



# The Effects of Social Isolation on BMI

Gilberti, Drew

California State University, Chico. Fall 2017. Math 615.



## Introduction

Social isolation and loneliness are increasingly common problem that are thought to directly impact an individual’s well-being. Having at least a few close friends is important for self-esteem and the reduction of depressive behavior. Friends are especially important to adolescent children, who will become withdrawn and unhappy. Social isolation, a state where an individual has a complete lack of contact with other humans for an extended amount of time, has been linked to an increase in cardiovascular disease, blood pressure, increased inflammatory response to stress, and even mortality.

## The Question

- Do individuals with fewer friends suffer from increased BMI?
- Do those that live alone suffer from increased BMI?

## Methods

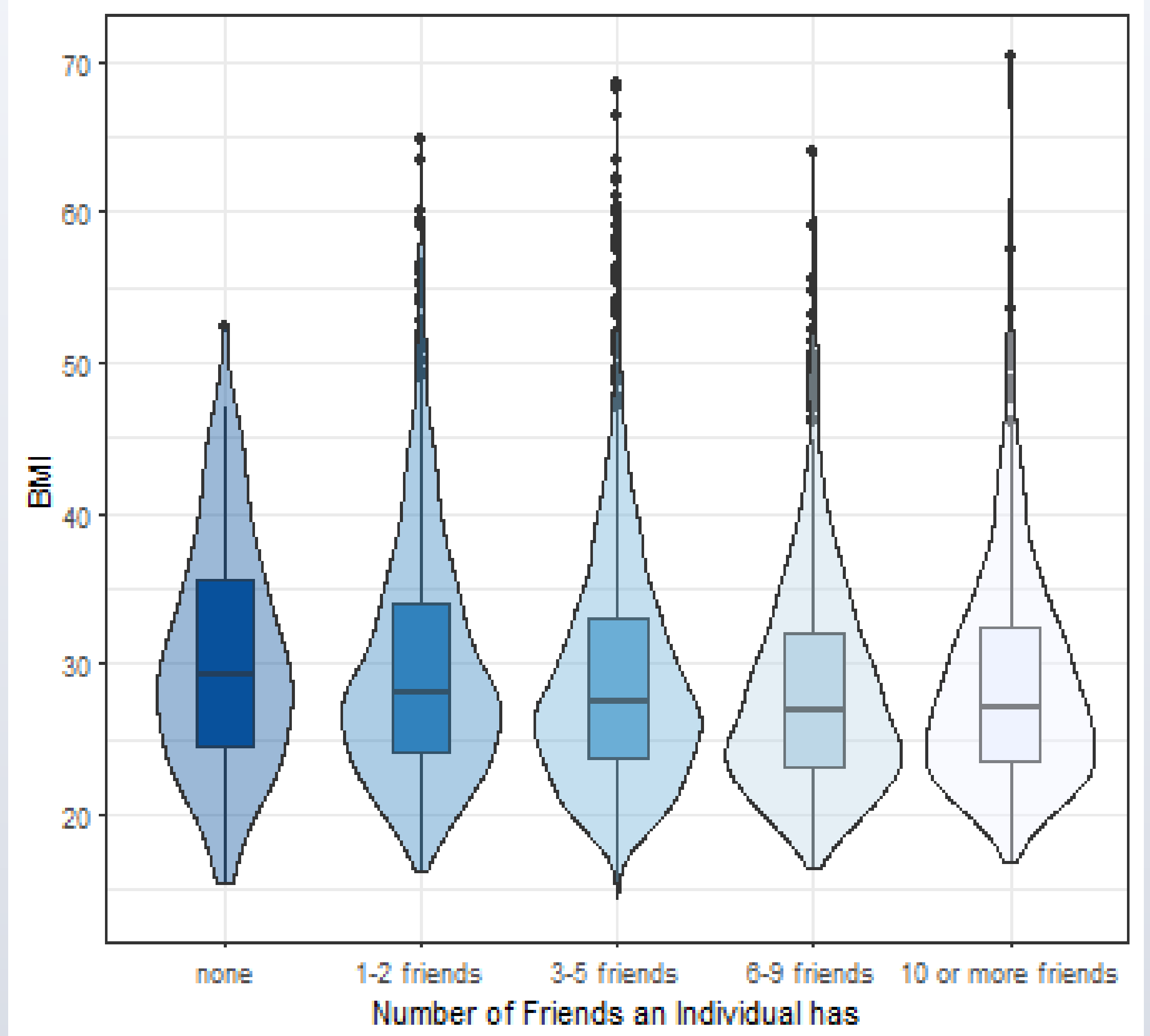
Data was obtained from the National Longitudinal Study of Adolescent to Adult Health. The study was designed to explore the developmental and health trajectories of adolescence as they mature into adulthood. Wave IV dataset is the fourth in-home interview. The participants consisted of 6504 participants, ages 24 to 32, 52% women, and a varied ethnicity.

