

Psi Chi
Journal of
**Psychological
Research**

WINTER 2020 | VOLUME 25 | ISSUE 4

ISSN: 2325-7342

Published by Psi Chi,
The International Honor
Society in Psychology



EDITOR

DEBI BRANNAN, PhD
Western Oregon University
Telephone: (503) 751-4200
E-mail: debi.brannan@psichi.org

ASSOCIATE EDITORS

ERIN AYALA, PhD
St. Mary's University of Minnesota

JENNIFER L. HUGHES, PhD
Agnes Scott College

TAMMY LOWERY ZACCHILLI, PhD
Saint Leo University

ALBEE MENDOZA, PhD
Wesley College

STEVEN V. ROUSE, PhD
Pepperdine University

KIMBERLI R. H. TREADWELL, PhD
University of Connecticut

ROBERT R. WRIGHT, PhD
Brigham Young University-Idaho

EDITOR EMERITUS

MELANIE M. DOMENECH RODRIGUEZ, PhD
Utah State University

MANAGING EDITOR

BRADLEY CANNON

DESIGNER

TAYLOR BROWN-STONE

EDITORIAL ASSISTANT

REBECCA STEMPEL

ADVISORY EDITORIAL BOARD

GLENA ANDREWS, PhD
George Fox University

AZENETT A. GARZA CABALLERO, PhD
Weber State University

MARTIN DOWNING, PhD
NDRI

ALLEN H. KENISTON, PhD
University of Wisconsin-Eau Claire

MARIANNE E. LLOYD, PhD
Seton Hall University

DONELLE C. POSEY, PhD
Washington State University

PAUL SMITH, PhD
Alverno College

ABOUT PSI CHI

Psi Chi is the International Honor Society in Psychology, founded in 1929. Its mission: "recognizing and promoting excellence in the science and application of psychology." Membership is open to undergraduates, graduate students, faculty, and alumni making the study of psychology one of their major interests and who meet Psi Chi's minimum qualifications. Psi Chi is a member of the Association of College Honor Societies (ACHS), and is an affiliate of the American Psychological Association (APA) and the Association for Psychological Science (APS). Psi Chi's sister honor society is Psi Beta, the national honor society in psychology for community and junior colleges.

Psi Chi functions as a federation of chapters located at over 1,180 senior colleges and universities around the world. The Psi Chi Central Office is located in Chattanooga, Tennessee. A Board of Directors, composed of psychology faculty who are Psi Chi members and who are elected by the chapters, guides the affairs of the Organization and sets policy with the approval of the chapters.

Psi Chi membership provides two major opportunities. The first of these is academic recognition to all inductees by the mere fact of membership. The second is the opportunity of each of the Society's local chapters to nourish and stimulate the professional growth of all members through fellowship and activities designed to augment and enhance the regular curriculum. In addition, the Organization provides programs to help achieve these goals including conventions, research awards and grants competitions, and publication opportunities.

JOURNAL PURPOSE STATEMENT

The twofold purpose of the *Psi Chi Journal of Psychological Research* is to foster and reward the scholarly efforts of Psi Chi members, whether students or faculty, as well as to provide them with a valuable learning experience. The articles published in the *Journal* represent the work of undergraduates, graduate students, and faculty; the *Journal* is dedicated to increasing its scope and relevance by accepting and involving diverse people of varied racial, ethnic, gender identity, sexual orientation, religious, and social class backgrounds, among many others. To further support authors and enhance *Journal* visibility, articles are now available in the PsycINFO®, EBSCO®, Crossref®, and Google Scholar databases. In 2016, the *Journal* also became open access (i.e., free online to all readers and authors) to broaden the dissemination of research across the psychological science community.

JOURNAL INFORMATION

The *Psi Chi Journal of Psychological Research* (ISSN 2325-7342) is published quarterly in one volume per year by Psi Chi, Inc., The International Honor Society in Psychology. For more information, contact Psi Chi Central Office, Publication and Subscriptions, 651 East 4th Street, Suite 600, Chattanooga, TN 37403, (423) 756-2044. www.psichi.org; psichijournal@psichi.org.

Statements of fact or opinion are the responsibility of the authors alone and do not imply an opinion on the part of the officers or members of Psi Chi.

Advertisements that appear in *Psi Chi Journal* do not represent endorsement by Psi Chi of the advertiser or the product. Psi Chi neither endorses nor is responsible for the content of third-party promotions. Learn about advertising with Psi Chi at <http://www.psichi.org/Advertise>

COPYRIGHT

Permission must be obtained from Psi Chi to reprint or adapt a table or figure; to reprint quotations exceeding the limits of fair use from one source, and/or to reprint any portion of poetry, prose, or song lyrics. All persons wishing to utilize any of the above materials must write to the publisher to request nonexclusive world rights in all languages to use copyrighted material in the present article and in future print and nonprint editions. All persons wishing to utilize any of the above materials are responsible for obtaining proper permission from copyright owners and are liable for any and all licensing fees required. All persons wishing to utilize any of the above materials must include copies of all permissions and credit lines with the article submission.

Psi Chi
Journal of
**Psychological
Research**

WINTER 2020 | VOLUME 25 | ISSUE 4

- 304** **INVITED EDITORIAL: How to Become an Informed Research Consumer: Evaluating Journal Impact Factors and Their Alternatives**
Barbora Hoskova, Courtney A. Colgan, and Betty S. Lai
Department of Counseling, Developmental, and Educational Psychology,
Lynch School of Education and Human Development, Boston College
- 308** **Perceptions of Prosocial Behavior: Understanding the Self-Presentation of Hardships Incurred During Altruistic Acts**
Jennifer Q. Xue and Kosha D. Bramesfeld*
Department of Psychology, University of Toronto Scarborough
- 318** **Extracurricular Participation, Collective Self-Esteem, and Academic Outcomes Among College Students**
Casey A. Knifsend¹, Leigh A. Green², and Kathryn L. Clifford¹
¹Department of Psychology, California State University, Sacramento
²Public Health Survey Research Program, California State University, Sacramento
- 327** **Exploring the Complexity of Coping Strategies Among People of Different Racial Identities**
Brittney K. Kawakami, Sabrina G. Legaspi, Deirdre A. Katz*, and Sarina R. Saturn*
Department of Psychological Sciences, University of Portland
- 338** **Psychosocial Stress and Attitudes Toward Substance Use Among College Students: An Exploratory Study**
Dominique Kornely^{1,2} and Kameko Halfmann¹*
¹Department of Psychology, University of Wisconsin-Platteville
²Department of Psychology, University of Northern Iowa
- 349** **The Importance of Flexible Relational Boundaries: The Role of Connectedness in Self-Compassion and Compassion for Others**
Kaitlin S. Snyder and Andrew F. Luchner*
Department of Psychology, Rollins College
- 357** **The Effects of In-Group Identification on College Students' Stigmatizing Attitudes Toward Peers With Mental Illness**
Fayel Mustafiz and Dawn D. Dugan*
Department of Psychology, Hunter College, The City University of New York
- 368** **The Effect of Treatability Information and Genetic Explanations on Schizophrenia Stigma**
Noah Hinkley and Jordan Sparks Waldron*
Department of Psychological Sciences, University of Indianapolis

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

INVITED EDITORIAL: How to Become an Informed Research Consumer: Evaluating Journal Impact Factors and Their Alternatives

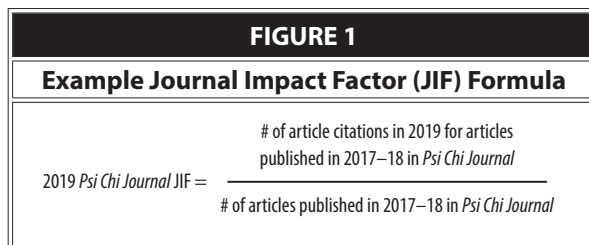
Barbora Hoskova, Courtney A. Colgan, and Betty S. Lai
Department of Counseling, Developmental, and Educational Psychology,
Lynch School of Education and Human Development, Boston College

Approximately two million scientific research articles are published in journals worldwide each year (Altbach & De Wit, 2018). As a result, identifying relevant and high-quality journal articles can be an overwhelming task. *Journal impact factors* are one metric for assessing the quality of research journals and articles. To help you become a more informed research consumer, this article will explore some common questions about journal impact factors. We begin with an explanation of journal impact factors and their origins, followed by some critiques of journal impact factors, alternative ways of assessing publication quality, and the applications of this information to your work in psychology.

What Are Journal Impact Factors?

Journal impact factors are the gold standard for assessing the impact of a given research journal (Amin & Mabe, 2000; Garfield, 2003; Greenwood, 2007). Other metrics, such as the SCImago Journal Rank Indicator, are also used (Falagas et al., 2008). However, journal impact factors remain the primary quantitative metric of journal quality (Amin & Mabe, 2000).

A journal impact factor tells you how many times per year, on average, articles in a given journal are cited. A journal impact factor of three, for instance, means that the articles published in that journal over the previous two years have been cited, on average, three times in a year. The formula to calculate a journal impact factor is illustrated in Figure 1, using *Psi Chi Journal* for the year 2019 as an example (Garfield, 2006; Kurmis, 2003; University of Michigan Library, 2019b).



What Is a “Good” Journal Impact Factor?

Unfortunately, there are no clear guidelines for what counts as a “good” journal impact factor. Within most fields, an impact factor of 10 or greater is considered “excellent” (Tetzner, 2019). In many fields, an impact factor of three or greater is considered “good” (Tetzner, 2019). However, it is important to remember that journal impact factors vary considerably across fields. Although no official guidance exists for the field of psychology, psychology journals with an impact factor higher than 2 are considered to have high impact (Wikia.org, 2020). Overall, the one core rule of thumb is as follows: the higher the journal impact factor, the higher the likelihood that articles in that journal are cited and read.

What Are the Origins of Journal Impact Factors?

Journal impact factors were initially conceptualized by two U.S. university librarians, Gross and Gross, in 1927 to determine what journals would be the most useful to keep in a college library (Archambault & Larivière, 2009). Their methodology was published and quickly spread among U.S. librarians and information scientists (Archambault & Larivière, 2009). It evolved with each subsequent iteration, until it became the basis for a formal metric for evaluating journals (Archambault & Larivière, 2009). Finally, in 1955, the journal impact factor formula was formally introduced by Garfield and Sher to enable a comparison of journals of any size and scope within a given field (Falagas et al., 2008; Garfield, 2006; Kurmis, 2003).

Garfield and Sher saw the original formula by Gross and Gross as an incomplete comparative measure because it relied solely on publication count to determine the journal impact factor (Garfield, 2006). To illustrate the shortcomings of this original formula, imagine that you want to compare a psychology journal that has published 10,000 articles in the past two years with a psychology journal that has published 2,000 articles in the same time period. The amount of publications

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

certainly tells you information about the size of the journal. However, how can you determine the reach and impact of each journal? Garfield and Sher addressed this by incorporating the number of article citations into the formula. They argued that an average number of article citations in a given year is a more accurate measure of journal impact than the total number of articles published (Garfield, 2006). Their journal impact factor formula therefore took into consideration both the number of published articles and the number of times those articles were cited (Garfield, 2006).

Over time, journal impact factors, using Garfield and Sher's formula, have become the gold standard for evaluating journal impact (Amin & Mabe, 2000). The *Science Citation Index* (created by Garfield and Sher) has become the basis for the annually updated *Journal Citation Reports*, a website run by Clarivate Analytics that publishes journal impact factors and other related metrics. This website can be accessed at <http://jcr.clarivate.com/JCRLandingPageAction.action>

Unfortunately, access to these reports is by subscription only. However, some colleges pay an institutional access fee for their faculty and student body. If you are able to access the website, you can search by journal of interest and browse its journal impact factor reports. This is the process that researchers usually engage in when deciding where to submit their research findings for publication. This information can also help you decide which journals you might want to subscribe to.

What Are the Critiques of Journal Impact Factors?

Despite the value of journal impact factors in assessing journal quality, several critiques of this metric are worth considering. To restate their importance, journal impact factors are widely used by researchers, funding bodies, and consumers of research as a metric for assessing journal and publication quality (Greenwood, 2007). Journal impact factors serve as a standardized criteria for evaluating individual, institutional, and journal performance (Amin & Mabe, 2000). However, many scholars question whether journal impact factors are truly objective. The answer, it turns out, is not a unanimous "yes." A consideration of the following critiques is therefore essential to interpreting journal impact factors.

Potential for Artificial Inflation

The current journal impact factor formula has loopholes that people can exploit to artificially increase the journal impact factor. One loophole

is journal self-citations (i.e., asking authors to cite articles published by the journal they are submitting to; Falagas et al., 2008; Kurmis, 2003). Two other major ways of artificially increasing a journal impact factor include (a) publishing a larger proportion of nonsource items (e.g., letters to editor), which do not count toward the total number of articles published (i.e., the denominator of the formula) but do count toward articles cited (i.e., the numerator of the formula), and (b) prioritizing articles for publication that have a higher likelihood of being cited (e.g., literature reviews; Kurmis, 2003). The formula for calculating journal impact factor is therefore susceptible to artificial inflation.

Other Limitations of the Metric

In addition to being vulnerable to artificial inflation, the journal impact factor formula has several further limitations that are important to consider. One of these limitations is the inability to compare journals across fields due to varying journal impact factor standards. The journal impact factor formula was created to compare the impact of journals *within the same field* (Garfield, 2006). It would be impossible to use this formula to compare journals across different subjects. Different fields have different publication and citation rates, both of which affect the journal impact factor (Amin & Mabe, 2000; Kurmis, 2003). For instance, the mean number of citations in the field of biochemistry is three times the mean citation number in the field of mathematics (Kurmis, 2003). Therefore, if we were to compare the journal impact factor of a biochemistry journal to that of a mathematics journal, we would likely find that the biochemistry journal has a higher journal impact factor. However, in this instance the metric can no longer indicate journal quality. It simply reflects the discrepancy in the mean number of citations between the two fields. Because of this, journal impact factors cannot be used to compare journals from different fields.

Other limitations to keep in mind when interpreting a journal impact factor include bias toward articles published in English, the availability and access of journals, the lack of precision of journal impact factor calculations, and the limited time span within which journal citations are analyzed (Amin & Mabe, 2000; Archambault & Larivière, 2009; Greenwood, 2007; Kurmis, 2003). Articles written in English and those published in easily accessible journals are cited more often (Kurmis, 2003). This higher rate of citations increases a journal's impact factor. However, rather than indicating

true journal impact or quality, the resulting higher journal impact factor reflects the higher accessibility of these articles (Kurmis, 2003). Furthermore, calculations of journal impact are often imprecise due to sampling error (Amin & Mabe, 2000; Greenwood, 2007), as well as the artificially chosen 2-year citation window (Archambault & Larivière, 2009). Given these limitations and the potential for artificial inflation, journal impact factors should always be interpreted through a critical lens.

Alternatives to Journal Impact Factors

Although widely used, journal impact factors are not infallible. They are also not always applicable to what you may be looking for. Below, we discuss two scenarios in which you might find alternate methods of assessing journal quality more applicable.

Identify Top Journals

Journal impact factors can guide your understanding of a journal's impact within its field. However, they do not offer the most efficient way of searching for high-quality journals within a given area. To efficiently find high-quality journals in your specific area of interest, you can explore the American Psychological Association (APA) division that you are interested in and find a list of the division's journals. For example, if you are interested in pediatric psychology, Division 54 is the Pediatric Psychology Division of APA. On Division 54's homepage, they list the journals that Division 54 publishes: *Journal of Pediatric Psychology* and *Clinical Practice in Pediatric Psychology* (APA, 2020). Journals of a given APA Division are the journals that members of that division receive. As such, these are typically the journals that division members choose to publish in. Therefore, these journals are able to pick and choose high-quality research for publication from all of their member submissions.

Identify Expert Authors

Another way to efficiently find high-quality journals within a given area is by doing a reverse search of authors in that area. Authors who produce high-quality research publications in an area are usually well-respected and highly cited. They tend

to submit to, and have their research published in, high-quality journals. Usually, these journals are their go-to's for publishing research. Therefore, if you know which authors are well-respected or most-cited in a given area, you can search by their names to see which journals they publish in. These journals will likely include some of the high-quality journals in your area of interest.

There are two main metrics that evaluate an individual author's impact. One measure is the *h-index*, which tells you the number of articles published by a given author that have been cited at least *h* times (University of Michigan Library, 2019a). For example, if an author has an h-index of 6, it means that 6 of the author's papers were cited at least 6 times. Keep in mind that this does not mean that the author has only published 6 papers, nor that all of the author's papers were cited at least 6 times. Overall, the higher the h-index, the higher the rate of author citation. As such, the h-index provides useful information about the rate at which an author's publications are cited.

The other measure of individual author impact is the *author impact factor*. This metric measures the average number of times an article published by a given author was cited in a given year (Icahn School of Medicine at Mount Sinai, 2020). The formula for calculating it is essentially the same as that for calculating the journal impact factor: you divide the total number of author citations in a year by the total number of articles the author published in the previous two years (Icahn School of Medicine at Mount Sinai, 2020). For instance, to calculate your own Author Impact Factor for the year 2019, you would use the formula in Figure 2.

How Can You Apply This Information in Your Work?

Despite ongoing debates about their utility, journal impact factors remain the gold standard for evaluating research and academic journals. As a consumer of research, it is recommended that you use journal impact factors to assess how well-respected a journal is in the field. However, it is also important to consider journal impact factors in light of their limitations. They are not infallible, objective measures of journal quality and are not always applicable to what you are looking for. In instances where you want to find high-quality journals in a specific area within psychology, for example, you may be better served by identifying the journals of the relevant APA Division or

FIGURE 2

Example Individual Impact Factor (JIF) Formula

$$\text{Your 2019 JIF} = \frac{\text{\# of article citations in 2019 for articles you published in 2017–18}}{\text{total \# of articles that you published in 2017–18}}$$

WINTER 2020


PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH


by reverse searching well-respected and -cited authors in a given area. You can also consult several author metrics to help you identify authors who are experts in a particular area. It is important to keep in mind that journal impact factors, like all metrics, have strengths and weaknesses and are best interpreted through a critical lens.

References

- Altbach, P. G., & De Wit, H. (2018). Too much academic research is being published. *International Higher Education*, 96, 2–3. <https://doi.org/10.6017/ihe.2019.96.10767>
- American Psychological Association. (2020). *Society of Pediatric Psychology*. <https://doi.org/10.1093/jpepsy/111.131>
- Amin, M., & Mabe, M. (2000). Impact factors: Use and abuse. *Perspectives in Publishing*.
- Archambault, É., & Larivière, V. (2009). History of the journal impact factor: Contingencies and consequences. *Scientometrics*, 79(3), 635–649. <https://doi.org/10.1007/s11192-007-2036-x>
- Falagas, M. E., Kouranos, V. D., Arencibia-Jorge, R., & Karageorgopoulos, D. E. (2008). Comparison of SCImago journal rank indicator with journal impact factor. *The FASEB Journal*, 22(8), 2623–2628. <https://doi.org/10.1096/fj.08-107938>
- Garfield, E. (2003). The meaning of the Impact Factor. *International Journal of Clinical and Health Psychology*, 3(2), 363–369. <http://www.garfield.library.upenn.edu/essays/v13p185y1990.pdf>
- Garfield, E. (2006). The history and meaning of the journal impact factor. *Journal of the American Medical Association*, 295(1), 90–93. <https://doi.org/10.1001/jama.295.1.90>
- Greenwood, D. C. (2007). Reliability of journal impact factor rankings. *BMC Medical Research Methodology*, 7(1), 48. <https://doi.org/10.1186/1471-2288-7-48>
- Icahn School of Medicine at Mount Sinai. (2020). *Personal Impact Factor and H-Index Calculations: Home*. <https://libguides.mssm.edu/individualimpactfactor>
- Kurmis, A. P. (2003). Understanding the limitations of the journal impact factor. *The Journal of Bone and Joint Surgery-American Volume*, 85(12), 2449–2454. <https://doi.org/10.2106/00004623-200312000-00028>
- Tetzner, R. (2019, July 26). *What is a good impact factor of a journal?* <https://www.proof-reading-service.com/en/blog/good-impact-factor-journal/>
- University of Michigan Library. (2019a). *Research impact metrics: Citation analysis - H-index*. <https://guides.lib.umich.edu/c.php?g=282982&p=1887449>
- University of Michigan Library. (2019b). *Research impact metrics: Citation analysis - Journal citation report*. <https://guides.lib.umich.edu/c.php?g=282982&p=3408326>
- Wikia.org. (2020). *Impact factors of psychology journals - Psychology Wiki*. http://psychology.wikia.com/wiki/Impact_factors_of_psychology_journals

Author Note. Barbora Hoskova  <https://orcid.org/0000-0002-8741-9626>

Courtney A. Colgan  <https://orcid.org/0000-0003-3649-2855>

Betty S. Lai  <https://orcid.org/0000-0003-4701-2706>

We have no known conflict of interest to disclose.

Research time for this article was supported by funds from the Buehler Sesquicentennial Assistant Professor Chair position at Boston College, and an early career research grant from the Gulf Research Program of the National Academies of Sciences, Engineering, and Medicine. Special thanks to *Psi Chi Journal* reviewers and editors for their support.

Correspondence concerning this article should be addressed to Barbora Hoskova, Department of Counseling, Developmental, and Educational Psychology, Lynch School of Education and Human Development, Boston College, 140 Commonwealth Ave, Chestnut Hill, MA, 02467. Email: hoskova@bc.edu

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Perceptions of Prosocial Behavior: Understanding the Self-Presentation of Hardships Incurred During Altruistic Acts

Jennifer Q. Xue and Kosha D. Bramesfeld*

Department of Psychology, University of Toronto Scarborough

ABSTRACT. Promoting one's altruistic motives may be an important means by which people can present themselves favorably to others. Still, promoting one's altruistic acts can be risky, as observers tend to be sensitive to factors that indicate that an altruistic act is motivated by self-interest, rather than genuine prosocial motives. Research focused on martyrdom (Olivola & Shafir, 2013; Schaumberg & Mullen, 2017) has suggested that highlighting the hardships involved in an altruistic act can enhance perceptions of prosocial motivation (the martyrdom hypothesis). However, research on bragging (Berman et al., 2015; Sezer et al., 2018) has suggest that first-person statements that highlight hardships may be perceived as self-motivated complaints, rather than genuine (the complaint hypothesis). The current study used a 2 (statement content: accomplishment versus hardship) x 2 (presentation strategy: direct statement or humblebrag) within-groups design ($N = 82$) to examine if self-promotional statements related to altruistic hardship increased or decreased perceptions of genuineness and prosocial motivation. Consistent with the complaint hypothesis, first-person statements focused on an altruistic hardship were perceived more as complaints ($p < .001$, $\eta^2 = .512$) and less as prosocial acts ($p = .001$, $\eta^2 = .132$) than first-person statements that focused on an altruistic accomplishment. These results suggest that there may be a penalty for emphasizing personal sacrifice as a means of self-promoting altruistic acts.

