaw, J. (2016). An examination of anime fan stereotypes. *The Phoenix Papers, 2*(2), 90-117.
- Schroy, C., Plante, C. N., Reysen, S., Roberts, S. E., & Gerbasi, K. C. (2016). Different motivations as predictors of psychological connection to fan interest and fan

groups in anime, furry, and fantasy  
sport fandoms. *The Phoenix Papers*,

2(2), 148-167.

Table 1

*Frequency (Percentage) of Diagnoses in Anime, Brony, and Furry Fandoms*

Diagnosis	Anime	Brony	Furry	Population
<b>Mood Disorders</b>				
Male	36 (8.9%) <sub>a</sub>	90 (9.7%) <sub>a</sub>	75 (12.4%) <sub>b</sub>	17.5% <sub>c</sub>
Female	66 (20.1%) <sub>a</sub>	23 (19.8%) <sub>ab</sub>	38 (22.6%) <sub>ab</sub>	24.9% <sub>b</sub>
Total	102 (13.8%) <sub>a</sub>	114 (10.8%) <sub>b</sub>	120 (14.9%) <sub>a</sub>	21.4% <sub>c</sub>
<b>Anxiety Disorders</b>				
Male	13 (3.2%) <sub>a</sub>	54 (5.8%) <sub>b</sub>	38 (6.3%) <sub>b</sub>	25.4% <sub>c</sub>
Female	56 (17.1%) <sub>a</sub>	21 (18.1%) <sub>a</sub>	25 (14.9%) <sub>a</sub>	36.4% <sub>b</sub>
Total	69 (9.4%) <sub>a</sub>	77 (7.3%) <sub>b</sub>	67 (8.3%) <sub>ab</sub>	31.2% <sub>c</sub>
<b>ADHD</b>				
Male	22 (5.4%) <sub>a</sub>	56 (6.0%) <sub>a</sub>	58 (9.6%) <sub>b</sub>	9.8% <sub>b</sub>
Female	19 (5.8%) <sub>a</sub>	9 (7.8%) <sub>a</sub>	10 (6.0%) <sub>a</sub>	6.4% <sub>a</sub>
Total	41 (5.6%) <sub>a</sub>	65 (6.2%) <sub>a</sub>	71 (8.8%) <sub>c</sub>	8.1% <sub>c</sub>
<b>Autism Spectrum</b>				
Male	12 (3.0%) <sub>ab</sub>	67 (7.2%) <sub>c</sub>	26 (4.3%) <sub>a</sub>	2.4% <sub>b</sub>
Female	8 (2.4%) <sub>a</sub>	5 (4.3%) <sub>a</sub>	4 (2.4%) <sub>a</sub>	0.5% <sub>b</sub>
Total	20 (2.7%) <sub>a</sub>	74 (7.0%) <sub>b</sub>	30 (3.7%) <sub>a</sub>	1.5% <sub>c</sub>

*Note.* Percentages in each row with different subscripts are significantly different at  $p < .05$ . The data with males and females excludes individuals with other sex.

Table 2

*Observed (Expected) Chi-Square Analyses of Disorders by Sex for Anime Fandom*

Diagnosis	Male	Female	X <sup>2</sup>	<i>p</i>	Cramer's V
Mood Disorder					
Absent	368 (347.7)	262 (282.3)			
Present	36 (56.3)	66 (45.7)	18.97	< .001	.161
Anxiety					
Absent	391 (365.9)	272 (297.1)			
Present	13 (38.1)	56 (30.9)	40.70	< .001	.236
ADHD					
Absent	382 (381.4)	309 (310.1)			
Present	22 (22.6)	19 (18.4)	0.04	.839	.008
Autism Spectrum					
Absent	392 (393)	320 (319)			
Present	12 (11)	8 (9)	0.19	.661	.016

*Note.* Due to low frequencies of non-binary sex respondents, these individuals are not included in this analysis or in Tables 3 and 4.

Table 3

*Observed (Expected) Chi-Square Analyses of Disorders by Sex for Brony Fandom*

Diagnosis	Male	Female	X <sup>2</sup>	p	Cramer's V
Mood Disorder					
Absent	836 (825.6)	93 (103.4)			
Present	90 (100.4)	23 (12.6)	10.89	.001	.102
Anxiety					
Absent	872 (859.3)	95 (107.7)			
Present	54 (66.7)	21 (8.3)	23.24	< .001	.149
ADHD					
Absent	870 (868.2)	107 (108.8)			
Present	56 (57.8)	9 (7.2)	0.52	.473	.022
Autism Spectrum					
Absent	859 (862)	111 (108)			
Present	67 (64)	5 (8)	1.37	.242	.036

Table 4

*Observed (Expected) Chi-Square Analyses of Disorders by Sex for Furry Fandom*

Diagnosis	Male	Female	X <sup>2</sup>	p	Cramer's V
Mood Disorder					
Absent	532 (518.5)	130 (143.5)			
Present	75 (88.5)	38 (24.5)	11.13	.001	.120
Anxiety					
Absent	569 (557.7)	143 (154.3)			
Present	38 (49.3)	25 (13.7)	13.09	< .001	.130
ADHD					
Absent	549 (553.7)	158 (153.3)			
Present	58 (53.3)	10 (14.7)	2.13	.144	.052
Autism Spectrum					
Absent	581 (583.5)	164 (161.5)			
Present	26 (23.5)	4 (6.5)	1.28	.258	.041