## Sample Characteristics

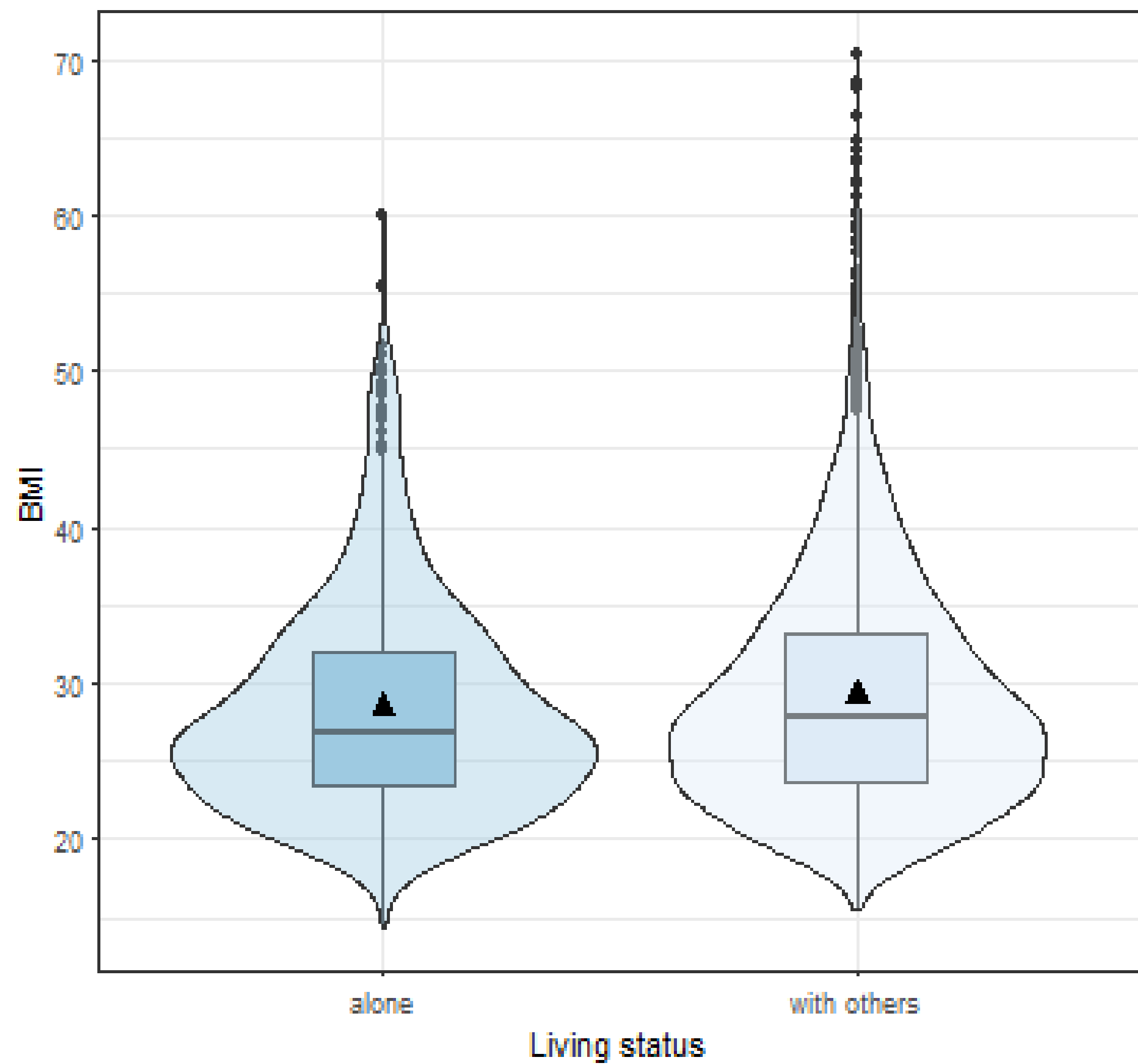
Number of friends	Live alone
A categorical variable to measure the number of friends an individual has.	A binary measurement of if someone lives alone or with others.
BMI	Live alone
A continuous measurement of someone's BMI.	A binary measurement of if someone lives alone or with others.