Keywords: prosocial behavior, altruism, bragging, self-promotion, sacrifice, hardship

Prosocial behaviors are designed to benefit others (Penner et al., 2005) and can also produce social benefits for one's self (Carlson & Zaki, 2018). For example, highlighting one's altruistic motives may be an important means by which people can present themselves as altruistic, moral, and competent to other individuals (Berman et al., 2015; Handy et al., 2010; Moon et al., 2017; Newman & Cain, 2014). For this reason, the self-promotion of one's altruistic accomplishments may be an important self-presentation strategy.

Importantly, however, promoting one's altruistic acts can involve risk (Berman et al., 2015).

Observers tend to be perceptive to factors that indicate that an altruistic act is motivated by self-interest, rather than by genuine prosocial motives (Berman et al., 2015; Carlson & Zaki, 2018; Newman & Cain, 2014). Research on the martyrdom effect (Olivola & Shafir, 2013; Schaumberg & Mullen, 2017) has suggested that a focus on personal hardship signals the prosocial nature of one's actions because it reduces perceptions that an



Open Data and Preregistration badges earned for transparent research practices. Data and preregistration are available at <https://osf.io/7yd6f/>

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

action was self-motivated (the martyrdom hypothesis). However, research on bragging (Berman et al., 2015; Sezer et al., 2018) has suggested that a focus on personal hardships can backfire if these statements are perceived as complaints, rather than genuine (the complaint hypothesis). In the current study, we examined if the style of a self-promotional statement (i.e., a direct statement versus a humblebrag) interacted with the content of that statement (i.e., focused on an accomplishment versus a hardship) to influence the degree to which the statement was perceived as being genuine and driven by prosocial motivation.

Prosocial Motivation

Prosocial behavior entails a broad category of actions that are beneficial to others (Penner et al., 2005), including altruistic acts such as volunteering at a charity or donating money to a fund-raiser. Perceptions of prosocial behavior are often characterized in terms of dimensions of altruism, empathy, and perceived likelihood of future prosocial behavior (Lin-Healy & Small, 2012). Although prosocial behaviors are designed to benefit others, these actions can also produce important social benefits for one's self (Carlson & Zaki, 2018). For example, existing research has found that people involved in prosocial actions were perceived to be more altruistic, likeable, and morally good, relative to people who were not engaged in prosocial actions (Berman et al., 2015; Moon et al., 2017; Newman & Cain, 2014). Leiro and Zwolinski (2014) have also found that altruistic acts strengthen social bonds with others. Furthermore, Hand et al. (2010) reported that altruistic acts signal competence, experience, and leadership skills.

These social benefits may motivate people to share information about their prosocial acts with others. Self-presentation is a crucial interpersonal skill that aids individuals in adapting to various audiences and social rules (Lafrenière et al., 2016). The rapid growth of social media use (Perrin, 2015) has spurred an interest in examining the factors that influence self-presentation (see, for examples, Buffardi & Campbell, 2008; Leighton et al., 2018; Schau & Gilly, 2003). Self-presentation efforts are typically motivated by one of two goals: to be liked or to appear competent (Jones & Pittman, 1982). As reviewed earlier, sharing information about altruistic acts can achieve both goals. Indeed, individuals and large groups of people have been found to promote prosocial behavior with the intent of appearing altruistic, charitable, morally good,

and competent (Berman et al., 2015; Handy et al., 2010; Newman & Cain, 2014; Scopelliti et al., 2015). Still, as noted by Berman et al. (2015), there is a risk of negative evaluation when promoting one's self.

Individuals tend to hold strong beliefs about the types of actions that constitute altruism (Howard et al., 2011). Consequently, people tend to make inferences about ulterior motives when judging prosocial behaviors (Ham & Vonk, 2011). Research has shown that clues in the environment suggesting that a person was motivated to engage in an altruistic act for self-interested reasons or for personal benefit affects judgements of altruism, moral character, and likeability (Carlson & Zaki, 2018; Newman & Cain, 2011). Indeed, in the context of these research studies, performing an altruistic act for the wrong reasons was perceived to be even worse than not doing a charitable act at all (Carlson & Zaki, 2018; Newman & Cain, 2011).

As noted by Berman et al. (2015), this creates an interesting dilemma. Directly bragging about a prosocial accomplishment may be an effective way of making one's good deeds known to others (Berman et al., 2015). However, bragging about an accomplishment can also raise doubts about the motivations for engaging in the prosocial act (Berman et al., 2015; Sezer et al., 2018). Berman et al. (2015) noted that one approach that people may use to address this dilemma is to highlight the hardships associated with carrying out a prosocial act. In the subsequent sections of this article, we review evidence that has suggested potential advantages and disadvantages of using personal hardship as a means to enhance perceptions of prosocial motivation.

Potential Advantages of Highlighting Personal Hardship

Research on the martyrdom effect has suggested that highlighting hardship and personal sacrifice may be an effective means for enhancing perceptions of prosocial motivation. For example, Hardy and Van Vugt (2006) found that, when individuals willingly endured hardships for collective goals, observers perceived them as more trustworthy, valuable, and admirable. Loewenstein and Small (2007) also found that people expressed more generosity and empathy toward individuals who experienced suffering, particularly when the event was uncontrollable or unexpected. Based on these prior findings, Olivola and Shafir (2013) hypothesized that emphasizing martyrdom—"the act of suffering for a cause" (p. 92)—would be effective in enhancing perceptions of prosocial motivation

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

because sacrifice would signal to others that an undertaking was important enough to be worth experiencing undesired pain and suffering.

To examine this hypothesis, Olivola and Shafir (2013) constructed contexts in which the psychological cost of donating was low (requiring little effort and no pain) or high (requiring physical effort and pain) and measured participants' willingness to donate money to the cause. Across five experiments, they found that, the more a participant anticipated that their contributions would be painful and require effort the more willing they were to engage in that prosocial act. The effects were explained, at least in part, by the fact that the martyrdom conditions were perceived as more meaningful than the low-effort/low-pain control conditions.

Schaumberg and Mullen (2017) similarly found that hardship influenced the degree to which external observers judged an act as altruistic. Specifically, Schaumberg and Mullen used a vignette paradigm to describe scenarios in which an individual suffered from some kind of incidental hardship (e.g., getting stung by a bee) after performing an act of good (e.g., planting trees). When participants learned about the incidental hardship, they were more likely to perceive the prosocial agent as being greater in moral character than when they read about the same action without the hardship. These findings indicated that perceptions of prosocial motivation could be increased by highlighting personal sacrifice (Olivola & Shafir, 2013; Schaumberg & Mullen, 2017).

Nevertheless, it is important to recognize that research findings on the martyrdom effect have been derived from experimental settings where the participants learned about a hardship through a neutral third party, devoid of a specific self-presentation technique. For example, in Schaumberg and Mullen's (2017) research, the following scenario was presented to participants for evaluation: "At the end of the day, right as Geoff had finished planting the last tree, he got stung by a bee. His arm swelled from the bee sting" (p. 88). It is important to consider what the potential differences might be if the hardship were presented within the context of an explicit, first-person statement of hardship: "I spent the weekend planting trees ... I now have over 20 mosquito bites!" In the next section of the article, we review evidence related to humblebragging that has suggested that, contrary to the martyrdom hypothesis, first-person efforts to highlight personal hardship may not always work in a person's favor.

Potential Disadvantages of Highlighting Personal Hardship

Previous research on the martyrdom effect has focused on information gained from third-person narratives. Increasingly, with the rapid growth of social media use (Perrin, 2015), people are sharing their accomplishments in the form of first-person narratives (Schau & Gilly, 2003; Sezer et al., 2018). Berman et al. (2015) has found that there are risks to using first-person narratives to brag about one's own accomplishments. To our knowledge, no prior research has directly examined how people might respond to self-promotional statements that focus on altruistic hardships. With that said, research related to humblebragging has provided some context on which to theorize about these effects. We first define what is meant by humblebragging and then discuss the findings.

Among the various tactics of impression management, directly bragging about an accomplishment is a common means by which someone shares their personal accomplishments with others (Berman et al., 2015). However, bragging about good deeds has been found to elicit lower ratings of altruism than not bragging at all because it raises the possibility that the act was carried out for self-interested reasons (Berman et al., 2015). Furthermore, Scopelliti et al. (2015) have noted that individuals who openly bragged were assumed to be braggarts, which decreased positive reactions from observers, such as feeling happy for them, and increased negative emotions from observers, such as feelings of annoyance. As aforementioned, one potential approach that people could use to address this dilemma would be to highlight the hardships and personal sacrifices associated with carrying out a prosocial act (Berman et al., 2015).

Humblebragging provides a mechanism for people to emphasize the hardships they experienced while carrying out prosocial acts. Humblebragging is a unique self-presentation technique that attempts to convey both competency and likability. The act of humblebragging—"bragging masked by either a complaint or humility" (Sezer et al., 2018, p. 52)—is pervasive in everyday life. For example, someone might announce to their coworkers how exhausted they are from working extra hours over the weekend to help start a new fund-raiser. Although the approach is an attempt to highlight competence with a brag and elicit liking through added humility, Sezer et al. (2018) have suggested that humblebragging often fails to achieve either goal. In their research, they found

that individuals who highlighted a hardship in an attempt to appear humble were perceived as complainers. In addition, individuals who humblebragged were viewed as less likeable and less competent than those who bragged more directly. Perceived sincerity appeared to be implicated in this effect. Both humblebrags and direct brags were equally likely to be perceived as efforts to brag, but people who humblebragged were viewed as more performative in trying to appear humble, relative to those who directly bragged. These findings suggested that highlighting hardships may not always be an effective strategy for promoting prosocial motives. They also suggested that the way in which a person brags (i.e., a direct statement versus a humblebrag) could influence perceptions of prosocial motivation.

Overview of the Current Study

As indicated in our review of the literature, prosocial actors are faced with a dilemma in terms of how to communicate their actions. Directly telling people about a prosocial accomplishment may be an effective way of making one's good deeds known to others (Berman et al., 2015). However, if the statement comes off as bragging, complaining, or insincere, this can hurt the perceptions of the prosocial actor (Sezer et al., 2018). The existing research raised two potential possibilities when it came to the presentation of information about a personal hardship. On the one hand, research focused on the martyrdom effect (Olivola & Shafir, 2013; Schaumberg & Mullen, 2017) has suggested that presenting information about personal hardship could increase perceptions of prosocial motivation, as observers find prosocial acts that are accompanied with hardship to be more genuine and more altruistic than acts unaccompanied with hardship (the martyrdom hypothesis). On the other hand, research on bragging (Berman et al., 2015; Sezer et al., 2018) has suggested that attempts to appear humble by talking about hardship could backfire if those attempts come off as complaining, rather than sincere (the complaint hypothesis).

Given these contradictory hypotheses, our study sought to investigate if the presentational style of a self-promotional statement (i.e., a direct statement versus a humblebrag) would interact with the content of the statement (i.e., focused on an accomplishment versus a hardship) to impact perceptions of genuineness and prosocial motivation. We predicted that an interaction would occur. Consistent with the martyrdom hypothesis, we

predicted that, when a direct statement was used to discuss a hardship, the presentation of the hardship would increase perceptions of prosocial motivation relative to when the direct statement focused on an accomplishment. However, consistent with the complaint hypothesis, we predicted that, when statements of hardship were made within the context of a humblebrag, these statements would be perceived as complaints rather than genuine statements of self-sacrifice, which would decrease perceptions of prosocial motivation relative to when the humblebrag focused on an accomplishment.

Method

The procedures and methods of the present experimental study were developed by undergraduate students who were enrolled in an advanced undergraduate laboratory course focused on social psychological research methods (total enrollment: 26 students). With the instructor's guidance, all of the students in the course worked together to identify and create the experimental manipulations and outcome measures and to analyze the data. The study description, planned recruitment method, data exclusion criterion, survey questions, and data analysis plan were preregistered on the Open Science Framework (<https://osf.io/7yd6f/>) prior to the analysis of our data. We also received research ethics approval to publicly archive the data and SPSS syntax files used for the analyses.

Participants

Based on a power analysis, we aimed to recruit at least 50 to 65 participants to detect a medium sized effect ($\eta^2 = .06$) at 80% power with a significance level of $\alpha = .05$. After receiving Institutional Research Ethics Board approval, we used a convenience sampling method to recruit participants via social media, email, course announcements, and research recruitment websites. After applying preregistered exclusion criterion, the final sample included 82 participants, $M_{age} = 27.9$; $SD = 12.49$ (68% women; 68% full-time students; 77% from North America, 12% from Asia, 7% from Europe, and 1% from Africa). All participants responded to the survey in English.

Design and Procedure

Using a research design similar in nature to the one used by Carlson and Zaki (2018), we manipulated two independent variables within the context of a 2 (statement content: Accomplishment x Hardship) x 2 (presentation style: Direct

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Statement x Humblebrag) within-groups design that also included a fifth control condition for comparison. To create the experimental conditions, we generated five altruistic scenarios and used those scenarios to manipulate whether a self-promotional statement about an altruistic act (“I spent the weekend planting trees.”) emphasized an accomplishment (“I planted over 20 rows of park forestry!”) or a hardship (“I now have over 20 mosquito bites!”).

We also manipulated whether the information was presented as a direct statement or a humblebrag. Similar to Sezer et al. (2018), we operationalized a direct statement as a straightforward statement about an act, without any attempt to appear humble. The examples presented in the prior paragraph represented direct statements. In the humblebrag conditions, we used language similar to that used by Sezer et al. to convey humility through statements of disbelief, humor, and/or claims of something being “worth it” within the context of the accomplishment/hardship. For example, “Planting trees to protect the environment over the weekend was definitely worth more than the [20 rows of park forestry that I saved/20 mosquito bites that I got]!”

Four of the statements represented the four conditions of our study: a direct statement about an accomplishment, a direct statement about a hardship, a humblebrag about an accomplishment, and a humblebrag about a hardship. The fifth statement reflected a control statement that included a factual statement about the altruistic act, without any mention of a personal accomplishment or hardship, nor any attempts at appearing humble (e.g., “I spent the weekend planting trees”).

Because it would be very transparent for participants to read five iterations of the same scenario, we created five different altruistic scenarios to manipulate the levels of our independent variables. These scenarios focused on planting trees over the summer, cleaning up beach litter, volunteering at a walk to raise money and awareness for cancer treatments, offering pro-bono law services, and donating money to a soup kitchen. For each scenario, we created a baseline control statement with appropriate wording to ensure consistency with each of our experimental conditions (see Appendix A for the wording of each scenario).

A 5 x 5 Latin Square was used to ensure that every participant was exposed to each of the five conditions of the study spread randomly across the five scenarios. Refer to Appendix B for the condition orders. Participants were randomly assigned to one

of the five order combinations. Qualtrics was then used to present the five social media statements of that combination in a randomized order. Consistent with a repeated-measures design, participants viewed each social media statement one at a time. After reading each statement, participants rated 25 items on a seven-point Likert-type scale (e.g., *strongly disagree* to *strongly agree*). Five of these items were used as manipulation and control checks. The other 20 items were used to measure our outcome variables (genuineness and prosocial motivation).

Manipulation and Control Checks

Statement Content

To confirm the effectiveness of our manipulation of the content of the statements, we created two items that asked participants to rate their agreement that the statement focused on an accomplishment versus a personal sacrifice. As expected, the items were only moderately correlated with one another across conditions (r 's = .16 to .40). As such, we analyzed these items separately within the context of a multivariate analysis.

Presentation Style

We used an approach similar to the one used by Sezer et al. (2015) to assess the extent to which participants perceived the statement to be self-promotional, bragging, or humble. The first two items were included as a control check to ensure that all of the statements in the experimental conditions were perceived as self-promotional brags, relative to the control condition. The third item was included as a manipulation check to confirm that the statements in the humblebrag conditions were perceived as attempts to be humble, relative to the direct brag conditions.

Outcome Measures

Genuineness

We adapted two items from Sezer et al.'s (2015) study to examine the extent to which participants perceived the statement to be about a complaint versus sincere. In their analyses, Sezer et al. (2015) analyzed data related to self-promotion, bragging, being humble, complaining, and sincerity as separate single-item outcome measures. Prior to analyzing our data, we conducted preliminary analyses to examine if any of these items could be simplified into composite scores. Across conditions, the items were only weakly to moderately correlated with one another (r s = [.01 to .64]). As such, we chose to follow Sezer et al.'s statistical procedure and analyze these items separately.

Prosocial Motivation

We used 12 items created by Berman et al. (2015) to measure perceptions of moral goodness (moral, nice, good, sincere, caring, immoral, mean, bad, insincere, uncaring, altruistic, selfish). Additionally, we created two items that assessed the extent to which the post reflected an altruistic act and four items that assessed the extent to which the poster was likely to behave altruistically again in the future (see Lin-Healy & Small, 2012, for a similar approach to measuring altruism). In our preregistered data analysis plan, we labeled these items along two dimensions: moral goodness and altruism. However, similar to Berman et al., Newman & Cain (2018), and Lin-Healy & Small (2012), we found that the moral goodness items and altruism items were all highly correlated with one another. As such, we averaged together all 18 items to create measures of perceived prosocial motivation (Cronbach's $\alpha = .90$ to $.95$ across the five conditions).

Results

Preliminary Analyses

An examination of the histograms, Q-Q plots, and box plots of our outcome variables revealed that outcome variables were mostly normally distributed and not influenced by outliers. A sensitivity analysis (80% power, $\alpha = .05$) indicated that our sample size was large enough to detect effects of $\eta^2 \geq .03$. Given this, we considered a finding statistically significant only if $p < .05$ and $\eta^2 \geq .03$. All of our data were analyzed using a 2 (statement content: Hardship x Accomplishment) x 2 (presentation style: Direct Statement x Humblebrag) repeated-measures analysis of variance (ANOVA). Follow-up analyses were used to compare the experimental conditions to the control condition. The means and standard deviations from our analyses are summarized in Table 1.

Manipulation and Control Checks

Statement Content

We used a multivariate repeated-measures ANOVA to confirm the effectiveness of our content manipulation across two measurements: accomplishment and hardship. The accomplishment conditions were perceived to be more about an accomplishment ($M = 5.36$, $SD = 1.64$) than the hardship conditions ($M = 4.89$, $SD = 1.66$), $F(1, 78) = 7.94$, $p = .006$, $\eta^2 = .092$. Likewise, the hardship conditions were perceived to be more about a personal sacrifice ($M = 4.80$, $SD = 1.80$) than the accomplishment conditions ($M = 4.10$, $SD = 1.73$), $F(1, 78) = 13.56$, $p < .001$, $\eta^2 = .148$. Presentation style did not influence perceptions of

accomplishment (multivariate effect, $F(2, 77) = 0.23$, $p = .797$, $\eta^2 = .006$, nor was there a significant interaction between statement content and presentation style (multivariate effect, $F[2, 77] = 2.04$, $p = .137$, $\eta^2 = .050$).

Presentation Style

A multivariate repeated-measures ANOVA was used to analyze the ratings related to self-promotion, bragging, being humble, complaining, and sincerity. Bragging and self-promotion served as control checks. The item related to being humble served as a manipulation check. The last two items, complaining and sincerity, were used to test hypotheses about the perceived genuineness of the posts across experimental conditions.

We were successful in holding perceptions of bragging and self-promotion constant across the statements, as there were no significant main effects or interactions that emerged on these two variables, $ps > .15$, $\eta^2s < .03$. We were also effective in manipulating differences between the direct statement and humblebrag conditions. The humblebrag statements ($M = 4.48$, $SD = 1.85$) were perceived as more performative in trying to appear humble than the direct statements ($M = 3.96$, $SD = 1.84$), $F(1, 73) = 7.62$, $p = .007$, $\eta^2 = .095$. There was no main effect of statement content, $F(1, 73) = 0.18$, $p = .677$, $\eta^2 = .002$, nor was there an interaction between content and presentation style, $F(1, 73) = 0.28$, $p = .600$, $\eta^2 = .004$.

TABLE 1

Mean Perceptions of Statement Type, Self-Promotion, Genuineness, and Prosocial Motivation by Experimental Coalition by Experimental Condition

Variable	Direct Ac	Direct Ha	Humble Ac	Humble Ha	Control
Statement type					
Accomplishment*	5.37(1.73) _a	4.99(1.68) _{ab}	5.35(1.54) _a	4.78(1.64) _b	5.46(1.60) _a
Hardship*	3.96(1.79) _a	4.99(1.71) _b	4.24(1.66) _a	4.61(1.88) _{ab}	4.44(1.72) _{ab}
Self-presentation					
Bragging	5.26(1.67)	5.03(1.60)	5.12(1.73)	4.88(1.52)	4.91(1.57)
Self-promotion	5.20(1.72)	5.22(1.63)	4.95(1.70)	5.09(1.53)	5.01(1.56)
Humble*	3.96(1.85) _a	3.95(1.82) _a	4.39(1.91) _b	4.57(1.78) _b	3.84(1.67) _a
Genuineness					
Complaint*	2.43(1.50) _a	4.89(1.66) _d	3.34(1.84) _b	4.31(1.79) _c	2.45(1.30) _a
Sincere	4.57(1.65)	4.42(1.64)	4.41(1.58)	4.05(1.84)	4.70(1.51)
Prosocial motivation*					
	4.95(0.81) _a	4.50(1.01) _b	4.74(0.91) _{ab}	4.51(1.01) _b	4.87(0.86) _a

Note. Values are arranged as $M(SD)$. Direct Ac = Direct statement about accomplishment; Direct Ha = Direct statement about hardship; Humble Ac = Humblebrag about accomplishment; Humble Ha = Humblebrag about hardship. Different subscripts in a row indicate statistically significant mean differences, $p < .05$. * $p < .05$.

Hypothesis Tests

Genuineness

We did not detect any main effects or interactions across conditions based on the perceived sincerity of the statements, $ps > .20$, $\eta^2s < .03$. A significant main effect of statement content emerged for perceptions of complaining, $F(1, 73) = 76.67$, $p < .001$, $\eta^2 = .512$. Statements about a hardship ($M = 4.60$, $SD = 1.73$) were rated as complaints significantly more than statements about an accomplishment ($M = 2.89$, $SD = 1.67$). Furthermore, this main effect was qualified by a significant interaction between statement content and presentation style, $F(1, 73) = 17.49$, $p < .001$, $\eta^2 = .193$.

In the accomplishment conditions, the humblebrags ($M = 3.34$, $SD = 1.84$) were perceived as complaining more than the direct statements ($M = 2.43$, $SD = 1.50$), $p = .001$, $\eta^2 = .172$, and the control statements ($M = 2.45$, $SD = 1.30$), $p < .001$, $\eta^2 = .166$. The direct statement and control statement did not differ, $p = .94$, $\eta^2 = .001$. In contrast,

in the hardship conditions, it was the direct statements about hardship ($M = 4.89$, $SD = 1.66$), not the humblebrags ($M = 4.31$, $SD = 1.79$), that were perceived as being more about a complaint, $p = .044$, $\eta^2 = .039$. Please refer to Figure 1 for an illustration of this interaction. There was no main effect of presentation style for perceptions of complaining, $F(1, 73) = 0.66$, $p = .420$, $\eta^2 = .009$.

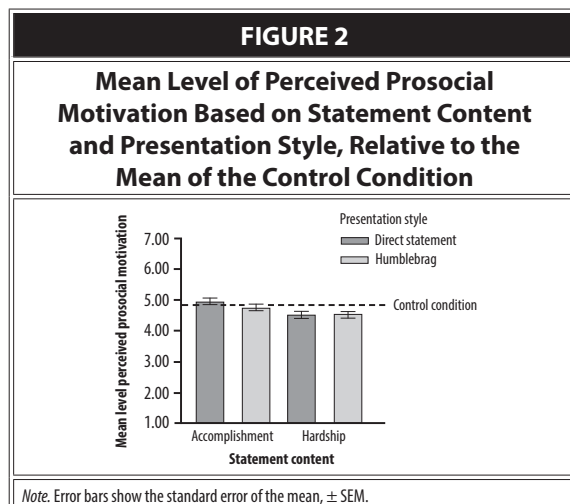
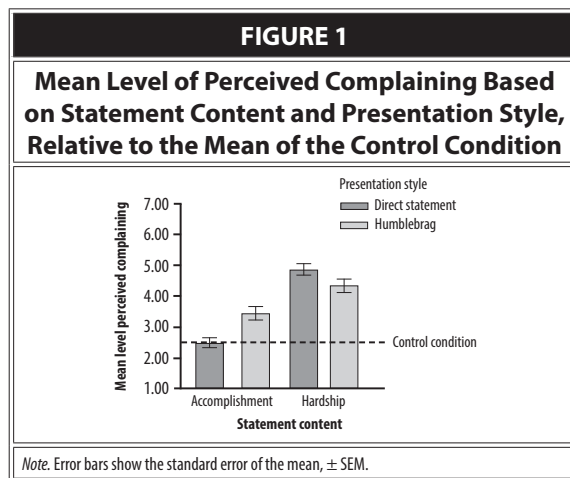
Prosocial Motivation

Lastly, we examined if perceptions of prosocial motivation varied across conditions. There was a main effect of statement content, $F(1, 81) = 12.27$, $p = .001$, $\eta^2 = .132$. Statements focused on a hardship ($M = 4.51$, $SD = 1.01$) were perceived as less prosocial than statements focused on an altruistic accomplishment ($M = 4.85$, $SD = 0.86$). See Figure 2 for an illustration of this main effect. We were not able to detect a significant main effect of presentation style, $F(1, 81) = 0.89$, $p = .347$, $\eta^2 = .011$, nor were we able to detect a significant interaction between the statement content and the presentation style, $F(1, 81) = 1.60$, $p = .210$, $\eta^2 = .019$.

Discussion

Research focused on martyrdom (Olivola & Shafir, 2013; Schaumberg & Mullen, 2017) has suggested that altruistic acts coupled with hardship are perceived more favorably than acts of altruism that do not include a hardship (i.e., the martyrdom hypothesis). In contrast, Sezer et al.'s (2018) research on bragging has suggested that attempts to appear humble by talking about hardships could be perceived as complaining (i.e., the complaint hypothesis). Consistent with the complaint hypothesis, and contrary to the martyrdom hypothesis, we found that self-promotional statements about an altruistic act diminished perceptions of prosocial motivation. We had anticipated that these results would be particularly pronounced in the humblebrag condition, relative to the direct brag condition. Instead, we found that the content of the statement and presentation style did not interact to influence perceptions of prosocial motivation. Furthermore, content of the statement and presentation style did interact to influence perceptions of complaining, but in the opposite direction to what we had predicted. Direct statements of hardship, rather than humble statements of hardship, resulted in greater perceptions of complaining.

Although our main findings were unexpected, other aspects of our study reinforced prior research findings. For example, Sezer et al.'s (2018) research compared direct brags versus humblebrags across a wide range of personal accomplishments. The scenarios in our accomplishment conditions were



similar to the scenarios presented in this prior research, although we focused exclusively on altruistic accomplishments. Consistent with Sezer et al.'s results, we found that, within the accomplishment conditions, humblebrags were perceived as being more transparent in their attempts to appear humble and also to be more about complaints than direct brags. These findings are consistent with Sezer et al.'s results and thus serve to reinforce and validate prior research findings.

The results of our study also suggested areas for future research. One strength of our study design is the emphasis on altruistic hardships (relative to Sezer et al., 2015, who focused only on accomplishments). Within our study, the pattern of findings for the hardship conditions differed from the findings in the accomplishment conditions. Indeed, when it came to perceptions of complaining, it was the direct statements about hardship, rather than the humblebrags about hardship, that were perceived to exhibit the greatest degree of complaining. These results are important because they indicate that humblebrags may not always negatively affect self-presentation. Given these findings, we suggest that future research seek to identify the moderating contexts in which humblebrags might help or hurt perceptions relative to a direct statement.

One interesting divergence that occurred between our results and that of Sezer et al.'s findings (2018) arose in relation to the results related to sincerity. Across five different studies, Sezer et al. consistently found humblebrags to be perceived as less sincere than direct brags. In contrast, we did not find that humblebragging was rated as less sincere than direct brags in either of the content conditions. It is possible that sincerity did not differ in our study because of our focus on altruistic acts. Berman et al. (2015) found that perceptions of self-promotional statements related to altruism were not always perceived the same as self-promotional statements related to other personal accomplishments. Relative to Sezer et al., who focused on general accomplishments, there might have been something distinctive about our focus on altruistic acts that resulted in all of the self-promotional statements being perceived as somewhat sincere in our study, regardless of experimental condition. If true, then perceptions of when and whether a brag is likely to be perceived as sincere could be an area for additional research.

Our investigation also contributes to the scientific understanding of the martyrdom effect. Contrary to research that has found the presentation of information about a hardship increased perceptions of altruism (Olivola & Shafir, 2013; Schaumberg &

Mullen, 2017), we found that first-person statements focused on a hardship were perceived as less genuine and less prosocial than control statements. We believe that our results occurred due to the use of first-person statements, which shifted the dynamics of the evaluation context. Our findings suggested that perceptions about an act of martyrdom may be impacted by the source of that information. Because the first-person narrative was held as a constant in our study and was not compared to information coming from a third-party source, we cannot directly test this possibility within our study. We encourage future researchers to directly manipulate and compare first-person narratives to third-person narratives in order to more thoroughly examine if the martyrdom effect generalizes to self-presentation contexts.

Despite the potential advantages of our research findings, we must acknowledge several design limitations. In our attempt to keep our survey materials a reasonable length, we included several single-item measures to use as manipulation and control checks. We also included only two items to measure perceptions of genuineness. Our decision to do so was guided, in part, by a similar approach used by Sezer et al. (2015) to measure these variables. Still, a reliance on single-item indicators is not ideal. Future research on this topic should use more reliable and valid measures to help rule out the possibility that the results were influenced by measurement error.

We must also acknowledge the relatively small size of our sample. The present study enrolled fewer research participants than studies by Sezer et al. (2018; N s = 150 to 300 participants) and Berman et al. (2015; N s = 148 to 400 participants). Because we knew that we would have access to a smaller participant pool than other research teams, we took several steps to increase the statistical validity of our data. First, we utilized a repeated-measures design, instead of a between-groups design, to minimize the number of participants needed to detect meaningful effects. We also conducted a power analysis prior to collecting our data to ensure that we recruited a sample large enough to detect the expected effects. Our power analysis indicated that we needed 50 to 65 participants to detect the effects we anticipated. We exceeded this number by recruiting 82 research participants. Additionally, once we knew our final sample size, we conducted a sensitivity analysis in order to gain a better assessment of the effect sizes that we could reliably detect. We analyzed our hypotheses in relation to this assessment. We encourage future researchers to replicate our effects to further establish the statistical validity of the finding.

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH


Finally, we must acknowledge that our use of a convenience sample limits the generalizability of our results. Although our sample included participants from around the world, most of our participants came from North America and Europe. It is possible that, if this study were to be conducted in a non-Western context, the results would not generalize due to differences in cultural expectations. For example, individuals from East Asia are found to be more modest and less likely to excessively promote themselves than Americans (Cai et al., 2007). Furthermore, external validity may be limited within any cultural context for which strong self-exuberance or bragging of any form is considered inappropriate. Future research is needed to examine if there may be social or cultural constraints that influence self-promotional statements about altruism.

In summary, our study further extends the related literature that highlight the complexities of talking about one's good deeds. Although bragging about a prosocial accomplishment may be an effective way of making one's good deeds known to others (Berman et al., 2015), the act can also raise doubts concerning the motivations for engaging in the prosocial act (Berman et al., 2015; Sezer et al., 2018). Research on the martyrdom effect has suggested that prosocial acts were viewed as more altruistic when they required personal sacrifice (Olivola & Shafir, 2013; Schaumberg & Mullen, 2017). Consequently, people may be tempted to divulge their hardship and struggles as a way to signal prosocial motivation (Berman et al., 2015). Our research findings suggest that this may be ill-advised. In our study, first-person statements about personal hardship were more likely to be perceived as a complaint and less likely to be perceived as prosocial. Consequently, our results suggest that, contrary to the martyrdom effect (Olivola & Shafir, 2013; Schaumberg & Mullen, 2017), when it comes to self-promotional contexts, focusing on the personal sacrifices associated with altruistic acts could lead to the possibility of penalty.

References

- Berman, J. Z., Levine, E. E., Barasch, A., & Small, D. E. (2015). The braggart's dilemma: On the social rewards and penalties of advertising prosocial behavior. *Journal of Marketing Research*, 52(1), 90-104. <http://dx.doi.org/10.1509/jmr.14.0002>
- Buffardi, L. E., & Campbell, W. K. (2008). Narcissism and social networking web sites. *Personality and Social Psychology Bulletin*, 34(10), 1303-1314. <http://dx.doi.org/10.1177/0146167208320061>
- Cai, H., Brown, J. D., Deng, C., & Oakes, M. A. (2007). Self-esteem and culture: Differences in cognitive evaluations for affective self-regard? *Asian Journal of Social Psychology*, 10(3), 162-170. <http://dx.doi.org/10.1111/j.1467-839X.2007.00222.x>
- Carlson, R. W., & Zaki, J. (2018). Good deeds gone bad: Lay theories of altruism and selfishness. *Journal of Experimental Social Psychology*, 75, 36-40. <http://dx.doi.org/10.1016/j.jesp.2017.11.005>
- Ham, J., & Vonk, R. (2011). Impressions of impression management: Evidence of spontaneous suspicion of ulterior motivation. *Journal of Experimental Social Psychology*, 47(2), 466-471. <http://dx.doi.org/10.1016/j.jesp.2010.12.008>
- Handy, F., Cnaan, R. A., Hustinx, L., Kang, C., Brudney, J. L., Haski-Leventhal, D., Holmes, K., Meijs, L. C. P. M., Pessi Birgitta, A., Ranade, Bhagyashree, Yamauchi, N., & Yamauchi, N. (2010). A cross-cultural examination of student volunteering: Is it all about résumé building? *Nonprofit and Voluntary Sector Quarterly*, 39(3), 498-523. <http://dx.doi.org/10.1177/0899764009344353>
- Hardy, C. L., & Van Vugt, M. (2006). Nice guys finish first: The competitive altruism hypothesis. *Personality and Social Psychology Bulletin*, 32(10), 1402-1413. <http://dx.doi.org/10.1177/0146167206291006>
- Howard, A., Nelson, D., & Sleigh, M. (2011). Predictors of beliefs about altruism and willingness to behave altruistically. *Psi Chi Journal of Psychological Research*, 16(4), 168-174. <https://doi.org/10.24839/1089-4136.JN16.4.168>
- Jones, E. E., & Pittman, T. S. (1982). Toward a general theory of strategic self-presentation. In J. Suls (Ed.), *Psychological perspectives on the self* (pp. 231-262). Erlbaum.
- Lafrenière, M.-A. K., Sedikides, C., Van Tongeren, D. R., & Davis, J. L. (2016). On the perceived intentionality of self-enhancement. *The Journal of Social Psychology*, 156(1), 28-42. <http://dx.doi.org/10.1080/00224545.2015.1041447>
- Leighton, D. C., Legate, N., LePine, S., Anderson, S. F., & Grahe, J. (2018). Self-esteem, self-disclosure, self-expression, and connection on Facebook: A collaborative replication meta-analysis. *Psi Chi Journal of Psychological Research*, 23(2), 98-109. <http://dx.doi.org/10.24839/2325-7342.JN23.2.98>
- Leiro, J., & Zwolinski, J. (2014). How are prosocial responses to ostracism related to thwarted psychological needs? *Psi Chi Journal of Psychological Research*, 19(2), 76-84. <https://doi.org/10.24839/2164-8204.JN19.2.76>
- Lin-Healy, F., & Small, D. A. (2012). Cheapened altruism: Discounting personally affected prosocial actors. *Organizational Behavior and Human Decision Processes*, 117(2), 269-274. <http://dx.doi.org/10.1016/j.obhdp.2011.11.006>
- Loewenstein, G., & Small, D. A. (2007). The scarecrow and the tin man: The vicissitudes of human sympathy and caring. *Review of General Psychology*, 11(2), 112-126. <http://dx.doi.org/10.1037/1089-2680.11.2.112>
- Moon, J. W., Wright, R. R., Broadbent, C. S., & Robinson, E. D. (2017). 'The measure ye mete': Does prosocial priming lead to harsher moral judgment? *Psi Chi Journal of Psychological Research*, 22(1), 10-18. <https://doi.org/10.24839/2325-7342.JN22.1.10>
- Newman, G. E., & Cain, D. M. (2014). Tainted altruism: When doing some good is evaluated as worse than doing no good at all. *Psychological Science*, 25(3), 648-655. <http://dx.doi.org/10.1177/0956797613504785>
- Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology*, 56, 365-392. <http://dx.doi.org/10.1146/annurev.psych.56.091103.070141>
- Perrin, A. (2015, October). *Social networking usage: 2005-2015*. Retrieved March 4, 2020, from the Pew Research Center: <http://www.pewinternet.org/2015/10/08/2015/Social-Networking-Usage-2005-2015/>
- Schau, H. J., & Gilly, M. C. (2003). We are what we post? Self-presentation in personal web space. *Journal of Consumer Research*, 30(3), 385-404. <http://dx.doi.org/10.1086/378616>
- Schaumberg, R. L., & Mullen, E. (2017). From incidental harms to moral elevation: The positive effect of experiencing unintentional, uncontrollable, and unavoidable harms on perceived moral character. *Journal of Experimental Social Psychology*, 73, 86-96. <http://dx.doi.org/10.1016/j.jesp.2017.06.016>
- Scopelliti, I., Loewenstein, G., & Vosgerau, J. (2015). You call it 'self-exuberance'; I call it 'bragging': Miscalibrated predictions of emotional responses to self-promotion. *Psychological Science*, 26(6), 903-914. <http://dx.doi.org/10.1177/0956797615573516>
- Sezer, O., Gino, F., & Norton, M. I. (2018). Humblebragging: A distinct—and ineffective—self-presentation strategy. *Journal of Personality and Social Psychology*, 114(1), 52-74. <http://dx.doi.org/10.1037/pspi0000108>

Author Note. Jennifer Q. Xue  <https://orcid.org/0000-0002-2018-4439>

Kosha D. Bramesfeld  <https://orcid.org/0000-0002-0112-3104>

This research study was designed as a class project for PSYC11H3 Y LEC01 20195: Social Psychology Laboratory, Department of Psychology, University of Toronto Scarborough (Instructor: Kosha D. Bramesfeld, kosha.bramesfeld@utoronto.ca). We would like to thank the other members of the class that contributed to the design and data collection for the study (listed alphabetically): Tiana Barreto, Roy Ching, Rohma Chowdhury, Erin de Ridder, Aleena Easow, John Endaya, Grace Guo, Ashna Imran, Gordon Ly, Tanya Milne, Nadifa Mohammed, Michelle Ou, Julia Santiago, Ashmi Sharma, Samiha Siddique, Tamanna Singh, Krissnavee Somasegaram, Yun Sun, Khala Sutherland, Pilar Tabuena, Jiajia Wang, Adrian Wong, Andrew Xie, Jia Xu, Renjie Zhang.

Correspondence concerning this manuscript should be addressed to Jennifer Q. Xue.
Email: jennifer.xue@mail.utoronto.ca

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Appendix A

Altruistic Scenarios

The control statement was represented by the direct statement, without any information about accomplishment or hardship. The other four statements represented the four conditions of our study: a direct statement about an accomplishment, a direct statement about a hardship, a humblebrag about an accomplishment, and a humblebrag about a hardship. There was a total of five different scenarios.

Walk

Direct statement: I just got done volunteering at a cancer walk. [Near the end of the event, ...]

- Accomplishment: the coordinator acknowledged my efforts in front of everyone!
- Hardship: a runner crashed in to me and broke my arm!

Humblebrag: I just got done volunteering at a cancer walk. Near the end of the event, ...

- Accomplishment: the coordinator acknowledged my efforts in front of everyone! How embarrassing!
- Hardship: a runner crashed into me and broke my arm! How embarrassing!

Tree

Direct statement: I spent the weekend planting trees to protect the environment.

- Direct Accomplishment: I planted over 20 rows of park forestry!
- Direct Hardship: I now have over 20 mosquito bites!

Humblebrag: Planting trees to protect the environment over the weekend was definitely worth the ...

- Accomplishment: more than 20 rows of park forestry that I saved!
- Hardship: more than 20 mosquito bites that I got!

Law

Direct statement: Our law firm is getting a lot of publicity because we took on a new pro-bono case today.

- Accomplishment: Our focus is on making sure this client gets the resources that they need.
- Hardship: Our focus is on putting in the long hours that this case will require.

Humblebrag: It's weird how much publicity our law firm is getting for taking on a new pro-bono case today.

- Accomplishment: We're just focused on making sure this client gets the resources that they need.
- Hardship: We're just focused on putting in the long hours that this case will require.

Beach

Direct statement: I cleared a mile of beach litter today.

- Accomplishment: Now the children have a safe place to play.
- Hardship: Now my face is super sunburnt.

Humblebrag: I can't believe I cleared a mile of beach today.

- Accomplishment: It'll be worth it now that the children have a safe place to play.
- Hardship: It'll worth it once my sunburn goes away.

Soup

Direct statement: I donated \$100 to a soup kitchen.

- Accomplishment: That is enough money to make soup for 20 people.
- Hardship: That is 20 Starbucks coffees that I am giving up.

Humblebrag: I don't know why people are making such a big deal about me donating \$100 to a soup kitchen.

- Accomplishment: That's only enough money to make soup for 20 people.
- Hardship: It's only 20 Starbucks coffees that I am giving up.

Appendix B

Condition Randomization

A 5 x 5 Latin Square was used to create five counterbalanced combinations to ensure that each participant would be exposed to each of the five conditions randomly across the five different scenarios. Participants were randomly assigned to one of the five different combinations. Furthermore, within each counterbalanced combination, the order in which each participant viewed the scenarios was randomized.

Combo	Walk	Tree	Law	Beach	Soup
1	Humble Accomplishment	Direct Hardship	Control	Direct Accomplishment	Humble Hardship
2	Direct Hardship	Humble Accomplishment	Humble Hardship	Control	Direct Accomplishment
3	Control	Direct Accomplishment	Direct Hardship	Humble Hardship	Humble Accomplishment
4	Direct Accomplishment	Humble Hardship	Humble Accomplishment	Direct Hardship	Control
5	Humble Hardship	Control	Direct Accomplishment	Humble Accomplishment	Direct Hardship

Extracurricular Participation, Collective Self-Esteem, and Academic Outcomes Among College Students

Casey A. Knifsend^{1*}, Leigh A. Green², and Kathryn L. Clifford¹

¹Department of Psychology, California State University, Sacramento

²Public Health Survey Research Program, California State University, Sacramento

ABSTRACT. Participating in extracurricular activities during college has been linked with positive peer relations and academic success (e.g., Astin, 1984; Stuart et al., 2011). Yet, less research has focused on identity development and collective self-esteem within extracurricular activities, or whether such positive attitudes about one's activity membership are associated with academic outcomes. In the current study, analyses focused primarily on those who were in at least one activity ($n = 109$), who reported on friendships within their activity, perceptions of interdependence among members, and collective self-esteem within their activity, as well as their feelings of belonging on campus and grade point average. Regression analyses suggested that having friends in one's activity ($\beta = .33, p = .001$) and higher interdependence ($\beta = .51, p < .001$) predicted higher collective self-esteem, with a total adjusted $R^2 = .44$. In turn, greater collective self-esteem was associated marginally with higher feelings of belonging ($\beta = .20, p = .07$, adjusted $R^2 = .07$) and grade point average for those in fraternities or sororities (interaction $\beta = .34, p = .006$; adjusted $R^2 = .17$; simple slope for Greek organizations: $\beta = .42, p = .07$). These findings underscore the importance of considering different dimensions of extracurricular involvement (i.e., both whether one is involved, as well as positive feelings about one's activity), and provide recommendations to student affairs professionals as to how activities may be structured to promote optimal outcomes during college.

Keywords: extracurricular activities, collective self-esteem, belonging, grade point average, college students

Participating in university-sponsored extracurricular activities (e.g., fraternities/sororities, campus organizations, or sports) can play an important role in college students' connectedness to their university, peer relationships, and ultimately, their academic success (Astin, 1984; Stevenson & Clegg, 2011; Stuart et al., 2011). A majority of studies on extracurricular participation have focused on dimensions related to the number of activities, hours spent in a typical week, or duration of involvement, among other measures (e.g., Knifsend, 2018). Less understood, however, is how a student's attitudes and feelings toward their extracurricular activity

affect psychosocial and academic outcomes. The current study is one of few to address this dearth of knowledge by investigating the predictors and outcomes of *collective self-esteem* (i.e., the degree of positivity regarding membership, feelings, and attitudes about one's social group; Luhtanen & Crocker, 1992) associated with one's extracurricular activity group. Greater understanding of this topic will contribute to recommendations for student affairs professionals as to how to structure activities and programs to promote academic success in higher education, as well as for emotional wellness professionals on campuses to gain insight into a source of student psychosocial wellness.

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Benefits of Extracurricular Participation

In general, participating in extracurricular activities during college has been linked with positive academic-related outcomes, such as feelings of belonging on campus and academic performance. For instance, frequent involvement has been associated with positive perceptions of the campus community, including connectedness with one's peers and faculty (Elkins et al., 2011). Similarly, college students participating in activities for a greater number of hours per week report a greater sense of belonging on campus (Knifsend, 2018). Benefits of activity involvement also extend to academic performance. Involvement in Greek fraternities or sororities may benefit students' academic performance, especially for those later in their academic careers (Pike, 2003). In yet other studies, participating in activities for a greater number of days per week has shown to be linked with better grades (Stuart et al., 2011; Webber et al., 2013), as long as one is not involved for too many hours per week (Zacherman & Foubert; 2014). One potential explanation for these findings is that activity contexts can promote skill building (e.g., time management, emotion regulation) in ways that are linked with academic success (Clark et al., 2015). Although activity settings are outside of the classroom, such participation likely represents a contribution to the education of the whole student in ways that affect academic outcomes.

Collective Self-Esteem in Extracurricular Activities

Once college students are involved in activities, they may have different experiences, whether positive or negative, that affect the outcomes of being involved. Therefore, one question to ask is, do all students benefit from extracurricular activity participation, or do students need to derive positive collective self-esteem from their activities? Understanding this question is critical given that students may have limited time to engage on campus outside of the classroom, especially those who have nontraditional college experiences (e.g., older students, those who work full-time), and thus less time for impactful activities that may benefit well-being.