A significant relationship was found between BMI and the number of friends a person has. At the most extreme, people with 10 or more friends had 1.527 less BMI when capered to those with no friends. ANOVA used for analysis.

## Friend’s Influence on BMI

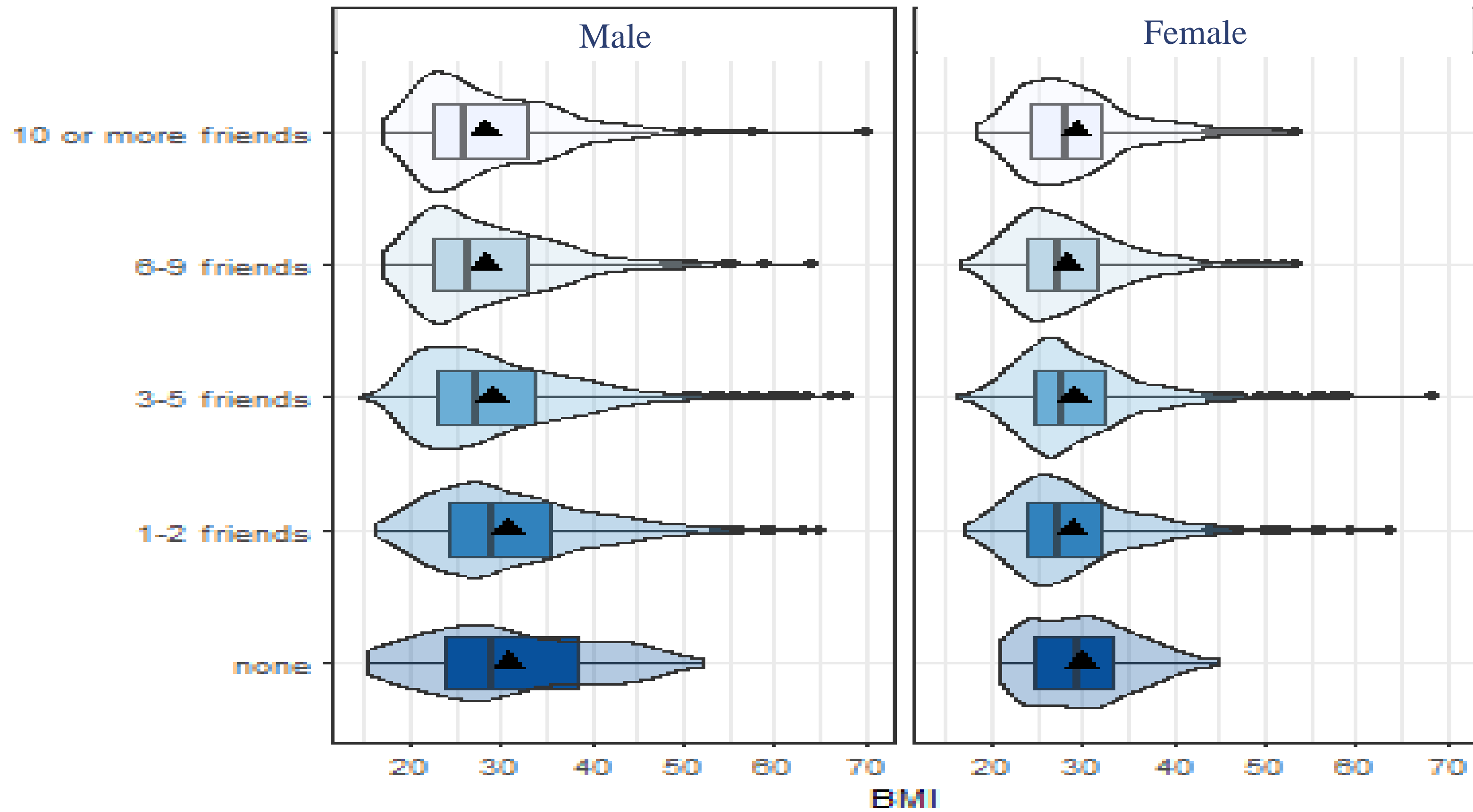


	Diff	LWE	UPR	P adj
1-2 friends-none	-0.4817439	-2.31333	1.34984839	0.9525020
3-5 friends-none	-1.2703201	-3.04834	0.50770171	0.2912638
6-9 friends-none	-2.0416644	-3.9046772	-0.17865165	0.0234281
3-5 friends-1-2 friends	-0.7885762	-1.5356311	-0.04152137	0.0325374
10 or more friends-none	-1.5268555	-3.4409684	0.38725739	0.189
10 or more friends-1-2 friends	-1.0451116	-2.0749453	-0.01527790	0.0447014



A T-Test was preformed to test the association between living status and BMI. People who live alone are, on average, have a higher 0.81(.207, 1.41) BMI compared to people who live with others.

## Gender as a moderator?



ANOVA was used to test gender as a moderator Both females and males are no longer significant. There is a clear difference between number of friends and BMI between both genders, so gender is a moderating variable for this relationship.

## Discussion

The number of friends a person has and their BMI are significantly associated. In addition, whether a person lives alone or with others is significantly associated with BMI. This is consistent with other studies that have explored the consequences of social isolation. Gender as a moderator is unexpected, and could be cause for further research.