Understanding of students' activity-based, collective self-esteem has been guided by social identity theory (Tajfel & Turner, 1979) and by research on collective self-esteem in general (e.g., Luhtanen & Crocker, 1992). A social identity is comprised of one's self-concept characterized by their knowledge of membership, feelings, and attitudes about their

social group (Luhtanen & Crocker, 1992; Tajfel & Turner, 1979). Social identities can be based on groups related to sex, gender, race, ethnicity, or sexual orientation, as well as other group memberships (Tajfel & Turner, 1979) like the clubs or extracurricular activities one may join. Although adolescence is often considered the formative period for identity development (Harter, 2012), social identity development is ongoing during college due to new contexts, experiences, and a need to fit in among one's peers on campus (Stevenson & Clegg, 2011; Stuart et al., 2011). Given that many young adults explore and refine their identities into emerging adulthood (i.e., typically, 18–25 years old; Arnett, 2000), questions of collective self-esteem during this period may be especially relevant.

In addition to exploring and establishing social identities, those belonging to a group can feel positively (or negatively) about their social identity. Collective self-esteem represents the degree of positivity regarding membership, feelings, and attitudes about one's social group. That is, if a student is a member of a soccer team, how do they feel about their social identity related to being part of the soccer team? Importantly, collective self-esteem is derived primarily from group memberships, whereas personal self-esteem captures feelings about one's individual attributes. Collective and personal self-esteem are moderately correlated, but are considered to reflect distinct dimensions of self-esteem (Luhtanen & Crocker, 1992). Measures of collective self-esteem include four dimensions related to membership (i.e., perceptions of being a good member of one's social group), public regard (i.e., perceptions of others' feelings about one's social group), private regard (i.e., one's own feelings about one's social group), and importance (i.e., the personal importance of one's social group to self-concept; Luhtanen & Crocker, 1992). Having high collective self-esteem is associated with positive outcomes among college students, including psychological well-being, with small effects found with personal self-esteem accounted for in the models (e.g., Crocker et al., 1994).

Collective self-esteem related to extracurricular activity participation is of interest in the current study given the salience of activities during college (Stevenson & Clegg, 2011; Tieu et al., 2010), and how such self-esteem may affect academic outcomes. Activity settings may be an optimal group context in which to develop positive collective self-esteem, due to opportunities for self-exploration and connecting with peers (Stevenson & Clegg, 2011; Stuart

WINTER 2020

**PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH**

et al., 2011). For instance, a retrospective study of college alumni suggested themes related to self-confidence, networking, making friends, and the development of social skills within activity settings, all of which are factors that may promote identity development and positive self-esteem (Stuart et al., 2011). In turn, collective self-esteem related to one's extracurricular activity is likely to affect academic outcomes. Although few studies have examined this association directly, research on collective self-esteem within specific, out-of-class contexts (e.g., first year residence halls) has revealed associations with academic success, measured by a higher grade point average (Bettencourt et al., 1999). Further, in a study of Canadian college students, greater quality of involvement (i.e., affect, meaning, and relationships) in one important university program, outside of structured academic requirements and paid employment, was linked with positive academic, social, and emotional adjustment (Tieu et al., 2010). Although this study did not examine collective self-esteem per se, positive feelings toward a salient group context, such as programs or activities outside of the classroom, may generalize to adjustment in college more broadly.

Predictors of Collective Self-Esteem in Extracurricular Activity Settings

If having high collective self-esteem about one's place in their extracurricular activity is linked with positive outcomes, it would then be critical to understand the factors that strengthen collective self-esteem. In the current study, we examined relational factors within extracurricular activities (i.e., friendships within the activity, and the degree of interdependence of activity members), which are likely to foster positive evaluations of one's social identity. Within a group setting, the nature of interactions among group members can influence one's social identity. For instance, dyadic interactions (e.g., among supervisor-supervisee, or among peers) within work settings affect one's identification with the organization as a whole. Potentially, positive affect about one's relationships transfers to feelings about the organization in general (Sluss & Ashforth, 2008). In settings of higher education, friendships within activities may play a similar role in heightening a strong activity-based social identity.

In addition to friendships, the degree of interdependence of group members may affect identification with the larger group. In highly interdependent activities, group members must

collaborate to reach a common goal, whereas in less interdependent activities, activity members can operate largely independently to reach a common objective, if sharing a common objective at all (Van Der Veegt et al., 1998). Shared goals, characteristic of highly interdependent activities, are likely to amplify one's group-based identification (Hogg, 1996). Extracurricular activities may bolster performance in higher education through building a more salient identity connected to those activities, through mechanisms like activity interdependence. Thus, we also presume that greater perceptions of interdependence among the members of students' campus activities will promote identification with one's activity or group.

Current Study

Our main objective was to investigate how positive collective self-esteem related to one's activity is associated with academic-related outcomes. Four main research questions guided our study. To preface our main analyses, the first two questions explored the predictors and outcomes of extracurricular participation (i.e., whether one is involved or not) at a four-year university in the United States. Our first question was: What are the demographic predictors (i.e., age, gender, ethnicity, and class level) of extracurricular participation? Given this question was largely preliminary to describe participation across our sample, we did not articulate specific hypotheses. Our second question, in turn, asked: How is extracurricular participation associated with academic-related outcomes? We examined grade point average, in addition to feelings of belonging, as theoretically important variables affecting retention in college (Hoffman et al., 2002). We hypothesized that participating in at least one activity would be associated with greater feelings of belonging and a higher grade point average (e.g., Knifsend, 2018; Pike, 2003).

Given our primary focus on collective self-esteem in one's extracurricular activity, the last two questions explored the predictors and outcomes of collective self-esteem. Our third question asked: What are the predictors of positive activity-related, collective self-esteem? For this question, we tested demographic predictors, as well as the relational predictors of friendships in one's activity and perceived degree of interdependence of activity members (Sluss & Ashforth, 2007; Van Der Veegt et al., 1998). Based on prior research (e.g., Sluss & Ashforth, 2007), we predicted that more friends in one's activity and greater activity

interdependence would be linked with higher collective self-esteem. In turn, our fourth question asked: Is positive collective self-esteem in one's extracurricular activity associated with academic-related outcomes? We hypothesized that those with high collective self-esteem would report greater feelings of belongingness on one's campus and a higher grade point average (e.g., Bettencourt et al., 1999). Exploratory analyses tested the type of activity (i.e., Greek organization, sport, or other campus organization) as a moderator of these associations, given research focusing on the type of activities and academic outcomes.

Method

Participants

The sample was comprised of 298 college students from California State University, Sacramento, a large, diverse public university in the western United States. Based on self-report data, the sample (79% women; $M_{\text{age}} = 20.39$ years, $SD_{\text{age}} = 4.60$, age range: 18–63) was 26% Mexican/Mexican American, 24% White/European American, 11% Southeast Asian, 6% East Asian, 5% Pacific Islander, 4% Latinx/other country of origin (i.e., non-Mexican origin), 3% Black/African American, 3% South Asian, 1% Middle Eastern, 0.3% American Indian, with an additional 13% classifying themselves as Other or Multiethnic, and 4% omitting racial-ethnic group membership data. For analyses focusing on collective self-esteem in an extracurricular activity, our main analyses, a subsample of 109 college students involved in extracurricular activities was analyzed. This subsample (72% women; $M_{\text{age}} = 19.87$ years, $SD_{\text{age}} = 2.12$, age range: 18–28) was 29% Mexican/Mexican American, 24% White/European American, 10% Southeast Asian, 10% East Asian, 4% Pacific Islander, 4% Latinx/other country of origin, 4% South Asian, 1% Black/African American, 1% Middle Eastern, with 8% identifying themselves as Other or Multiethnic, and 6% omitting racial-ethnic group membership data.

The university from which the sample was drawn serves mainly undergraduate students, and approximately one-third of its students are first-generation college students (i.e., student is first generation to attend college; California State University Enrollment Dashboard, n.d.). Most students live off-campus and commute to school (84% of current sample). Its intercollegiate athletics compete in Division I of the National Collegiate Athletic Association (NCAA).

Measures

Extracurricular Participation

Students listed the university-based clubs they participated in during the academic year. Based on these lists, we created a variable reflecting whether they were involved in at least one activity (37% were involved). Of the activities listed, 28% were sports/recreation (i.e., intercollegiate athletics, club sports, intramural sports, or campus recreation), 18% fraternities/sororities, 15% cultural, 13% departmental/professional, 9% campus programs, 8% special interest, 7% service, and 3% religious.

Collective Self-Esteem in Extracurricular Activities

Those who were in extracurricular activities ($n = 109$) selected the one activity in which they spent the most time, on average. Those in multiple activities ($n = 35$) reported on the activity in which they spent the most time given that time spent is a critical dimension of extracurricular involvement (e.g., Knifsend, 2018), yet is conceptually distinct from our measure of collective self-esteem in activities. Sixteen items were adapted from the Collective Self-Esteem Scale (Luhtanen & Crocker, 1992) tapping dimensions related to membership esteem (e.g., "I am a worthy member of this activity"), private (e.g., "In general, I am glad to be a member of this activity"), and public (e.g., "In general, others respect this activity") collective esteem, and importance of the activity group to the student's self-concept (e.g., "The activity I belong to is an important reflection of who I am"). Each item was rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) and was averaged to reflect collective self-esteem ($\alpha = .89$).

Relational Characteristics of Extracurricular Activities

Relational characteristics of activities were assessed in two ways: extracurricular friendships and extracurricular activity outcome interdependence. To test extracurricular friendships as a predictor of collective self-esteem, students estimated the proportion of members (in their one activity) who were their friends. For the one activity in which they spent the most time, students also rated six items reflecting the degree of extracurricular activity outcome interdependence (Van Der Vegt et al., 1998) of members on a 5-point Likert scale (e.g., "In my activity, the things other activity members want to accomplish and the things I want to accomplish are compatible"; 1 = *strongly disagree* to 5 = *strongly agree*), which were averaged to reflect extracurricular activity outcome interdependence ($\alpha = .71$).

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Academic-Related Outcomes

Academic-related outcomes included feelings of belonging (Anderman, 2002) and grade point average. Four items were rated on a five-point Likert scale (e.g., "I feel like I am a part of my university"; 1 = *strongly disagree* to 5 = *strongly agree*), with the composite of these items measuring sense of belonging at one's university ($\alpha = .82$). Grade point average was measured by having students self-report their grade point average at their current university.

Demographic Variables

Students reported their age, ethnicity, and gender. Based on University classifications, ethnicity was grouped as underrepresented (i.e., American Indian, Black/African American, Mexican/Mexican American, Latinx/other country of origin, and Pacific Islander) versus all other groups, which was necessary due to small *ns* in some groups. Students also responded to several other items, including their class level (i.e., grouped as first year or sophomore versus upper division students; 33% were upper division).

Procedure

Students were included in the psychology research participant pool as part of lower or upper division psychology courses and earned course or extra credit for their participation in the study. All students enrolled in these classes were eligible to sign up for the research study and were asked to do so as part of the course requirement or extra credit. The campus Institutional Review Board at California State University, Sacramento approved the study prior to recruitment. Students filled out a paper packet of survey measures in groups of 20 during 1-hour sessions. Paper dividers blocked views of neighboring participants to provide a sense of confidentiality. Trained researchers, who were graduate or undergraduate research assistants, were present to address any questions that arose during data collection. Upon completion of the

study, participants were given a debriefing form with additional information about the study, as well as contact information for campus resources (e.g., counseling services).

Results

The results section consists of two main parts. The main goal of this study was to examine the predictors and academic-related outcomes of collective self-esteem in one's extracurricular activity. To preface our main analyses, the first part describes analyses of the demographic predictors of extracurricular participation (i.e., if the student participated in at least one activity), and in turn, the link between extracurricular participation and academic-related outcomes ($N = 298$). The second, and main, part describes analyses of the predictors and outcomes of collective self-esteem in one's extracurricular activity for those involved in at least one activity ($n = 109$). We examined demographic and contextual predictors of collective self-esteem in one's extracurricular activity, and in turn, how such self-esteem is associated with academic-related outcomes. For all analyses, listwise deletion of data was used. Correlations and descriptive statistics (*Ms*, *SDs*) of main model variables are provided in Table 1.

Extracurricular Participation

Predictors of Extracurricular Participation

Predictors of extracurricular participation were tested using a logistic regression model, examining the odds that students were involved in at least one activity. Demographic variables, including age, ethnicity, gender, and class level, were entered simultaneously, but none were found to be significant predictors of extracurricular participation, $ps > .05$.

Outcomes of Extracurricular Participation

Controlling for age, ethnicity, gender, and class level, as demographic variables that may be linked with academic outcomes, two linear regression models investigated the link between extracurricular participation and academic-related outcomes. The model predicting feelings of belonging was significant overall, $F(5, 287) = 2.34, p = .04$, adjusted $R^2 = .02$. Extracurricular activity participation was linked with greater feelings of belonging ($b = .23, SE = 0.10, \beta = .14, p = .02$). The model examining the link between extracurricular participation and grade point average did not reveal a significant association, $F(5, 261) = .65, p = .66$, adjusted $R^2 = -.01$.

TABLE 1

Pearson's Correlations of Main Model Variables

	1	2	3	4	5	<i>M(SD)</i>
1. Friends in activities	–					0.48(0.40)
2. Activity interdependence	.24*	–				4.13(0.53)
3. Collective self-esteem in activities	.38***	.60***	–			4.14(0.52)
4. Belongingness	.20†	.16	.20†	–		3.53(0.81)
5. Grade point average	–.10	.00	.05	.07	–	3.11(0.58)

Note. † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Collective Self-Esteem in One's Extracurricular Activity

Predictors of Collective Self-Esteem

Hierarchical regression models tested the role of age, ethnicity, gender, and class level in collective self-esteem in Step 1, followed by type of activity (i.e., Greek organizations, which comprised 26% of the sample; sports, 26%; or other campus clubs, grouped due to a small n , 49%) and relational characteristics of the activity (i.e., friendships in the activity and activity interdependence) in Step 2. The model at Step 1 was not significant, $F(4, 76) = 2.06, p = .09$, adjusted $R^2 = .05$. Adding variables in Step 2 significantly improved the prediction of collective self-esteem, $F(4, 72) = 14.29, p < .001$, adjusted $R^2 = .44, \Delta R^2 = .40$. A greater proportion of extracurricular friendships ($b = .43, SE = 0.12, \beta = .33, p = .001$) and higher extracurricular activity outcome interdependence ($b = .50, SE = 0.09, \beta = .51, p < .001$) were associated with higher collective self-esteem. Type of activity was unrelated with collective self-esteem (comparing sport to campus clubs: $b = .07, SE = 0.11, \beta = .06, p = .57$; comparing Greek organizations to campus clubs: $b = -.14, SE = 0.12, \beta = -.11, p = .25$).

Outcomes of Collective Self-Esteem

Lastly, the links between collective self-esteem and academic-related outcomes were tested using linear regression models, controlling for age, ethnicity, gender, class level, and type of activity. The model predicting feelings of belonging was marginally significant, $F(7, 80) = 1.88, p = .08$, adjusted $R^2 = .07$. Higher collective self-esteem was associated marginally with greater feelings of belonging on campus ($b = .31, SE = 0.17, \beta = .20, p = .07$). The model predicting grade point average was significant, $F(7, 76) = 2.38, p = .03$, adjusted $R^2 = .10$; however, collective self-esteem did not significantly predict grade point average, $b = .08, SE = .11, \beta = .08, p = .48$. Instead, participant age ($b = -.10, SE = 0.05, \beta = -.37, p = .04$) and type of activity (i.e., Greek organizations versus other campus organizations; $b = -.35, SE = 0.14, \beta = -.29, p = .01$) were significant predictors, suggesting that older students and those in Greek organizations had a lower grade point average than their peers.

Interactions of collective self-esteem and type of activity on academic outcomes were also tested. As shown in Table 2, a significant interaction was found when comparing those in fraternities or sororities with those in other campus organizations, in terms of grade point average. Testing the

interaction, analyses of simple slopes showed that for those in fraternities or sororities, collective self-esteem associated with the student's activity was marginally linked with a higher grade point average ($b = .46, SE = 0.23, \beta = .42, p = .07$), but this association was not significant for students in other campus organizations ($b = -.14, SE = 0.12, \beta = -.18, p = .25$). However, given a small n for fraternities and sorority members with complete data ($n = 22$), we consider these analyses largely preliminary.

In sum, collective self-esteem related to one's activity was marginally associated with feelings of belonging overall—over and above merely participating. Collective self-esteem was also linked marginally with grade point average for those in fraternities/sororities, compared to other campus organizations. Peer interactions within the activity, such as friendships and outcome interdependence, were predictive of higher collective self-esteem.

Discussion

Extending theory and research on extracurricular participation that has focused mainly on quantitative aspects of involvement (e.g., the number of activities or number of hours one is involved; Elkins

TABLE 2

Final Regression Models Predicting Academic-Related Outcomes

	Belonging			Grade point average		
	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β
Intercept	3.70***	0.13		3.14***	0.08	
Age	−0.14 [†]	0.07	−0.35	−0.11 [*]	0.05	−0.39
Male	0.11	0.20	0.06	0.21	0.13	0.17
Junior/senior/super senior	0.34	0.29	0.21	0.23	0.19	0.21
Underrepresented minority	0.19	0.17	0.12	−0.05	0.11	−0.05
Sport	0.10	0.21	0.05	−0.03	0.14	−0.03
Greek	−0.22	0.21	−0.12	−0.33 [*]	0.13	−0.27
Collective self-esteem	0.38 [†]	0.22	0.25	−0.13	0.14	−0.03
Sport x Collective Self-Esteem	0.03	0.46	0.01	0.22	0.29	0.09
Greek x Collective Self-Esteem	−0.31	0.39	−0.10	0.68**	0.24	0.34
adjusted R^2	0.05			0.17		
<i>F</i>	1.52			2.88**		

Note. Covariates included age, gender (with female comparison), class level (with first year/sophomores as comparison), ethnicity (with students not classified as underrepresented as comparison group), and the type of activity (with campus organizations as comparison). Underrepresented students included those self-identifying as American Indian, Black/African American, Mexican/Mexican American, Latinx/other country of origin, and Pacific Islander (38% of sample), consistent with the University's definition of this group.

[†] $p < .10$. ^{*} $p < .05$. ^{**} $p < .01$. ^{***} $p < .001$.

et al., 2011; Stuart et al., 2011; Webber et al., 2013), the current study examined if collective self-esteem (Luhtanen & Crocker, 1992) heightens how campus activity involvement is linked with academic-related outcomes. The current investigation is one of few to focus on collective self-esteem related to activity involvement, as well as its predictors and outcomes. Understanding the experience of participating in university-sponsored activities, and what kind of involvement matters, is critical to recommendations to student affairs professionals about how best to foster campus engagement and student success.

Our main analyses investigated how activity-related, collective self-esteem was linked with feelings of belonging on campus and grade point average. Participation in activities was associated with heightened feelings of belonging. Among those involved in activities, links between higher collective self-esteem and academic-related outcomes, including belonging, were not statistically significant. These findings contrast prior research suggesting links between collective self-esteem in out-of-class settings (e.g., residence halls) and academic outcomes (Bettencourt et al., 1999). Interactions by the type of activity, moreover, were significant only for grade point average, suggesting a different pattern of associations for Greek organizations (i.e., positive, but only marginally significant) versus campus organizations (i.e., not statistically significant). Given the small *n* for these analyses, additional research is needed to replicate this finding. Additionally, although we tested for demographic differences in extracurricular participation (which we did not find evidence of in this sample), we could not examine these differences in collective self-esteem due to small *ns*. Examining effects of campus activities across groups (e.g., Do fraternities versus sororities differ in their effects on grade point average?) would contribute to further understanding of these findings. Together, these findings suggest benefits of extracurricular participation on students' sense of belonging during college, although collective self-esteem did not appear to play as much of a role in academic-related outcomes, as predicted based on theory and research (e.g., Tajfel & Turner, 1979; Tieu et al., 2010).

Additionally, one of our main goals was to understand how positive feelings and attitudes about one's activity are fostered. Students' interactions in their activity, including how many friends one has and the degree of interdependence among group members, predicted collective

self-esteem. Collaborating with other activity members to meet a common goal is likely to strengthen identification with the collective group (Hogg, 1996; Van Der Veegt et al., 1998). Consistent with prior research on work-related identities (Sluss & Ashforth, 2007), moreover, the extent and quality of peer interactions may heighten a sense of identification and positivity about one's social identity within an activity setting. These findings underscore the need to conduct studies that focus on the experiences that college students have in their extracurricular activity settings, and how those experiences influence identity formation, in turn.

Limitations and Future Directions

Further research is needed to examine other measures capturing the experience of involvement on university campuses. First, the current study asked participants to reflect on interactions and collective self-esteem in the activity in which they spent the most time, if they were in multiple activities. Other criteria, like the relative importance of the activity (Tieu et al., 2010), may also help researchers identify one activity of focus in ways that are more relevant to understanding quality of involvement. Additionally, employing mixed-methods studies to discover other novel measures of the quality of activity involvement could be especially fruitful. Moreover, differentiating further between types of campus programs and organizations may be important to the questions examined in this study. Given our *n*, we were not able to examine the differences between campus organizations that may provide unique experiences, such as cultural, professional, or special interest oriented clubs. Lastly, although collective self-esteem might reflect one aspect of membership in a university-sanctioned activity, other aspects may be more relevant to academic outcomes and well-being. For instance, involvement may also include positive affect, meaning, and relationships regarding one's activity (Tieu et al., 2010), which are presumed to capture the quality or richness of one's experience in their activity. Other research has suggested that personal qualities like optimism may relate to a higher grade point average (Maleva, et al., 2014), and given evidence that personal self-esteem is linked with well-being (e.g., Crocker et al., 1994), it is important to consider these types of variables in future research. Examining the extent to which activities foster these personal qualities, and in turn academic success, would be beneficial.

Future research is also needed to consider indicators of academic success, more objective measures of our variables of interest, and the meaning of extracurricular participation among different demographic groups. Given that our measures of academic success were limited, employing indicators used in prior studies such as motivation, self-efficacy, resilience, critical thinking, retention, and institutional records of grade point average would be more consistent with current research on student success (e.g., Kim, 2015; Martin & Seifert, 2011; Reynolds & Wiegand, 2010). Particularly, all measures employed in the current study were self-reported. Additional measures of our variables of interest (e.g., researcher observations of dynamics within activities; institutional data on grade point average) would lessen bias. Moreover, as this sample was drawn from a participant pool in a predominantly female, undergraduate psychology program, it is unclear how these findings would generalize to college-aged men or nonbinary students. Given that some activities are gender-specific traditionally (e.g., Greek organizations, like fraternities or sororities), there may be differences in how activity-related identities are associated with academic-related outcomes that were unexamined in the current investigation. Future research is also needed to test if, for example, underrepresented students benefit most from being involved with and identifying strongly with campus programs (e.g., Baker, 2008). As the study currently stands with a smaller sample, it is unclear how findings would generalize to other majors or samples with more diverse groups.

Implications for Practice

This research has several important implications for practice. A critical first step is getting students involved in activities. A substantial proportion of college students balance obligations outside of campus, such as work or family responsibilities (Perna, 2010), that can make it difficult to participate. To make activities accessible to all students, it is important to structure them with a variety of opportunities to get involved. For instance, nontraditional students may benefit from club meetings offered at different times, ways to contribute electronically or from a distance, and organizations oriented specifically to the nontraditional student experience (Goncalves & Trunk, 2014). For students who are nontraditional based on their age (i.e., those over age 25), greater communication of opportunities and activities oriented toward the interests of older

students may heighten levels of involvement (Wyatt, 2011). Given greater feelings of isolation or a lack of fitting in among nontraditional students (Goncalves & Trunk, 2014), these efforts oriented toward these groups may be especially important.

Once students are involved in activities, activity leaders may focus on structuring the activity so it is a positive experience for all. In this study, both interdependence and friendships within one's activity were linked with higher collective self-esteem. Having a common project (e.g., painting a mural on campus in an Art Club) where activity members must rely on each other to achieve a goal could promote connectedness and identification among group members (Warner & Dixon, 2013). Recommendations for promoting positive group dynamics in activities, although less studied, are likely to align with research on cooperative learning. For example, activity leaders can structure activities to emphasize collective success, reinforce individual accountability, encourage support and positive reinforcement of other group members, scaffold development of teamwork skills, and facilitate opportunities for group processing (e.g., Smith et al., 2005). Findings of this study highlight the critical role institutions can play in strengthening academic success via additional supports available for extracurricular activities on campus.

References

- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469–480. <https://doi.org/10.1037//0003-066X.55.5.469>
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, *25*(4), 297–308. <https://psycnet.apa.org/record/1985-18630-001>
- Baker, C. N. (2008). Under-represented college students and extracurricular involvement: The effects of various student organizations on student performance. *Social Psychology of Education*, *11*, 273–298. <https://doi.org/10.1007/s11218-007-9050-y>
- Bettencourt, B. A., Charlton, K., Eubanks, J., Kernahan, C., & Fuller, B. (1999). Development of collective self-esteem among students: Predicting adjustment to college. *Basic and Applied Social Psychology*, *21*(3), 213–222. <https://doi.org/10.1207/s15324839951036380>
- California State University Enrollment Dashboard. (n.d.). <https://tableau.calstate.edu/views/SelfEnrollmentDashboard/EnrollmentSummary>
- Clark, G., Marsden, R., Whyatt, J. D., Thompson, L., & Walker, M. (2015). 'It's everything else you do...': Alumni views on extracurricular activities and employability. *Active Learning in Higher Education*, *16*(2), 133–147. <https://doi.org/10.1177/1469787415574050>
- Coats, S., Smith, E. R., Claypool, H. M., & Banner, M. J. (2000). Overlapping mental representations of self and in-group: Reaction time evidence and its relationship with explicit measures of group identification. *Journal of Experimental Social Psychology*, *36*(3), 304–315. <https://doi.org/10.1006/jesp.1999.1416>
- Crocker, J., Luhtanen, R., Blaine, B., & Broadnax, S. (1994). Collective self-esteem and psychological well-being among White, Black, and Asian college students. *Personality and Social Psychology Bulletin*, *20*(5), 503–513. <https://doi.org/10.1177/0146167294205007>
- Elkins, D. J., Forrester, S. A., & Noel-Elkins, A. V. (2011). Students' perceived sense

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

- of campus community: The influence of out-of-class experiences. *College Student Journal*, 45(1), 105–121. <https://eric.ed.gov/?id=EJ996353>
- Goncalves, S. A., & Trunk, D. (2014). Obstacles to success for the nontraditional student in higher education. *Psi Chi Journal of Psychological Research*, 19(4), 164–172. <https://doi.org/10.24839/2164-8204.jn19.4.164>
- Harter, S. (2012). Emerging self-processes during childhood and adolescence. In M. Leary & J. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 680–715). Guilford Press.
- Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating "sense of belonging" in first-year college students. *Journal of College Student Retention: Research, Theory and Practice*, 4(3), 227–256. <https://doi.org/10.2190/DRYC-CXQ9-JQ8V-HT4V>
- Hogg, M. A. (1996). Social identity, self-categorization, and the small group. In E. H. Witte & J. H. Davis (Eds.), *Understanding group behavior: Small group processes and interpersonal relations* (pp. 227–253). Lawrence Erlbaum & Associates.
- Kim, J. (2015). Predictors of college retention and performance between regular and special admissions. *Journal of Student Affairs Research and Practice*, 52(1), 50–63. <https://doi.org/10.1080/19496591.2015.995575>
- Knifsend, C. A. (2018). Intensity of activity involvement and psychosocial well-being among students. *Active Learning in Higher Education*, 21(2), 116–127. <https://doi.org/10.1177/1469787418760324>
- Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin*, 18(3), 302–318. <https://doi.org/10.1177/0146167292183006>
- Maleva, V., Westcott, K., McKellop, M., McLaughlin, R., Widman, D., & College, J. (2014). Optimism and college grades: Predicting GPA from explanatory style. *Psi Chi Journal of Psychological Research*, 19(3), 129–135. <https://doi.org/10.24839/2164-8204.jn19.3.129>
- Martin, G. L., & Seifert, T. A. (2011). The relationship between students' interactions with student affairs professionals and cognitive outcomes in the first year of college. *Journal of Student Affairs Research and Practice*, 48(4), 389–410. <https://doi.org/10.2202/1949-6605.6198>
- Perna, L. W. (2010). *Understanding the working college student: New research and its implications for policy and practice*. Stylus Publishing, LLC.
- Pike, G. R. (2003). Membership in a fraternity or sorority, student engagement, and educational outcomes at AAU public research universities. *Journal of College Student Development*, 44(3), 369–382. <https://doi.org/10.1353/csd.2003.0031>
- Reynolds, A. L., & Weigand, M. J. (2010). The relationships among academic attitudes, psychological attitudes, and the first-semester academic achievement of first-year college students. *Journal of Student Affairs Research and Practice*, 47(2), 175–195. <https://doi.org/10.2202/1949-6605.6004>
- Sluss, D. M., & Ashforth, B. E. (2007). Relational identity and identification: Defining ourselves through work relationships. *Academy of Management Review*, 32(1), 9–32. <https://doi.org/10.5465/amr.2007.23463672>
- Sluss, D. M., & Ashforth, B. E. (2008). How relational and organizational identification converge: Processes and conditions. *Organization Science*, 19(6), 807–823. <https://doi.org/10.1287/orsc.1070.0349>
- Smith, K. A., Sheppard, S. D., Johnson, D. W., & Johnson, R. T. (2005). Pedagogies of engagement: Classroom-based practices. *Journal of Engineering Education*, 94(1), 87–101. <https://doi.org/10.1002/j.2168-9830.2005.tb00831.x>
- Stevenson, J., & Clegg, S. (2011). Possible selves: students orientating themselves towards the future through extracurricular activity. *British Educational Research Journal*, 37(2), 231–246. <https://doi.org/10.1080/01411920903540672>
- Stuart, M., Lido, C., Morgan, J., Solomon, L., & May, S. (2011). The impact of engagement with extracurricular activities on the student experience and graduate outcomes for widening participating populations. *Active Learning in Higher Education*, 12(3), 203–215. <https://doi.org/10.1177/1469787411415081>
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup behaviour. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–48). Brooks/Cole.
- Tieu, T., Pancer, S. M., Pratt, M. W., Wintre, M. G., Birnie-Lefcovitch, S., Polivy, J., & Adams, G. (2010). Helping out or hanging out: The features of involvement and how it relates to university adjustment. *Higher Education*, 60, 343–355. <https://doi.org/10.1007/s10734-009-9303-0>
- Van Der Vegt, G., Emans, B., & Van De Vliert, E. (1998). Motivating effects of task and outcome interdependence in work teams. *Group & Organization Management*, 23(2), 124–143. <https://doi.org/10.1177/1059601198232003>
- Warner, S., & Dixon, M. A. (2013). Sports and community on campus: Constructing a sports experience that matters. *Journal of College Student Development*, 54(3), 283–298. <https://doi.org/10.1353/csd.2013.0044>
- Webber, K. L., Krylow, R. B., & Zhang, Q. (2013). Does involvement really matter? Indicators of college student success and satisfaction. *Journal of College Student Development*, 54(6), 591–611. <https://doi.org/10.1353/csd.2013.0090>
- Wyatt, L. G. (2011). Nontraditional student engagement: Increasing adult student success and retention. *The Journal of Continuing Higher Education*, 59(1), 10–20. <https://doi.org/10.1080/07377363.2011.544977>
- Zacherman, A., & Foubert, J. (2014). The relationship between engagement in cocurricular activities and academic performance: Exploring gender differences. *Journal of Student Affairs Research and Practice*, 51(2), 157–169. <https://doi.org/10.1515/jsarp-2014-0016>

Author Note. This study was supported by a California State University, Sacramento Probationary Faculty Development Grant.

Special thanks to *Psi Chi Journal* reviewers for their support, as well as to members of the ENGAGED Lab at Sacramento State for their assistance with data collection and management.

Correspondence concerning this article should be addressed to Casey A. Knifsend, Department of Psychology, California State University, Sacramento, 6000 J Street, Amador Hall Room 350, Sacramento, CA 95819-6007. Email: casey.knifsend@csus.edu.

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Exploring the Complexity of Coping Strategies Among People of Different Racial Identities

Brittney K. Kawakami, Sabrina G. Legaspi, Deirdre A. Katz*, and Sarina R. Saturn*
Department of Psychological Sciences, University of Portland

ABSTRACT. Everyone responds to stress differently by using a wide variety of coping strategies. The current study ($N = 898$; 71.16% White, 13.36% Asian, 6.68% Black, 3.23% Multiracial, 5.57% Other) investigated the relationship between 12 coping strategies of the COPE Inventory (Carver et al., 1989) and 5 racial identities. As expected and in line with previous work, Asian and Black participants tended to use more religious coping ($p < .001$), and Asian participants tended to use more restraint as a coping mechanism than White participants ($p < .001$). Our sample in this study, however, uncovered some novel trends. Interestingly, Asian participants tended to use a diverse mixture of coping strategies, including focusing on and venting of emotions ($p = .04$), instrumental social support ($p = .02$), active coping ($p = .05$), coping humor ($p < .001$), emotional social support ($p = .03$), and suppression of competing activities ($p < .001$). The use of these different coping strategies was counterintuitive due to the nature of Asian collectivist culture. The coping strategies of venting of emotions, instrumental social support, emotional social support, and suppression of competing activities active coping, in particular, challenge collectivist culture norms of emotional control and group harmony. Additional results are reported and explained. The current study suggests that coping strategies vary by racial identity and that people of color tend to utilize more coping strategies than White people.

Keywords: coping strategies, racial identity, cultural norms

Racial identity is an important factor in an individual's intersectionality of identities and can play a pivotal role in cognition and behaviors. Racial identity is an individual's sense of belonging within a specific racial group based on the perception that the person shares a racial heritage with such group (Helms, 1990). The concept of racial identity contrasts from race because race is a social construction that has its foundations in skin color (Pendry, 2017). Although many scholars in multiple disciplines, such as evolutionary biology and anthropology, have found no scientifically proven distinctions between races, people act as if race is a real category by treating people differently based on skin color (Pendry, 2017). This prejudice risen from racism can deny a person's individuality and negatively

affect intergroup and intragroup interactions (Tatum, 1992). However, racial identity can be a powerful tool for people of color to use to combat racism. Pendry (2017) views the development of racial identity as an important factor in an individual's broad cultural identity. Culture is the focal point that can bring many individuals together under a common set of values, leading to a sense of belonging. Although race and racism are meant to categorize and tear people apart, a solid development of racial identity can lead to feelings of acceptance and inclusion.

Coping strategies are ways in which people respond when they confront difficult or stressful events (Carver et al., 1989). There is a tendency to group coping strategies into two coping styles—problem-focused coping and avoidance-oriented

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

coping. Problem-focused coping is when individuals actively seek out the stress and make direct efforts to change it (Van Gundy et al., 2015). Meanwhile, avoidance-oriented coping is when individuals withdraw from the stressor and may deny the existence of the stressor, doubt their abilities to handle the stressor, or give up due to the stressor (Van Gundy et al., 2015). The context of the stressor can result in a different choice in coping strategy (Compas et al., 1988). For instance, a person can choose one coping strategy for dealing with racism, whereas the same person can choose an entirely different coping strategy for dealing with academic stress. Racism can also be presented in various ways, such as a microaggression versus racial violence, which then can affect coping strategy choice (Kubiliene et al., 2015). People of color regularly face stressors, such as racial prejudice, discrimination, and microaggressions, along with the consequences of racism, such as lowered socioeconomic status (Van Gundy et al., 2015). Because coping is a necessity for one's physical and mental health (Blackmon et al., 2015), it is especially important for people of color to cope with their stressors that they inevitably face due to the racism in our society.

Collectivism, Individualism, and How Culture Affects Coping Strategies

There are key differences between collectivistic and individualistic cultures. Collectivistic *cultural norms* include saving face, emotional control, and group harmony (Wei et al., 2010). Groups such as the family, tribe, workplace, and religious group take precedence over the individual (Frías et al., 2014). In contrast, individualistic cultural norms include self-reliance, behavior based on the individual's goals and interests, and independence (Frías et al., 2014). Cultural values play a pivotal role in an individual's coping strategy, especially in terms of collectivistic versus individualistic cultures. Cultural values on sense of control plays a huge role in how an individual assesses and copes with stressors. Researchers have described primary control as actively influencing the situation, whereas secondary control as accommodating to the situation (Weisz et al., 1984). These researchers have found that the United States, a nation with an individualistic culture, values primary control whereas Japan, a nation with a collectivistic culture, values secondary control, which in turn affects various aspects of society, such as coping strategies (Weisz et al., 1984). In relation to this idea on individualism and collectivism, compliance with Asian collectivistic values was

found to be positively correlated with attributing depressive symptoms with internal factors rather than external factors, which then was positively correlated with disengagement and negatively correlated with engagement as coping strategies (Wong et al., 2010). Acculturation also plays a role in whether people adhere to the coping strategies of their culture. For instance, high acculturated Chinese-American children were found to utilize retaliation as a coping strategy, which in turn was associated with less dysphoria (Huang et al., 1994). Meanwhile, their low acculturated counterparts used suppression as a coping strategy, which was correlated with less dysphoria. Emotional expression in the form of retaliation is more culturally acceptable in individualistic cultures, whereas emotional suppression is expected in collectivistic cultures. Consequently, coping strategies will resemble the culture that the individual best identifies with, which may or may not align with racial identity based on levels of acculturation. Adherence to culturally specific coping strategies also contributes to better overall mental health (Vaughn & Roesch, 2003; Huang et al., 2012). Therefore, one must consider cultural values as a major influence when looking at coping strategies among individuals (Neville et al., 2011).

Asian-Specific Coping Strategies

Previous work has found that Asian people tend to utilize avoidance style coping strategies (Lee & Mason, 2014) due to the influence of Eastern, collectivistic culture. Types of avoidance style coping strategies include, but are not limited to, disengagement and meditation/exercise (Lei & Pellitteri, 2017), religious coping (Chai et al., 2011), restraint (Vaughn & Roesch, 2003), and substance use (Taylor et al., 2004). In turn, they tend to not use reactive coping styles (Wei et al., 2010) and social support (Chang, 2015; Taylor et al., 2004), as these conflict with collectivistic values. Reactive coping styles, such as focusing on and venting of emotions, clashes with the cultural importance of emotional control. Additionally, Asian people underutilize social support due to the cultural desire to not burden others, to avoid judgement, and in fear of face loss (Chang, 2015). Researchers explain this phenomenon by asserting that the cultural priority on maintaining group harmony causes Asian people to avoid bringing attention to their personal problems or asking others for help as it may jeopardize the group harmony or force inappropriate requests onto the group (Taylor et al., 2004).

White-Specific Coping Strategies

Similar to the effect of collectivistic cultural norms on Asian people, White people are also affected by individualistic cultural norms. White people tend to utilize problem-focused coping (Wei et al., 2010) as this coping style fits with Western individualistic norms of taking action and control of one's situation. Such coping strategies include, but are not limited to, active coping and planning (Taylor et al., 2004; Lee & Mason, 2014), and social support (Gayman et al., 2014). Certainly, White people also utilize avoidance coping strategies, such as exercise (Taylor et al., 2004), along with substance use and coping humor (Parveen et al., 2013). However, there is no cultural pressure to utilize such coping strategies like the pressure that people of color tend to face (Helms, 1990).

Black-Specific Coping Strategies

Due to the oppressive history and intergenerational trauma that Black Americans have historically faced in the United States, many Black people face toxic stressors that come with racism (Menakem, 2017). A possible response to these toxic stressors is John Henryism, which is the hypothesis that Black people spend lengthy amounts of time utilizing high-effort active coping in order to deal with the stress (James, 1994). In response to this assertion, researchers also found that those who are socialized on how to cope with racism tend to not utilize high-effort active coping such as John Henryism (Blackmon et al., 2016). There is also a vast amount of research dedicated to the role of religion on Black people due to the significant role that churches play in Black culture. The church has influenced family life, prompted political movements, and given people hope in times of despair (Marsiglia & Kulis, 2015). Spirituality also fosters a connection between the Black community, their ancestors, and spirituality (Marsiglia & Kulis, 2015). Research has shown that Black people tend to utilize more positive religious coping than their White counterparts (Chapman & Steger, 2010; Bhui et al., 2008; Greer & Cavalhieri, 2019). Specific values taught in childhood is also an important factor in how Black people cope, particularly to racism. Researchers have found that those who are encouraged to have positive interracial interactions throughout childhood and to engage in cultural activities tend to utilize spiritual-centered and collective coping (Blackmon et al., 2016).

Multiracial Identity Construction and Coping

It is important to consider how multiracial individuals construct their identity and cope in a society filled with dichotomies. Reddy (2018) explained that people are motivated to construct their identities in order to participate in a particular community, which thus means that their identity is constructed with others—individuals and societies—in mind. This idea on identity construction becomes problematic for multiracial people because the exclusivity among social groups and government institutions can cause feelings of not belonging to any group along with racial discrimination. For instance, U.S. social structures that promote dichotomies, such as the census categories, constrain identity development for multiracial individuals (Root, 2003). Because multiracial individuals do not fit a singular racial category, they construct identity differently from those with only one racial identity. Instead of it being a static occurrence, racial identity construction is an active phenomenon that multiracial people undergo at various times throughout their lives (Reddy, 2018). They must also cope with different types of race-related stressors, such as identity ascription from others. This stressor can be a specific form of prejudice for multiracial individuals because it forces an identity on them and takes away their right to undergo their own racial identity construction (Museus et al., 2016). Additionally, multiracial and multicultural individuals who are denied a part of their identity were found to have higher perceived stress and lower cortisol recovery rates (Albuja et al., 2019). These results demonstrate the negative psychological and physiological effects of identity ascription that are unique to multiracial individuals. Multiracial-specific stressors can lead to multiracial-specific coping strategies. Previous research has found that multiracial college students utilize various coping strategies when dealing with prejudice, such as bringing awareness to multiracial issues, social support, accepting the fluidity of being multiracial, and avoiding prejudice-based confrontation (Museus et al., 2015).

Related Mental Health Measures

In addition to perceived stress, examining coping strategies subsequently go hand-in-hand with other mental health measures. For instance, self-compassion was found to be associated with positive reframing in order to cope with negative events (Allen & Leary, 2010). However, differences in self-compassion among racial identities is a relatively new topic of research with conflicting results. Some have

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

found differences in the amount of self-compassion between racial identities (Boyras et al., 2020), but others have suggested otherwise (Lockard et al., 2014). Additionally, resilience is a positive consequence of effective coping strategies (Kubiliene et al., 2015). Racial minorities face the added stress of racism, which further pushes the need for resilience among racial minorities. However, little is understood on what specific coping strategies can lead these racial minorities to resilience.

Current Study

Ethnicity and coping has been shown to influence various health factors, such as blood pressure (Steffen et al., 2001), mental distress (Bhi et al., 2008), and chronic fatigue (Dinos et al., 2009; Njoku et al., 2005). Previous work has compared and contrasted between a couple of identities at a time, but rarely have they compared multiple racial identities for differences in coping strategies. The purpose of the present study was to explore differences in coping strategy use between racial identities. We investigated the relationship between 12 coping strategies and 5 racial identities using the COPE inventory (Carver et al., 1989). We also utilized the Resilience Scale for Adults (Friborg et al., 2006), Self-Compassion Scale (Neff, 2003) and Perceived Stress Scale (Cohen et al., 1983) to further examine other mental health measures that can affect how minorities interact with stressors. We hypothesized that Asian participants would utilize coping strategies that were in line with collectivistic cultural norms such as restraint and acceptance, that Black participants would utilize religious coping, that Multiracial participants would utilize acceptance and instrumental and emotional social support, and that White participants would utilize coping strategies that were in line with individualistic cultural norms such as active coping. Additionally, we hypothesized that participants from historically minoritized communities would report higher levels of perceived stress. Further, we thought that different racial identities might report significant differences in levels of self-compassion and resilience.

Method

Participants and Procedure

After gaining University of Portland institutional review board approval, participants ($N = 898$) were recruited via Amazon Mechanical Turk (MTurk). We utilized MTurk in order to diversify our sample's age and ethnicity while gathering participants during university breaks. Participants were given a small

financial compensation for their participation.

Participants were asked their ethnicity and race. For ethnicity, they could answer "What is your ethnicity?" with Hispanic or Latinx, Not Hispanic or Latinx, Declined, and/or Unavailable/Unknown. For race, they could answer "What is your race? (One or more categories may be marked)" with American Indian/Alaskan Native, Asian, Black, Native Hawaiian/Pacific Islander, White, Some Other Race, Declined, and/or Unavailable. We separated racial identity groups from eight races into five—Asian, Black, White, Multiracial, and Other. Native Hawaiian/Pacific Islander, Some Other Race, Declined, and Unavailable were determined as "Other." Participants who declared two or more races were put into the "Multiracial" group.

The racial breakdown of our sample was 71.16% White, 13.36% Asian, 6.68% Black, 3.23% Multiracial, and 5.57% Other. Our sample consisted of 57.52% women and 42.48% men (age range = 17–80, $M = 36.76$, $SD = 12.05$). Participants completed a series of measures on an online, self-reported study on the biology and psychology of resilience and prosociality.

Measures

The COPE inventory (Carver et al., 1989) was used to determine participants' use of various coping strategies. This particular scale was chosen due to its multidimensional nature of looking at an array of coping subscales rooted in theoretical bases and does not lend itself to an "overall" coping score. Additionally, this scale does not deem any strategy as "adaptive" or "maladaptive," which allows for understanding that some coping techniques are tied to certain cultural traditions, access to resources, and privileges. The scale consists of 60 items total on a 4-point Likert-type scale ranging from 1 (*I usually don't do this at all*) to 4 (*I usually do this a lot*).