## Implication

Friends play a central role in the health in the modern world. The average person has few friends than those that lived 100 years ago. A lack of social connectedness may lead to a mental health disorders or bully-victimization (Braddock et al., 2015), so social skills or relationship based treatments are especially important for those who struggle to find friends.

## References

Braddock, B. A., Twyman, K. A., Garrity, M. R., Wang, T., Neary, M. K., Ezzelgot, J., & Heithaus, J. L. (2015). A Few Close Friends. *Clinical Pediatrics*, 54(12), 1192–1199. <https://doi.org/10.1177/0009922815570619>

Chow, C. M., & Buhrmester, D. (2011). Interdependent patterns of coping and support among close friends. *Journal of Social and Personal Relationships*, 28(5), 684–705. <https://doi.org/10.1177/0265407510386134>

Schnittker, J. (2007). Look (Closely) at All the Lonely People. *Journal of Aging and Health*, 19(4), 659–682. <https://doi.org/10.1177/0898264307301178>

Wilcox, K., & Stephen, A. T. (2013). Are Close Friends the Enemy? Online Social Networks, Self-Esteem, and Self-Control. *Journal of Consumer Research*, 40(1), 90–103. <https://doi.org/10.1086/668794>

Harris, Kathleen Mullan. 2009. The National Longitudinal Study of Adolescent to Adult Health (Add Health), Waves I & II, 1994–1996; Wave III, 2001–2002; Wave IV, 2007–2009 [machine-readable data file and documentation]. Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill. DOI: 10.3886/ICPSR27021.v9.

RStudio Team (2015). RStudio: Integrated Development for R. RStudio, Inc., Boston, MA URL <http://www.rstudio.com/>.