The 15 subscales and an example item from each are included here: positive reinterpretation and growth ("I try to grow as a person as a result of the experience."), mental disengagement ("I turn to work or other substitute activities to take my mind off things."), focus on and venting of emotions ("I get upset and let my emotions out."), use of instrumental social support ("I try to get advice from someone about what to do."), active coping ("I concentrate my efforts on doing something about it."), denial ("I say to myself 'this isn't real.'"), religious coping ("I put my trust in God."), humor ("I laugh about the situation."), behavioral disengagement ("I admit to myself that

I can't deal with it, and quit trying.”), restraint (“I restrain myself from doing anything too quickly.”), use of emotional social support (“I discuss my feelings with someone.”), substance use (“I use alcohol or drugs to make myself feel better.”), acceptance (“I get used to the idea that it happened.”), suppression of competing activities (“I keep myself from getting distracted by other thoughts or activities.”), and planning (“I make a plan of action.”; Carver et al., 1989).

Three subscales (denial, behavioral disengagement, and substance use) were omitted from our survey because the scales were included in our larger study on prosociality so these three subscales were explored in other scales within the larger study. Each subscale has four items, and the sum of items for each subscale indicates how much the participant utilizes the coping strategy. Each subscale was examined separately with respect to racial identity.

The Resilience Scale for Adults (Friborg et al., 2006) was used to determine resilience among our participants. The scale consists of 33 items on a 5-point Likert-type scale that varies per item. The sum of items for each subscale suggests how much the participant is resilient in that subscale category. The six subscales and an example item include personal strength/perception of self (“When something unforeseen happens: ‘I always find a solution’ to ‘I often feel bewildered’”), personal strength/perception of future (“My plans for the future are ‘difficult to accomplish’ to ‘possible to accomplish’”), structured style (“I am at my best when I: ‘have a clear goal to strive for’ to ‘can take one day at a time’”), social competence (“I enjoy being: ‘together with other people’ to ‘by myself’”), family cohesion (“I feel: ‘very happy with my family’ to ‘very unhappy with my family’”), and social resources (“I can discuss personal issues with: ‘no one’ to ‘friends/family members’”). We opted to examine the “total resilience” rather than each subscale as an indicator of each participant’s overall resilience, which we then examined for each racial identity.

The Self-Compassion Scale (Neff, 2003) was used to examine differences in the amount of self-compassion between each racial identity. The scale consists of 26 items on a 5-point Likert-type scale ranging from 1 (*almost never*) to 5 (*almost always*). The six subscales and an example item include self-kindness (“I try to be loving towards myself when I’m feeling emotional pain.”), self-judgment (“I’m disapproving and judgmental

about my own flaws and inadequacies.”), common humanity (“When things are going badly for me, I see the difficulties as part of life that everyone goes through.”), isolation (“When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.”), mindfulness (“When something upsets me, I try to keep my emotions in balance.”), and over-identified (“When I’m feeling down, I tend to obsess and fixate on everything that’s wrong.”). We chose to examine total self-compassion rather than each subscale. Total self-compassion was calculated by the mean of each subscale, and the negative subscales (self-judgment, isolation, over-identification) were reverse scored.

The Perceived Stress Scale (Cohen et al., 1983) was used to investigate participants’ perception of the amount of stressful events within their lives as a way to capture how unpredictable did participants perceive their lives to be. The scale has 10 items on a 5-point Likert-type scale ranging from 0 (*never*) to 4 (*very often*). An example of an item within the scale is “In the last month, how often have you been upset because of something that happened unexpectedly.” Negatively stated items were reverse scored and a sum was calculated to obtain total perceived stress.

Results

The internal consistency for all inventories and COPE subscales was determined via Cronbach’s alpha (α). The Cronbach’s α for the COPE inventory was $\alpha = .93$, and its subscales are as follows: positive reinterpretation and growth ($\alpha = .84$), mental disengagement ($\alpha = .57$), venting ($\alpha = .75$), use of instrumental social support ($\alpha = .80$), active coping ($\alpha = .82$), religious coping ($\alpha = .94$), humor ($\alpha = .90$), restraint ($\alpha = .72$), use of emotional social support ($\alpha = .88$), acceptance ($\alpha = .81$), suppression of competing activities ($\alpha = .73$), and planning ($\alpha = .73$). The internal consistency for the additional measures include Resilience Scale ($\alpha = .94$), Self-Compassion Scale ($\alpha = .86$), and Perceived Stress Scale ($\alpha = .90$).

One-way analyses of variance (ANOVAs) were performed with the 12 coping strategies, resilience, self-compassion, and perceived stress as the dependent variables. The ANOVAs revealed that 10 coping strategies, resilience, and perceived stress were statistically significant ($F_s = 2.45\text{--}9.12$; see Table 1), which include positive reinterpretation and growth, mental disengagement, focus on and venting of emotions, use of instrumental social support, active

coping, religious coping, humor, restraint, use of emotional social support, and suppression of competing activities. We then conducted Tukey's Post Hoc Tests for the 10 statistically significant coping strategies and the two statistically significant mental health measures (see Table 2). Tukey's post-hoc tests did not find significance in positive reinterpretation and growth, acceptance, and planning. However, the tests revealed that specific racial identities coped with varying strategies compared to other racial identities.

Multiracial participants tended to utilize more mental disengagement as compared to Black participants ($p = .03$). Asian participants tended to focus on and vent their emotions more than White participants ($p = .04$). Asian participants also utilized instrumental social support more than White participants ($p = .02$) and Other ($p = .01$) participants. Asian participants utilized active coping more than White ($p = .05$) and Other ($p = .02$) participants. Asian and Black participants both tended to utilize more religious coping than White participants ($p < .001$). Asian participants engaged in humor as a coping method more than White ($p < .001$) and Other ($p = .03$) participants. Asian participants also utilized more restraint ($p < .001$) and emotional social support ($p = .03$) than White participants. Asian participants tended to use suppression of competing activities more than White ($p < .001$) and Other ($p = .01$) participants, whereas Black

participants also utilized this strategy more than White participants ($p = .04$).

Asian participants scored significantly higher in resilience compared to Multiracial ($p = .00$) and Other ($p = .04$) participants, and White participants scored higher compared to Multiracial participants ($p = .02$). Additionally, Multiracial participants reported higher levels of stress compared to Asian ($p = .04$), Black ($p = .00$), and White ($p = .01$) participants. Participants categorized as "Other" also reported more stress compared to Black ($p = .01$) and White ($p = .04$) participants.

Discussion

The purpose of this study was to examine whether coping strategy usage varied by racial identity. Taking cultural values such as collectivism along with histories of oppression, we expected to see racial identities conform to coping styles that reflect their respective cultural values. As expected and in line with previous work, Asian and Black participants tended to use more religious coping. Also reflecting previous work, Asian participants tended to use more restraint as a coping mechanism.

Interestingly, Asian participants tended to use a diverse mixture of coping strategies, including focusing on and venting of emotions, instrumental social support, active coping, coping humor, emotional social support, and suppression of competing activities. These findings are noteworthy because these coping strategies directly conflict with Asian collectivistic culture. A possibility for such findings is that perhaps a large portion of our Asian participants are second-generation Asian Americans and beyond, which means that they could also be influenced by American individualistic culture aside from their heritage. Their adherence to avoidance style coping, such as restraint, conveys that Asian collectivistic culture still impacts these participants. However, the country in which they currently reside can play a huge role in how these individuals cope.

Positive reinterpretation and growth, acceptance, and planning were not significantly related to race. We particularly found the lack of significance in acceptance as a bit surprising due to many Asian cultures' norm of accepting situations that they cannot change. For example, in World War II, a common phrase shared among the Japanese who were forced into internment camps was "shikata ga nai," meaning "it cannot be helped." This phrase has clear implications of acceptance of what cannot be changed, such as their internment. The lack of significance could indicate a

TABLE 1

One-Way Analyses of Variance for Each Coping Strategy

Coping Strategies	F	df	p	η^2
Positive reinterpretation and growth	2.45	4, 803	.045*	.012
Mental disengagement	2.56	4, 809	.038*	.012
Focus on and venting of emotions	2.92	4, 804	.020*	.014
Use of instrumental social support	3.88	4, 805	.004*	.019
Active coping	3.26	4, 807	.011*	.016
Religious coping	9.12	4, 804	.000**	.043
Humor	4.20	4, 808	.002*	.020
Restraint	8.04	4, 801	.000**	.039
Use of emotional social support	3.25	4, 798	.012*	.016
Acceptance	1.90	4, 803	.109	.009
Suppression of competing activities	6.96	4, 804	.000**	.034
Planning	1.35	4, 800	.251	.007
Resilience	2.71	4, 655	.029*	.016
Self-compassion	1.63	4, 817	.164	.008
Perceived stress	3.73	4, 893	.005*	.016

Note. * $p < .05$. ** $p < .001$.

shifting trend toward other coping strategies as more Japanese-Americans grow up without the direct experience of World War II and without a parent or grandparent who share their experiences of the war. The same idea can be applied to other Asian ethnicities because younger generations are less likely to grow up with war and other related traumas that they cannot control, such as Southeast Asians in the Vietnam War and Koreans in the Korean War.

Although we found that Multiracial participants used mental disengagement more than Black participants, we were surprised to find no other coping strategies that were significant to Multiracial participants. We expected to find significance in acceptance, instrumental social support, and emotional social support due to past research. There is a possibility that our sample had a plethora of racial combinations that make up our multiracial racial category, so each individual could have different influences from varying cultures.

We were also taken aback to find no coping strategy that White participants predominantly used in comparison to other racial identities. Although we expected to find that White participants used more problem-focused coping strategies due to individualistic cultural norms, we instead found the complete opposite—that Asian participants tended to utilize those coping strategies more than White participants. The lack of any particular coping strategy could indicate that White participants feel comfortable in utilizing a wide variety of coping strategies with no preference in particular. It could also mean that people of color tend to utilize more coping strategies than White participants due to the race-related stressors that only people of color can experience.

The results from the additional mental health measures were unanticipated. Due to race-related stressors that are unique to minorities, we expected to find differences in perceived stress among participants who identify as a minority versus White participants. However, the results suggest that Multiracial participants report the highest level of stress compared to other racial groups. We pondered if these results were due to the added race-related stressors that only Multiracial people face, or if the fact that our Asian and Black participants scored highest in utilizing restraint as a coping strategy would then lead these same participants to hesitate on answering truthfully on a questionnaire on stress. Furthermore, it was surprising to find that Multiracial participants

TABLE 2					
Means (SD) for Racial Identity's Utilization of Each Coping Strategy and Post-Hoc Results					
	Asian	Black	White	Multiracial	Other
Positive reinterpretation and growth	11.69 (2.47)	11.63 (2.83)	11.04 (2.93)	10.63 (3.07)	10.47 (2.86)
Mental disengagement	9.83 (2.62)	9.11 (2.46)	9.63 (2.63)	10.86 (2.69)* vs. Blacks: p = .03	10.16 (2.53)
Focus on and venting of emotions	10.03 (2.90)* vs. Whites: p = .04	8.69 (2.45)	9.24 (2.87)	9.86 (2.93)	9.68 (2.97)
Use of instrumental social support	11.24 (2.42)* vs. Whites: p = .02 vs. Others: p = .01	10.37 (2.96)	10.33 (2.92)	9.70 (2.76)	9.60 (3.02)
Active coping	11.89 (2.63)* vs. Whites: p = .05 vs. Others: p = .02	11.70 (2.89)	11.13 (2.69)	11.25 (3.20)	10.47 (1.95)
Religious coping	10.46 (2.85)* vs. Whites: p = .00	11.15 (3.17)* vs. Whites: p = .00 vs. Others: p = .02	8.86 (3.63)	9.21 (4.05)	8.91 (3.70)
Humor	9.93 (3.25)* vs. Whites: p = .00 vs. Others: p = .03	8.81 (3.19)	8.74 (2.93)	8.79 (2.83)	8.40 (2.54)
Restraint	11.08 (2.37)** vs. Whites: p = .00	10.69 (2.44)	9.75 (2.51)	10.36 (2.67)	10.09 (2.16)
Use of emotional social support	11.06 (2.63)* vs. Whites: p = .03	10.63 (3.21)	10.08 (3.32)	9.39 (3.16)	9.64 (3.23)
Acceptance	11.16 (2.50)	11.06 (2.85)	10.69 (2.67)	11.44 (2.21)	10.18 (2.53)
Suppression of competing activities	11.18 (2.48)** vs. Whites: p = .00 vs. Others: p = .01	11.02 (2.82)* vs. Whites: p = .04	10.01 (2.55)	10.25 (2.49)	9.69 (2.07)
Planning	12.07 (2.59)	11.74 (2.84)	11.43 (2.88)	11.52 (3.33)	11.29 (2.78)
Resilience	23.83 (24.76)* vs. Multiracial: p = .00 vs. Other: p = .04	17.59 (21.08)	18.64 (24.59)* vs. Multiracial: p = .02	5.42 (20.48)	14.00 (24.58)
Self-compassion	3.12 (0.55)	3.29 (0.71)	3.12 (0.87)	3.00 (0.98)	2.89 (0.68)
Perceived stress	26.74 (7.07)	24.32 (8.85)	25.91 (8.88)	30.45 (7.16)* vs. Asian: p = .04 vs. Black: p = .00 vs. White: p = .01	28.50 (7.61) vs. Black: p = .01 vs. White: p = .04

Note. *p < .05. **p < .001.

had lower reports of resilience compared to Asian and White participants. We speculated that the higher perceived stress and lower resilience among Multiracial participants were related, as higher perceived racism was previously found to be correlated with lower resilience (Bellmore et al., 2012). Finally, we also were surprised to find no significance between racial identities in levels of self-compassion, but hope that these results contribute to the growing body of knowledge on the relationship between self-compassion and racial identity as well as knowledge on overall mental health for racial minorities.

We understand that people do not all have the same experiences, so their coping strategies can differ based on context and the individual (Kubiliene et al., 2015), in addition to their cultural upbringing (Neville et al., 2011). Some participants might not have experienced the same levels of racism as others, whereas some may not have experienced racism at all. Stressor context may also vary in participants' minds when they are asked questions about their coping style. Additionally, each participants' level of adherence to their respective culture's ideals on individualism-collectivism can affect their choices in coping strategies. For example, Asian participants could have been using coping strategies that conflict with their collectivistic culture due to the fact that the participants may individually score high on individualism, which thus influence them to utilize problem-focused coping strategies. We understand that these individual differences cannot be fully encapsulated with our study utilizing the COPE inventory (Carver et al., 1989), but we believe that the inventory's move away from "positive" vs. "negative" categorization and move toward "emotion-focused" and "problem-focused" categorization can provide the sufficient and necessary cultural sensitivity when examining people of various backgrounds and experiences. While our study aimed to examine commonality based on racial identity, we acknowledge that every individual within a racial group can have different life experiences.

Limitations and Future Directions

We understand the importance in future explorations to account for age and gender and other demographic variables, because these variables can also shape the way that a person chooses to cope with stressors. A glitch in our data collection unfortunately resulted in not having these data for a significant number of our participants, so

we strongly see the need for more thoughtful and thorough analyses of how age, gender, and socioeconomic status play a role in coping strategies utilized. As previously mentioned, older Asian Americans who have lived through internment camps and war would possibly have different coping strategies than younger generations due to their experiences. On top of generational differences in experiences, each age group has differing norms in acceptable ways to cope, such as substance use in college students versus underaged individuals. Furthermore, traditional gender norms may influence choices in coping strategies, particularly with the ideal that women are expected to be nonconfrontational. Coping strategy choice is made up of a complex weave of race, age, gender, and other intersectional identities. Although this article only highlights one piece of a larger narrative, we hope to elucidate the other missing pieces in future work.

Additionally, the absence of the Latinx community is a limitation in our study. Although there was an option to select "Hispanic or Latinx" when asked "What is your ethnicity?", there was no option to select such when asked "What is your race?" We realize that could bring about confusion to Hispanic participants on what to select for race. Some could have chosen to indicate "White," while others could have chosen "Some Other Race." In the future, we would like to further examine the Latinx community by fixing this discrepancy.

Another limitation is the inability to further specify which Asian ethnicity the participants are. We acknowledge that the term "Asian" is a generalized term that encompasses many distinct nations and cultures. Different Asian ethnicities may experience unique stressors and cultural ideas that affect their well-being. Regional groupings of Asian identities may share common social and cultural experiences that provide insight into the further differences within Asian ethnicities. For example, Southeast Asians may experience prejudice and stress from colorism within Asian communities due to their darker skin tones whereas East Asians are more likely to match the beauty standards of light skin that signify status and wealth (Tran et al., 2017). Follow-up studies will further explore the differences between unique Asian ethnic groups (categorized into East Asians, Southeast Asians, South Asians, and West Asians) and their coping strategies.

Moreover, we recognize the framing of coping as a trait (dispositional) instead of a state (fluctuating) measure can be a disservice to understanding

how situational factors play a role in the coping strategies employed at a given moment (Wright et al., 2015). It is important to unpack how situational factors play a role in coping styles, as well, and we propose a deeper examination of this issue in follow-up investigations.

Finally, we would like to address the diversity within this study's sample. Although our study had a large sample size with respectable amounts of participants within each racial category, the percentage of White participants was disproportionately higher than other racial identities. We also had to combine racial identities such as American Indian/Alaskan Native and Native Hawaiian/Pacific Islander into the "Other" category due to lack of representation within the sample. We understand the importance of a diverse sample due to the nature of our study, so we have intentionally recruited from various cultural clubs at a university for our subsequent studies. We also will begin a research initiative that examines various aspects of mental health, such as coping strategies, specific types of stressors, and colorism, among marginalized community members within the university, as well as a local organization that serves racially marginalized populations.

To build on our current study, we have included an individualism-collectivism scale in our subsequent research in hopes to examine how an individual's level of individualism and collectivism affects their adherence to their racial identities' traditional coping strategies. We have also included a scale on stress type for our future studies to later explore the effect of stress context on coping strategy choice for each racial identity. We would additionally like to explore how gender, age, and country of origin (U.S. vs. non-U.S., Western vs. Eastern) play a role in each racial identities' coping strategies.

Conclusion

The current study has provided a comprehensive look at various racial identities and how these diverse groups of people cope with stressors. Our results corroborate previous research showing that coping strategies differ by racial identity, such as that Asian and Black participants utilize more religious coping than White participants. The study also highlights unique trends in specific coping strategies, such as Asian participants utilizing a wide range of coping strategies that both align and conflict with Asian collectivistic cultural norms. We have found that all three groups of color cope

with differing strategies, yet we have also found that there is no specific coping strategy that White participants employ. These results ultimately suggest that people of color tend to utilize more coping strategies than White people.

As we strive for racial justice in our society, we need to reconceptualize ways we think about ourselves and others (Kendi, 2019). This involves ways that we talk about race and racism, and a lifelong commitment to the self-critique and self-awareness necessary for understanding the history of marginalization and how we participate in upholding or dismantling these systems of oppression within our racial identities. We also need to apply an intersectional approach to illuminate how multiple marginality plays a role in racism and coping styles (Lewis & Grzanka, 2016). Therefore, one important avenue of future research should explore how an individual's level of collectivism and individualism, gender identity, age, socioeconomic status, sexual identity, country of origin, and more affect one's coping style. Because we are examining differences in racial identities, we understand the need to cultivate cultural sensitivity and humility rather than just merely cultural competence (Tervalon & Murray-Garcia, 1998). Therefore, we underscore the need to have the participants in our study reveal their coping strategies to avoid assumptions commonly made about cultural "norms" and to honor these components of their identities. We hope that our study will provide insight to a complex weaving of cultures and personal experiences that affect how we cope, prompt healthcare providers to implement culturally sensitive services to its diverse patients, and contribute helpful knowledge in order to achieve a society that practices cultural humility.

References

- Albuja, A. F., Gaither, S. E., Sanchez, D. T., Straka, B., & Cipollina, R. (2019). Psychophysiological stress responses to bicultural and biracial identity denial. *Journal of Social Issues, 75*(4), 1165–1191. <https://doi.org/10.1111/josi.12347>
- Allen, A. B., & Leary, M. R. (2010). Self-compassion, stress, and coping. *Social and Personality Psychology Compass, 4*(2), 1–12. <https://doi.org/10.1111/j.1751-9004.2009.00246.x>
- Bellmore, A., Nishina, A., You, J., & Ma, T. (2011). School context protective factors against peer ethnic discrimination across the high school years. *American Journal of Community Psychology, 49*(1–2), 98–111. <https://doi.org/10.1007/s10464-011-9443-0>
- Bhui, K., King, M., Dein, S., & O'Conner, W. (2008). Ethnicity and religious coping with mental distress. *Journal of Mental Health, 17*(2), 141–151. <https://doi.org/10.1080/09638230701498408>
- Blackmon, S. M., Coyle, L. D., Davenport, S., Owens, A. C., & Sparrow, C. (2016). Linking racial-ethnic socialization to culture and race-specific coping among African American college students. *Journal of Black Psychology, 42*(6), 549–576. <https://doi.org/10.1177/0095798415617865>
- Boyraz, G., Legros, D. N., & Berger, W. B. (2020). Self-criticism, self-compassion,


WINTER 2020


PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

- and perceived health: Moderating effect of ethnicity. *Journal of General Psychology*, 3(1), 1–19. <https://doi.org/10.1080/00221309.2020.1746232>
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). COPE Inventory [Measurement instrument]. <http://www.midss.org/content/cope-inventory>
- Chai, P. P. M., Krägeloh, C. U., Shepherd, D., & Billington, R. (2011). Stress and quality of life in international and domestic university students: Cultural differences in the use of religious coping. *Mental Health, Religion & Culture*, 15(3), 1–13. <https://doi.org/10.1080/13674676.2011.571665>
- Chang, J. (2015). The interplay between collectivism and social support processes among Asian and Latino American college students. *Asian American Journal of Psychology*, 6(1), 4–14. <https://doi.org/10.1037/a0035820>
- Chapman, L. K., & Steger, M. F. (2010). Race and religion: Differential prediction of anxiety symptoms by religious coping in African American and European American young adults. *Depression and Anxiety*, 27(3), 316–322. <https://doi.org/10.1002/da.20510>
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 386–396. <https://doi.org/10.2307/2136404>
- Compas, B. E., Forsythe, C. J., & Wagner, B. M. (1988). Consistency and variability in causal attributions and coping with stress. *Cognitive Therapy and Research*, 12(3), 305–320. <https://doi.org/10.1007/BF01176192>
- Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82. <https://doi.org/10.1002/da.10113>
- Dinos, S., Khoshaba, B., Ashby, D., White, P. D., Nazroo, J., Wessely, S., & Bhui, K. (2009). A systematic review of chronic fatigue, its syndromes and ethnicity: Prevalence, severity, co-morbidity and coping. *International Journal of Epidemiology*, 38(6), 1554–1570. <https://doi.org/10.1093/ije/dyp147>
- Friás, M. T., Shaver, P. R., & Díaz-Loving, R. (2014). Individualism and collectivism as moderators of the association between attachment insecurities, coping, and social support. *Journal of Social and Personal Relationships*, 31(1), 3–31. <https://doi.org/10.1177/0265407513484631>
- Friborg, O., Hjemdal, O., Rosenvinge, J. H., Martinussen, M., Aslaksen, P. M., Flaten, M. A. (2006). Resilience as a modulator for pain and stress. *Journal of Psychosomatic Research*, 61(2), 213–219. <https://doi.org/10.1016/j.jpsychores.2005.12.007>
- Greer, T. M., & Cavalhieri, K. E. (2019). The role of coping strategies in understanding the effects of institutional racism on mental health outcomes for African American men. *Journal of Black Psychology*, 45(5), 405–433. <https://doi.org/10.1177/0095798419868105>
- Helms, J. E. (Ed.). (1990). *Black and white racial identity: Theory, research and practice*. Greenwood Press.
- Huang, B., Appel, H. B., Ai, A. L., & Lin, C. J. (2012). Religious involvement effects on mental health in Chinese Americans. *Asian Culture and History*, 4(1), 2–12. <https://doi.org/10.5539/ach.v4n1p2>
- Huang, K., Leong, T. L., & Wagner, N. S. (1994). Coping with peer stressors and associated dysphoria: Acculturation differences among Chinese-American children. *Counseling Psychology Quarterly*, 7(1), 53–68. <https://doi.org/10.1080/09515079408254134>
- James, S. A. (1994). John Henryism and the health of African-Americans. *Culture, Medicine and Psychiatry*, 18, 163–182. <https://doi.org/10.1007/BF01379448>
- Kendi, I. X. (2019). *How to be an antiracist*. Penguin Random House.
- Kubiliene, N., Yan, M. C., Kumsa, M. K., & Burman, K. (2014). The response of youth to racial discrimination: Implications for resilience theory. *Journal of Youth Studies*, 18(3), 338–356. <https://doi.org/10.1080/13676261.2014.963535>
- Lee, H., & Mason, D. (2014). Cultural and gender differences in coping strategies between Caucasian American and Korean American older people. *Cross Cultural Gerontology*, 29, 429–446. <https://doi.org/10.1007/s10823-014-9241-x>
- Lei, N., & Pellitteri, J. (2017). Help-seeking and coping behaviors among Asian Americans: The roles of Asian values, emotional intelligence, and optimism. *Asian American Journal of Psychology*, 8(3), 224–234. <https://doi.org/10.1037/aap0000086>
- Lewis, J. A., & Grzanka, P. R. (2016). Applying intersectionality theory to research on perceived racism. In A. N. Alvarez, C. T. H. Liang, & H. A. Neville (Eds.), *Cultural, racial, and ethnic psychology book series. The cost of racism for people of color: Contextualizing experiences of discrimination* (pp. 31–54). <https://doi.org/10.1037/14852-003>
- Lockard, A. J., Hayes, J. A., Neff, K., & Locke, B. D. (2014). Self-compassion among college counseling center clients: An examination of clinical norms and group differences. *Journal of College Counseling*, 17(3), 249–259. <https://doi.org/10.1002/j.2161-1882.2014.00061.x>
- Marsiglia, F. F., & Kulis, S. (2015). *Diversity, oppression, & change: Culturally grounded social work* (2nd ed.). Lyceum Books, Inc.
- Menakem, R. (2017). *My grandmother's hands: Racialized trauma and the pathway to mending our hearts and bodies*. Central Recovery Press.
- Museum, S. D., Lambe Sariñana, S. A., & Kawamata Ryan, T. (2015). A qualitative examination of multiracial students' coping responses to experiences with prejudice and discrimination in college. *Journal of College Student Development*, 56(4), 331–348. <https://doi.org/10.1353/csd.2015.0041>
- Museum, S. D., Lambe Sariñana, S. A., Yee, A. L., & Robinson, T. E. (2016). A qualitative analysis of multiracial students' experiences with prejudice and discrimination in college. *Journal of College Student Development*, 57(6), 680–697. <https://doi.org/10.1353/csd.2016.0068>
- Neff, K. D. (2003). Development and validation of a scale to measure self-compassion. *Self and Identity*, 2(3), 223–250. <https://doi.org/10.1080/15298860390209035>
- Neville, H. A., Heppner, P. P., & Wang, L. (2011). Relations among racial identity attitudes, perceived stressors, and coping styles in African American college students. *Journal of Counseling & Development*, 75(4), 303–311. <https://doi.org/10.1002/j.1556-6676.1997.tb02345.x>
- Njoku, M. G. C., Jason, L. A., & Torres-Harding, S. R. (2005). The relationships among coping styles and fatigue in an ethnically diverse sample. *Ethnicity and Health*, 10(4), 263–278. <https://doi.org/10.1080/13557850500138613>
- Parveen, S., Morrison, V., & Robinson, C. A. (2013). Ethnicity, familism and willingness to care: Important influences on caregiver mood? *Aging & Mental Health*, 17(1), 115–124. <https://doi.org/10.1080/13607863.2012.717251>
- Pendry, N. (2017). The construction of racial identity: Implications for clinical supervision. In J. Bowmas & G. Fredman (Eds.), *Working with embodiment in supervision: A systemic approach* (pp. 19–33). Routledge/Taylor & Francis Group.
- Reddy, G. (2018). Fluidity amidst structure: Multi-racial identity constructions across the life course of Malaysians and Singaporeans. *Social Identities*, 25(3), 1–18. <https://doi.org/10.1080/13504630.2018.1499222>
- Root, M. P. (2003). Multiracial families and children: Implications for educational research and practice. In J. A. Banks & C. A. McGee Banks (Eds.), *Handbook of research on multicultural education* (2nd Ed., pp. 110–124). Jossey-Bass.
- Steffen, P. R., Hinderlitter, A. L., Blumenthal, J. A., & Sherwood, A. (2001). Religious coping, ethnicity, and ambulatory blood pressure. *Psychosomatic Medicine*, 63(4), 523–530. <https://doi.org/10.1097/00006824-200107000-00002>
- Tatum, B. D. (1992). Talking about race, learning about racism: The application of racial identity development theory in the classroom. *Harvard Educational Review*, 62(1), 1–24. <https://doi.org/10.4135/9781446220986.n31>
- Taylor, S. E., Sherman, D. K., Kim, H. S., Jarcho, J., Takagi, K., & Dunagan, M. S. (2004). Culture and social support: Who seeks it and why? *Journal of Personality and Social Psychology*, 87(3), 354–362. <https://doi.org/10.1037/0022-3514.87.3.354>
- Tervalon, M., & Murray-Garcia, J. (1998). Cultural humility versus cultural competence: A critical distinction in defining physician training outcomes in multicultural education. *Journal of Health Care for the Poor and Underserved*, 9(2), 117–125. <https://doi.org/10.1353/hpu.2010.0233>
- Tran, A. G. T. T., Cheng, H., Netland, J. D., & Miyake, E. R. (2017). Far from fairness: Prejudice, skin color, and psychological functioning in Asian Americans. *Cultural Diversity & Ethnic Minority Psychology*, 23(3), 407–415. <https://doi.org/10.1037/cdp0000128>
- Van Gundy, K. T., Howerton-Orcutt, A., & Mills, M. L. (2015). Race, coping style, and substance use disorder among non-Hispanic African American and White young adults in South Florida. *Substance Use & Misuse*, 50(11), 1459–1469. <https://doi.org/10.3109/10826084.2015.1018544>
- Vaughn, A. A., & Roesch, S. C. (2003). Psychological and physical health correlates of coping in minority adolescents. *Journal of Health Psychology*, 8(6), 671–683. <https://doi.org/10.1177/13591053030086002>
- Wei, M., Heppner, P. P., Ku, T., & Liao, K. Y. (2010). Racial discrimination stress, coping, and depressive symptoms among Asian Americans: A moderation analysis. *Asian American Journal of Psychology*, 1(2), 136–150. <https://doi.org/10.1037/a0020157>
- Weisz, J. R., Rothbaum, F. M., & Blackburn, T. C. (1984). Standing out and standing in: The psychology of control in America and Japan. *American Psychologist*, 39(9), 955–969. <https://doi.org/10.1037/0003-066X.39.9.955>
- Wright, R. R., Mohr, C. D., Sinclair, R. R., & Yang, L. Q. (2015). Sometimes less is more: Directed coping with interpersonal stressors at work. *Journal of Organizational Behavior*, 36(6), 786–805. <https://doi.org/10.1002/job.2002>
- Wong, Y. J., Kim, S., & Tran, K. K. (2010). Asian Americans' adherence to Asian values, attributions about depression, and coping strategies. *Cultural Diversity and Ethnic Minority Psychology*, 16(1), 1–8. <https://doi.org/10.1037/a0015045>

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Author Note. Brittney K. Kawakami  <https://orcid.org/0000-0002-8940-9931>

Sabrina G. Legaspi  <https://orcid.org/0000-0003-3597-2371>
Brittney Kawakami will be a graduate student in the Medical Speech Language Pathology Program in the Department of Speech and Hearing Sciences at University of Washington, Seattle, WA.

Sabrina Legaspi will be a graduate student in the Mind, Brain, and Behavior Program in the Department of Psychology at San Francisco State University, San Francisco, CA.

This study was supported by the National Science Foundation Grant BCS-1555596.

Correspondence concerning this article should be addressed to Brittney Kawakami. Email: bkk529@uw.edu

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Psychosocial Stress and Attitudes Toward Substance Use Among College Students: An Exploratory Study

Dominique Kornely^{1,2} and Kameko Halfmann^{1*}

¹Department of Psychology, University of Wisconsin-Platteville

²Department of Psychology, University of Northern Iowa

ABSTRACT. Substance use occurs on college campuses nationwide and is among the top threats to college-student health. The present study aimed to explore the impact of stress on substance use attitudes. The independent variable was acute psychosocial stress, induced using the Trier Social Stress Test. We measured chronic stress using the Adverse Childhood Experiences questionnaire. The Alcohol Purchase Task (i.e., alcohol demand, alcohol breakpoint, alcohol expenditure) and the Cognitive Appraisal of Risky Events-Revised questionnaire (i.e., expected involvement with substances and expected benefits and consequences of using substances) were the dependent variables. We predicted that participants who completed the acute stress task would report greater attitudes toward substance use behaviors and this would be more pronounced for those with higher levels of chronic stress. Acute stress did not affect willingness to pay for alcohol, $F(3, 85) = 0.55, p = .65, \eta_p^2 = 0.02$, or expected positive or negative consequences from engaging in substance use, $F(3, 85) = 0.44, p = .73, \eta_p^2 = 0.02$. There was a small positive association between chronic stress, as measured by adverse childhood experiences, and expected use, $\rho(89) = .22, p = .04$. In exploratory analyses, we found expected positive benefits of substance use to be significantly associated with expected future involvement, whereas expected negative consequences of substance use was associated with expected future involvement. Our results imply that acute and chronic stress were not significant in predicting substance use behaviors. Rather, those who expect benefits are more likely to use substances.

Keywords: acute stress, chronic stress, substance use, alcohol, risky decision-making

College students nationwide engage in substance use (Schulenberg et al., 2017). For example, 58% of 18–22-year-old students reported alcohol use in 2015 and more than 37% reported binge drinking (Substance Abuse and Mental Health Services Administration, 2019). Alcohol and other drug use are among the

top threats to college-student health in the United States (Shillington & Clapp, 2006). In addition, more than 65% of college students reported experiencing moderate to high levels of stress over the past year (American College Health Association, 2020), and stress exposure is linked to alcohol use disorders (Stephens & Wand, 2012). The purpose



Preregistration badge earned for transparent research practices. Preregistration available at <https://osf.io/6stkm>

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

of the present study was to examine the relationship between acute and chronic stress and substance use attitudes among college students.

Understanding the relationship between stress and substance use among college students is important because substance use is a high-risk activity. Substance use is related to health problems, unsafe sexual behavior, and poor academic performance. Specifically, college students who are heavy drinkers are less likely to use protection during sex (Porter & Pryor, 2007). Moreover, alcohol use is negatively related to GPA and graduating with honors, and heavy drinkers are more likely to miss classes and fall behind in schoolwork (Porter & Pryor, 2007).

Stress may be a modifiable lifestyle factor that, if alleviated, could reduce risky substance use behaviors. Stress can be either acute or chronic and may influence decisions to use substances. Acute stress is sudden, novel, intense, lasts a relatively short time, disrupts behavior that is goal-oriented, and requires an immediate response (Ellis, 2006). A chronic stressor can be an ongoing difficulty stemming from a particular event or point in time, such as losing a job, or it can be an ongoing issue not related to a particular event, such as feeling unsure about future goals (Towbes & Cohen, 1996). Both acute and chronic stress activate the hypothalamic-pituitary adrenal (HPA) axis. The HPA axis is a system in the body that produces cortisol and is involved in responding to stressful events and returning the body back to homeostasis. A normal stress response elicits a quick rise in cortisol levels followed by a rapid decline after the stressful event is over.

When an individual experiences chronic stress, cortisol levels increase and do not return the body back to normal because of ongoing stress, which can cause damage to the individual and can lead to health problems. Sustained levels of stress releases high levels of stress hormones (e.g., cortisol) into the body, which has been shown to be damaging to the brain (Sapolsky, 1996, 2003). Such dysfunction in the HPA axis is a risk factor in developing alcohol use disorders and associated with alcohol abuse (Stephens & Wand, 2012). Cortisol also interacts with the brain's reward system to reinforce the effects of alcohol, which contributes to substance abuse (Stephens & Wand, 2012). Substance users may have altered reward pathways (Grant et al., 2006), such that typically rewarding behaviors (e.g., eating) become less rewarding.

Previous research has shown that stress impacts decision-making, specifically decisions regarding risk taking. University students who were exposed

to a stressful task (i.e., giving a speech) had a greater increase in cortisol levels and chose a riskier option more frequently during a decision-making task (Starcke et al., 2008). Furthermore, when studying the relationship between stress (i.e., Trier Social Stress Test, TSST) and financial risks, college students were more likely to take financial risks when under stress (Buckert et al., 2014). These results support the idea that acute stress may lead individuals to engage in risky behaviors.

Chronic stress, such as that experienced due to adverse childhood experiences (ACEs) may also be associated with substance use. Adverse childhood experiences are adverse events, such as abuse, witnessing violence between parents, or having a family member using illegal drugs, that a person might experience from birth to age 18 years. Previous researchers have found that ACEs were related to negative health problems and behaviors including substance use. ACEs accounted for one-half to two-thirds of individuals who have serious problems with drug use (Dube et al., 2003), and the prevalence of substance use increases with higher ACEs scores (Felitti et al., 1998). Dube and colleagues (2003) also found that each additional ACE was associated with an increase in the likelihood of using illicit drugs by the age of 14 and an increase in the risk of continued use into adulthood. Dube and colleagues (2003) explained that substance use may serve as an escape from the emotional pain, anxiety, and anger that accompanies these adverse experiences. Overall, previous research has suggested that individuals who have experienced more adversity in their childhood are more likely to use substances.

The perception and appraisal of stress is an important factor in determining the effects that stressors have on an individual. Perceived stress is defined as a subjective experience; therefore, there is variability in who perceives an event or experience as stressful (Lazarus, 1990; Liston et al., 2009). Appraisal modifies one's perceptions of stress and considers the demands of the environment one is in and the personal beliefs of an individual (Lazarus, 1993). For example, college students who were in more rigorous programs (e.g., pre-medicine) experienced greater perceived stress than those in less rigorous programs.

Perceived stress is also influenced by coping strategies, which suggests that effective coping strategies may prevent the consequences of stress in college students (Neveu et al., 2012). When faced with a psychosocial stressor, individuals assess its significance. This higher order processing of a stimulus and the

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

perception of the stimulus as stressful is thought to activate the HPA axis and the stress response (Liston et al., 2009). Therefore, the perception of a stimulus as being stressful ultimately makes one feel stressed. Individual differences including abuse, major life events, and stressful environments affect one's perception of threat (Juster et al., 2010), which may be why individuals handle stress differently.

Hypotheses

Limited research has simultaneously examined both acute and chronic stress in empirical studies of risky choice and decision-making. Thus, the goal of the present research was to examine the link between stress and attitudes toward substance use. We hypothesized that individuals under acute stress (i.e., induced by the TSST) would make riskier substance use-related choices on the Alcohol Purchase Task (MacKillop & Murphy, 2007) and report greater expected involvement in, positive benefit from, and lower negative consequences of substance use behavior. We predicted that the above effects would be more pronounced for individuals with higher levels of chronic stress, as measured by the ACE questionnaire.

Method

Participants

We conducted a power analysis in G*Power (3.1.9.2) for a multivariate analysis of variance (MANOVA) with a small-medium effect size, $\alpha = .05$, power = .80, number of groups = 6, number of predictors = 2, and response variables = 3. This power analysis indicated a sample size of $N = 80$. To account for the possibility of a smaller than expected effect size and feasibility based on time, money, and personnel, we aimed to achieve a sample size of $N = 100$. Participants who were recruited through a class were compensated with extra credit as seen fit by their professors. Participants who were recruited via posters hung around the university were compensated with \$15 gift cards to Amazon ($n = 41$ participants were compensated with gift cards). Data collection occurred in classrooms on the University of Wisconsin Platteville's campus. In-person participants were randomly assigned to either the stress condition or the control condition by using a randomizer on Excel to determine which participants were in each condition. However, due to personnel constraints, if there were not two researchers available, some cases were conducted as the control condition rather than the stress condition.

A total of 108 individuals started this research study. After excluding 16 participants who completed between 2% and 74% of the study, and three participants who were outliers (three standard deviations above the mean) on one of the dependent variables, our final sample included 89 participants. The participants' average age was 20 years ($SD = 2.12$ years). Notably, the average age of participants was under the legal alcohol purchase and consumption age. Of these, 75.3% were women, 24.7% were men, demographics reflected those of the university.

Twenty-eight participants were included in the stress condition and 61 participants completed the control condition. Twenty-seven of the 61 control participants completed the control task in the laboratory. Due to lack of personnel required to run the stress condition and the presence of time constraints (i.e., schedule differences of researchers), 34 participants completed the control condition online, which deviates from our original preregistration. In-person control participants ($M_{age} = 20.52$, $SD = 1.42$) and experimental participants ($M_{age} = 20.50$ years, $SD = 3.04$ years) were older than the online control participants ($M_{age} = 19.18$, $SD = 1.31$), $F(2, 86) = 4.47$, $p = .01$. Initial analyses were conducted with all control participants grouped together; follow up analyses were conducted to control for age and excluding the online control participants; however, results did not differ and are therefore not reported in detail.

Design

We originally planned to use a 2 x 3 between-participant factorial design with acute psychosocial stress (i.e., stressed and unstressed) as our main independent variable and adverse childhood experiences as a participant variable, as reported in our preregistration. The psychosocial stress was induced using the TSST. ACEs were a participant variable, and we planned to use three levels—no ACEs, 1–2 ACEs, and 3+ ACEs. However, we did not have enough power to detect an interaction effect. Therefore, we report the results from a between-participant design with acute psychosocial stress as our independent variable. We used ACEs as a continuous predictor variable in a separate analysis.

We measured six dependent variables: alcohol demand, alcohol breakpoint, alcohol highest expenditure, expected involvement with drugs/alcohol, expected gains of using drugs/alcohol, and expected costs of using drugs/alcohol.

Alcohol demand was measured by how many drinks a participant purchased at \$0.00 in the Alcohol Purchase Task (described more below). Alcohol breakpoint was the price at which participants were no longer willing to purchase a drink in the Alcohol Purchase Task. Alcohol highest expenditure was the largest amount paid at a price point during the Alcohol Purchase Task. Expected involvement with drugs/alcohol, expected gains of using drugs/alcohol, and expected costs of using drugs/alcohol were all measured by scoring participants' answers to the Cognitive Appraisal of Risky Events-Revised (CARE-R) questionnaire (Katz et al., 2000).

Materials

Except for the TSST, all questionnaires were completed online using Qualtrics. The stress group and in-person control group completed the survey using the computer in the lab. Participants in the online control condition completed the survey using their own devices. Reliability for all relevant measures was computed and is reported below. All scales used have evidence for their validity.

Demographics

Participants first completed the demographic questionnaire that collected data on age, gender, year in school, race/ethnicity, area raised in, current housing location, first-generation status, employment status, and academic college. As part of the demographics section, participants also completed the Perceived Stress Scale, Childhood Socioeconomic Status Questionnaire, and the patient health questionnaire. These additional scales were not used in analysis.

Adverse Childhood Experiences Questionnaire (ACEs)

The ACEs questionnaire (Felitti et al., 1998) consisted of 10 items and measures participants' history of abuse and household dysfunction from birth through the age of 18. The categories of abuse included psychological, physical, and sexual abuse. The categories of household dysfunction included substance use, mental illness, violence toward a parent/caregiver, and criminal behavior. For example, an item on the ACEs questionnaire asked participants if they lived with someone who was a problem drinker or alcoholic. Answering yes to an item gave participants a score of 1 and answering no gave participants a score of 0. Higher scores indicated experiencing more adverse events in childhood ($\alpha = .80$).

The Cognitive Appraisal of Risky Events Revised (CARE-R)

For the CARE-R (Katz et al., 2000), participants answered questions on a 7-point Likert-type scale regarding their views on drugs and alcohol. The questions used in this study were taken from the drugs/alcohol items from the original questionnaire, which has established reliability and validity (Katz et al., 2000). We included the following sections from the CARE-R in our study: Number of Times in the Past 6 Months ($\alpha = .83$), Expected Involvement ($\alpha = .84$), Likelihood of Positive Consequences ($\alpha = .89$), and Likelihood of Negative Consequences ($\alpha = .97$). The first section asked participants how many times in the past 6 months they tried/used drugs other than alcohol, drove after drinking, and how much and often they drank. This section was given to participants in the demographics section of the questionnaire to determine their typical drinking behavior. The section on expected involvement contained items that were used to determine the likelihood they would exhibit similar behaviors in the future compared to those asked about in the past 6 months. The items contained in the positive and negative consequences sections were used to determine if participants thought using substances would result in positive or negative outcomes (e.g., feeling good, spending time with friends, becoming sick, losing money).

Emotion Visual Analog Scale

For the visual analog scales (Kelly et al., 2008), participants indicated their level of calm, fear, happiness, and irritability using a visual analog scale. These scales range from 0 (*not at all*) to 100 (*most ever*). The emotion word scale was used throughout the experiment (i.e., beginning of study, before stress manipulation, after stress manipulation, end of study) as a manipulation check to see if the stress manipulation had an effect on participants' emotions. Participants in the control condition completed the scale at the same time points throughout the study as a comparison.

Primary Appraisal and Secondary Appraisal

The Primary Appraisal and Secondary Appraisal scales (Gaab et al., 2005) were made up of 16 items to assess primary and secondary stress appraisal directly related to the stress manipulation. Participants ranked how relevant each item is to themselves on a 6-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The

Primary Appraisal portion of the scale assessed how challenging (4 items; $\alpha = .51$) and threatening (4 items; $\alpha = .90$) the situation is. The Secondary Appraisal portion of the scales assessed how the situation affects participants' self-concept (4 items; $\alpha = .71$) and their ability to control the situation (4 items; $\alpha = .65$). The primary appraisals gauged participants' perception of the situation, whereas the secondary appraisal scales gauged participants' perceived coping resources. We had good reliability for the Threat scale, adequate reliability for the Self-Concept scale, and poor or questionable reliability for the Challenge and Control facets; therefore, neither Challenge nor Control were included in subsequent analyses.

Trier Social Stress Test (TSST)

The TSST (Payne et al., 1993) required participants to prepare and present a speech in a short amount of time and to respond verbally to a challenging arithmetic problem in front of evaluators. This task is a well-validated standardized protocol for studies of stress and capable of inducing a reliable stress response (see protocol below).

Alcohol Purchase Task

The Alcohol Purchase Task (MacKillop et al., 2010) asked participants to estimate how many drinks they would typically consume at different prices. The drinks used in this task were domestic beer (12 oz.), wine (5 oz.), shots of hard liquor (1.5 oz.), or mixed drinks containing one shot of liquor. The Alcohol Purchase Task used 16 prices, ranging from \$0 per drink to \$1,120 per drink. A meta-analysis of the alcohol purchase task demonstrated that it showed good construct validity (Kiselic et al., 2016)

Procedure

After gaining approval from the Institutional Review Board at the University of Wisconsin Platteville, we preregistered this study's materials and analyses at <https://osf.io/6stkm> on the Open Science Framework.

The female primary investigator welcomed participants to the lab space and seated them at a desk. The same researcher gave the participants a consent form to review and went over informed consent with the participants. Participants were informed that their participation was voluntary, and they could stop at any point if they no longer wished to continue. Participants who agreed to participate were instructed to use the computer to complete the survey. The visual analog scales were

completed by participants at the beginning of the study, before the stress manipulation, after the stress manipulation, and at the end of the study. After the first visual analog scale was completed, all participants completed the demographic survey, the Perceived Stress Scale, the ACEs survey, the Childhood Socioeconomic Status Survey, and the Patient Health Questionnaire-4. Then, participants completed the Number of Times in the Past 6 Months section from the CARE-R questionnaire.

After completing the CARE-R questions, participants in the control condition completed the filler task of reading a magazine (in print) for the same duration of the experimental condition (approximately 15 minutes). After 5 minutes, the control participants completed the Primary Appraisal and Secondary Appraisal scales; they then continued the filler task for the remainder of the time. Participants in the online control condition did not have a filler task to complete because they were not in-person to monitor a task.

Participants in the experimental condition were instructed to prepare a speech on why they would be the best applicant for a job. They were given four jobs to choose from: advertising, banking, manufacturing, and personal caregiver (Oda & Kikuchi, 2013). The procedure for the TSST followed the procedure explained in Payne and colleagues (2002) and Kirschbaum and colleagues (1993). Participants gave the speech in front of a one-way mirror and were told that evaluators would be scoring them on the other side. There was also a camera and monitor in the room with participants under the impression that they might be recorded (but they were not; Payne et al., 2002).

Participants were given 5 minutes to prepare an outline for their speech. After 5 minutes, their notes were taken from them and they were told that they had to give their speech from memory. At this time, participants completed the Primary Appraisal and Secondary Appraisal scales. Participants were given 5 minutes to present their speech. If participants stopped before the 5 minutes were up, evaluators prompted them to continue going. For the first time stopping, an evaluator said, "You still have time left. Please continue." For the second time stopping, an evaluator was quiet for 20 seconds to see if the participants continued on their own. If the participants did not continue, an evaluator prompted them with "You still have time remaining" (Kirschbaum et al., 1993). Most participants continued after being prompted, but some did not have anything else to say so they stood there waiting for the 5 minutes to be up.

No participants chose to leave the study due to the manipulation. After the speech portion of the TSST, participants completed the math portion of the test, which also took 5 minutes to complete. Participants were instructed to serially subtract 13 from the starting number of 1,022. If a participant got a number incorrect, they were prompted to start over from the number 1,022 with an evaluator saying, "Stop. Please start again at 1,022" (Kirschbaum et al., 1993).

After the TSST or filler, participants were then instructed to complete the Alcohol Purchase Task, as if they were in a typical drinking situation. After the Alcohol Purchase Task was completed, participants completed the Expected Involvement, Likelihood of Positive Consequences, and Likelihood of Negative Consequences of the CARE-R questionnaire. Following the completion of the study, participants were debriefed orally and given a copy of our debriefing form. The online control participants received an electronic copy of the debriefing form. The debriefing form included information for the university's counseling services in the event that participants experienced any distress from participating in the study (e.g., ACEs questionnaire, stress manipulation, substance use).

Results

Descriptive Statistics

Descriptive statistics are presented in Table 1. Several of our dependent variables were positively skewed. Therefore, we conducted nonparametric tests, which are also reported in Table 1.

First, we checked for any baseline differences between the in-person control and online control group. In-person control participants had a lower maximum expenditure on the Alcohol Purchase Task, $t(59) = -2.0, p = .05$. At Time Point 3, the in-person control participants had slightly higher levels of irritability, $t(59) = -2.11, p = .04$, and lower levels of calmness, $t(59) = 2.25, p = .03$, relative to the online control participants. Otherwise the in-person control participants did not differ from the online control participants. We also checked for differences based on participants' gender. Female and male participants were similar on scores of the Alcohol Purchase Task and the CARE-R, all $t_s(87) < 1.60$, all $p_s > .10$, all *Hedge's g*s < 0.40 . Note that degrees of freedom differ due to missing data for one participant.

We examined the number of participants who had engaged in various activities related to alcohol or substance use in the past 6 months (see Table 2). Then we examined participants' expected negative consequences and expected positive

benefits from alcohol and substance use activities. Participants reported higher expected negative consequences compared to positive benefits from

TABLE 1

Descriptive Statistics and Effect Sizes for the Experimental and Control Groups

	Experimental <i>M(SD)</i>	Control <i>M(SD)</i>	Min– Max	Mdn	Hedge's <i>g</i>	Mann Whitney- <i>U</i> <i>p</i>
Demographic	<i>N</i>	28	61			
Characteristics						
Gender		82% F	72% F			
Age	20.5 (3.0)	19.8(1.5)	18–35	20	0.34	.25
Childhood SES	12.5 (4.1)	12.5(4.3)	4–21	13	0.00	.98
Depression	0.8 (0.9)	1.4(1.6)	0–6	1	0.42	.15
Anxiety	2.4 (1.7)	2.9(2.0)	0–6	2	0.26	.26
Perceived stress	24.3 (6.2)	26.4(7.4)	9–50	26	0.30	.28
ACEs	1.9 (2.0)	1.7(2.3)	0–9	1	0.09	.22
Past involvement [†]	24.5 (8.4)	22.2(9.9)	14–61	21	0.21	.12
Dependent Variables						
CARE-R positive	26.5 (12.3)	28.9(14.9)	13–69	24	0.17	.68
CARE-R negative	69.7 (21.3)	67.4(23.8)	14–98	74	0.10	.98
CARE-R expected	27.3 (11.6)	27.0(13.2)	14–51	23	0.02	.76
Alcohol demand	9.0 (8.3)	8.4(7.3)	0–30	7	0.08	.91
Alcohol breakpoint	18.8 (18.1)	19.9(21.7)	0–75	11	0.05	.71
Max expenditure	13.0 (10.6)	15.6(15.9)	0–70	12	0.18	.89

Note. SES = Socioeconomic Status; ACEs = Adverse Childhood Experiences; CARE-R = Cognitive Appraisal of Risky Events-Revised Questionnaire.
[†]*n* = 87 (two missing scores from control condition)

TABLE 2

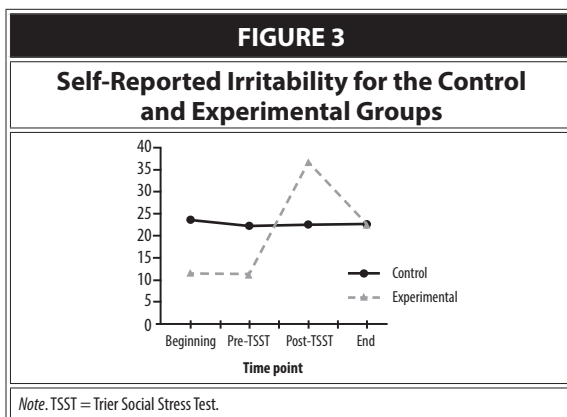
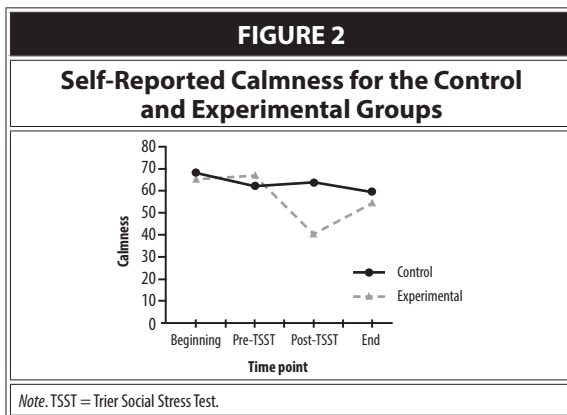
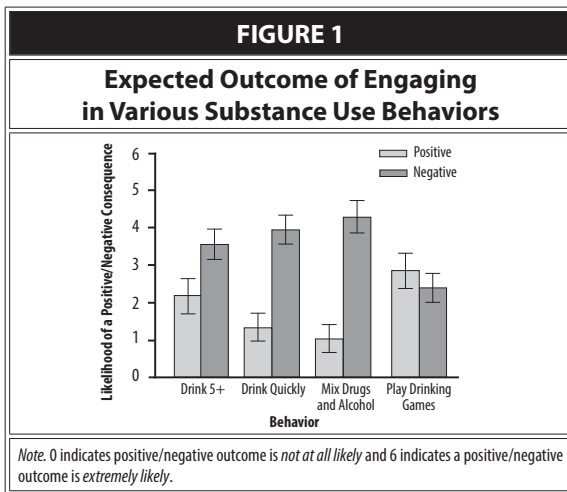
Breakdown of Past 6 Months Engagement in Various Substance Use Behaviors

Frequency (past 6 months)	0 times	1 time	2–4 times	5–9 times	10–20 times	21–30 times	31+ times
Tried marijuana	55	7	10	2	5	2	8
Tried cocaine	86	2	0	1	0	0	0
Tried hallucinogens	86	3	0	0	0	0	0
Amphetamines	87	0	2	0	0	0	0
Driven (1–2)	58	13	11	6	0	0	1
Driven (3–4)	78	3	5	1	1	0	1
Driven (5+)	83	3	0	1	1	0	1
5+ drinks	35	6	14	7	18	5	4
Too quickly	37	13	16	10	8	5	0
Mixed drugs/alcohol	71	4	6	5	2	0	1
Played drinking game	38	9	14	7	11	7	3
Rode in a car	56	11	15	3	4	0	0

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

engaging in substance use behaviors (see Figure 1). We conducted a paired-samples *t* test to compare participants' expected negative consequences to their expected positive benefits. For example, participants expected more negative consequences than positive benefits if they consumed more than five alcoholic beverages in one sitting, $t(88) = -4.02, p < .001, d = 0.43$. There was not a difference between expected positive benefits compared to expected negative consequences as a result of playing drinking games, $t(88) = 1.23, p = .22, d = 0.13$.



Manipulation Check

We conducted four mixed ANOVAs using the data collected from the visual analog scales with time (i.e., beginning of experiment, before TSST or filler, after TSST or filler, end of experiment) as a repeated measure and condition (i.e., stressed and control) as a between participant factor. We observed a condition by time interaction for each of the four emotions. We examined the simple effects at Time Point 3 (i.e., post TSST or post filler). Participants in the stress condition felt more irritable, $t(37.65) = -2.08, p = .04$, Hedges' $g = 0.56$ (see Figure 2), less calm, $t(43.81) = 3.23, p = .002, g = 0.80$ (see Figure 3), and less happy, $t(87) = 2.57, p = .01, g = 0.59$, following the TSST compared to the control condition. Participants did not differ in fear, $t(40.00) = -1.57, p = .12, g = 0.40$. Many of the above tests did not meet Levene's test for equality of variances, meaning we did not meet the homogeneity of variance assumption. In these cases, we did not assume equal variances and used the corrected values based on adjusted degrees of freedom to account for unequal variances.

Hypothesis 1: Acute Psychosocial Stress Will Increase Substance Use Behaviors

We first conducted our planned analyses outlined in our preregistration. We conducted two MANOVAs to test for the effect of acute stress (i.e., induced by the TSST) on substance use attitudes. Participants in the stress condition did not differ from the participants in the control condition on the Alcohol Purchase Task (i.e., alcohol demand, breakpoint, or max expenditure), $F(3,85) = 0.55, p = .65, \eta_p^2 = 0.02$. Participants in the stress condition did not differ from participants in the control condition on the CARE-R, $F(3,85) = 0.44, p = .73, \eta_p^2 = 0.02$. Because our data were skewed, we conducted unplanned nonparametric tests and, again, did not find an effect of stress on substance use behaviors (see Table 1 for *p* values from a Mann-Whitney U test).

Hypothesis 2: ACEs Will Be Associated With Substance Use Behaviors

We did not have enough power to detect whether there was an interaction between childhood adversity (ACEs) and the TSST on substance use behaviors, which was planned in our preregistration. Instead, we tested whether there was a relationship between childhood adversity and substance use behavior. We conducted simple bivariate Spearman's ρ correlations. We did not find a relationship between ACEs and alcohol demand, alcohol breakpoint, alcohol maximum expenditure,

CARE-R positive, or CARE-R negative, $ps > .07$. There was a small positive association between ACEs and CARE-R expected use, $\rho(89) = .22, p = .04$.

Planned Exploratory Analyses

In our preregistration, we planned to examine simple bivariate correlations among our dependent variables. These exploratory analyses may inform future research. We used Spearman ρ correlations to examine bivariate relationships because many of our measures were not normally distributed.

There were positive correlations between expected positive benefits from substance use and past use, $\rho(87) = .67, p < .001$, expected use, $\rho(89) = 0.76, p < .001$ (see Figure 4), alcohol demand, $\rho(89) = 0.38, p < .001$, alcohol breakpoint, $\rho(89) = 0.37, p < .001$, and alcohol maximum expenditure, $\rho(89) = 0.46, p < .001$. Expected negative consequences were negatively associated with expected use, $\rho(89) = -0.24, p = .03$, and not associated with alcohol demand, breakpoint, or maximum expenditure (all $ps > .09$).

Unplanned Analysis

We conducted an unplanned multiple regression with expected positive benefits, expected negative consequences, past involvement, and age as predictors and expected future use as the outcome, $F(4,82) = 63.17, p < .001, R^2 = .76$. Past involvement and positive benefits both significantly predicted anticipated future use (see Table 3).

Discussion

In the present study, we aimed to examine the impact of stress on substance use attitudes. We predicted that acute stress (i.e., induced by the TSST) would lead to higher anticipated use of and more positive attitudes toward substance use, as measured by the Alcohol Purchase Task and CARE-R. However, we did not find support for our hypothesis. Similarly, our prediction that the effects of stress on substance use attitudes would be greater in individuals who have experienced higher levels of chronic stress, as measured by the ACEs questionnaire, was also not supported.

Our results are inconsistent with previous research that has found both acute and chronic stress to predict substance use. For example, stress exposure is a risk factor in developing alcohol use disorders (Stephens & Wand, 2012). The American College Health Association (2020) reported that 65% of college students experienced moderate to high levels of stress over the past year. Because the induced acute stressor was known to be an

experimental manipulation, and not something directly affecting the lives of participants outside of the experiment, it is likely that the TSST was just a very short-term stressor. It may be that introducing a new acute stress (i.e., the TSST) did not lead to a substantive enough increase in relative stress to impact substance use attitudes. In other words, chronic stress, such as that induced by ACEs, may be a more important predictor of substance use attitudes or behaviors.

We did find a small positive association between ACEs and expected future use, which is consistent with research showing that the presence of even one ACE increases the likelihood of alcohol use during adolescence (Dube et al., 2006). Chronic stress leads to the secretion of the stress hormone cortisol, which can impair normal functioning of the prefrontal cortex and affect decision-making, which relates to risky

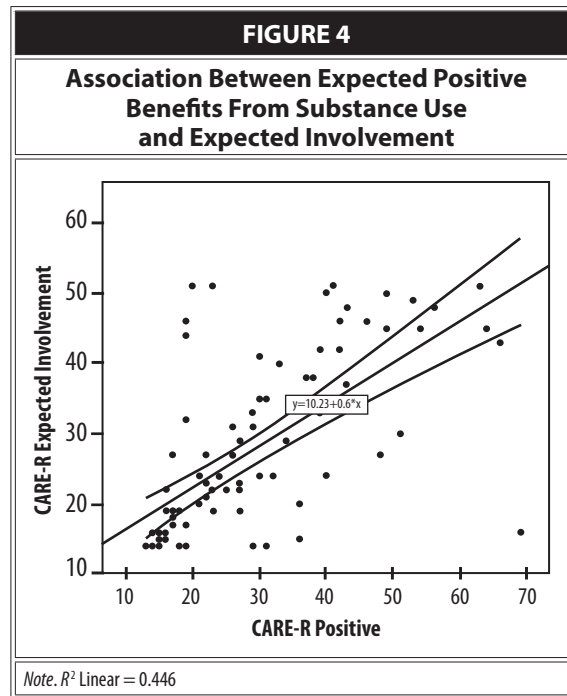


TABLE 3
Significant Predictors of Anticipated Future Use of Substances

	B(SE)	B	t	p
Constant	-9.04(6.88)	N/A	-1.32	.19
Age	0.39(0.22)	0.07	1.18	.24
Past involvement	0.96(0.10)	0.71	9.89	<.001
Positive benefits	0.19(0.06)	0.21	3.02	.003
Negative Consequences	0.01(0.03)	0.02	0.42	.68

decisions such as using substances (Balleine, 2007; Liston et al., 2009; Starcke & Brand, 2016; Stephens & Wand, 2012). We did not find a relationship between ACEs and any other measures of substance use, though, such as on the Alcohol Purchase Task or expected positive benefits or negative consequences. This may indicate that ACEs predict different levels of expected substance use, regardless of the benefits or consequences. Similarly, it may mean that ACEs predict expected substance use but not the amount of money participants are willing to spend on alcohol or the quantity of alcohol participants intend to consume, as measured by the Alcohol Purchase Task. In fact, third variables such as financial disparities or constraints related to being an undergraduate student may be an important future area to explore related to substance use.

Our results are not in line with previous research that has found both acute and chronic stress to be related to one's tendency to use substances. For example, stress exposure is a risk factor in developing alcohol use disorders (Stephens & Wand, 2012). Secretion of cortisol due to chronic stress can impair normal functioning of the prefrontal cortex and decision-making, and has been shown to lead to risky decisions such as using substances (Balleine, 2007; Liston et al., 2009; Starcke & Brand, 2016; Stephens & Wand, 2012). In fact, some research has indicated that the presence of even one ACE increases the likelihood of alcohol use during adolescence (Dube et al., 2006).

Another possible explanation for our results not aligning with previous literature could be explained by a third variable. For example, stress may not play a role in substance use if an individual has healthy coping methods. For example, inverse relationships between coping and substance use have occurred at high levels of stress, which indicates that good coping skills can reduce the likelihood of substance use behaviors (Wills, 1986). Certain personality traits may also provide insight into individual differences that may predict substance use behaviors. For example, greater use of illicit substances and smoking are related to negative affect, which suggests that individuals who have more negative affect may use substances to reduce negative emotional states. In comparison, individuals who are more conscientious, self-disciplined, and less impulsive report less alcohol and tobacco use. Individuals with these traits are also less likely to use illicit substances (Kashdan et al., 2005).

Limitations

Our results might be due to the limitations of our study. Our main limitation is a smaller sample size than we were aiming for (goal $N = 100$). We were only able to collect a subset of the data in-person for the stress and control conditions, which adds noise to the data. There was also substantial within-group variability in substance use attitudes; therefore, we might have been underpowered to detect small effects. However, means were in the opposite direction than hypothesized (i.e., participants in the stressed condition generally had lower scores on the Alcohol Purchase Task and CARE-R), which suggests that, if there was an undetected effect of psychosocial stress on substance use that it is small, and there may be other, more important factors that influence substance use behaviors among college students.

Future Directions

Although neither of our hypotheses were supported, our exploratory analyses offer several avenues for future research. First, we found that college students tended to put more value on the benefits as compared to consequences of using substances, such as being able to spend time with friends and socialize. This finding is supported by previous research showing that many students continued to drink regardless of the occurrence of negative consequences and that students' perceptions of certain experiences with alcohol, including facilitating social interactions, may be a factor in future drinking behaviors (Lee et al., 2011).

Because positive benefits seem to hold more value to students than the negative consequences, future intervention research should focus on reducing the appeal of positive benefits. Current interventions suggest emotional support and open communication influences adolescents' self-control, competence, peer association, and builds resilience in the face of adversity (Wills & Yaeger, 2003), which may buffer the potential benefits of using substances.

One positive benefit related to substance use, socialization, can serve as both a risk factor leading to an increased risk of substance use, or it can be a protective factor leading to a decreased risk of substance use depending on the tendency of use in the peer group (Andrews et al., 2002). Substance use similarities among young adult peers were found in cigarette use, binge drinking, and marijuana use (Andrews et al., 2002), which suggests that peer use influences one's substance use behaviors.

Furthermore, future research should reexamine the relationship between stress and substance use attitudes with a larger sample. Future research should also focus on how the expectation of positive benefits relate to substance use behaviors in college students. These results may inform future substance use interventions by providing insight into students' attributions of substance use and their perceptions on benefits and consequences. Future interventions should consider social support, peer influence, and other protective factors to help prevent problematic substance use attitudes and behaviors.

Conclusion

In summary, we examined the relationship between psychosocial stress and substance use. We did not find evidence for a relationship between acute stress and substance use attitudes, and we only found a small association between chronic stress and expected future use. In an exploratory analysis, we found that expected positive benefits were the strongest predictor of expected future substances. Understanding factors that predict college students' substance use attitudes is important because substance use is common on college campuses and leads to negative health outcomes. Future research should focus on methods to reduce college students' expected positive benefits from substance use and whether this subsequently could reduce substance use on college campuses.

References


- American College Health Association. (2020). *American College Health Association-National College Health Assessment III: Undergraduate Student Reference Group Executive Summary 2019*. https://www.acha.org/documents/ncha/NCHA-III_Fall_2019_Undergraduate_Reference_Group_Executive_Summary.pdf
- Andrews, J. A., Tildesley, E., Hops, H., & Li, F. (2002). The influence of peers on young adult substance use. *Health Psychology, 21*(4), 349–357. <http://doi.org/10.1037/0278-6133.21.4.349>
- Balleine, B. W. (2007). The neural basis of choice and decision making. *Journal of Neuroscience, 27*(31), 8159–8160. <http://doi.org/10.1523/JNEUROSCI.1939-07.2007>
- Buckert, M., Schwieren, C., Kudielka, B. M., & Fiebach, C. J. (2014). Acute stress affects risk taking but not ambiguity aversion. *Frontiers in Neuroscience, 8*, 82. <http://doi.org/10.3389/fnins.2014.00082>
- Cohen, S., & Janicki-Deverts, D. (2012). Who's stressed? Distributions of psychological stress in the United States in probability samples from 1983, 2006, and 2009. *Journal of Applied Social Psychology, 42*(6), 1320–1334. <http://doi.org/10.1111/j.1559-1816.2012.00900.x>
- Dube, S. R., Felitti, V. J., Dong, M., Chapman, D. P., Giles, W. H., & Anda, R. F. (2003). Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: The adverse childhood experiences study. *Pediatrics, 111*(3), 564–572. <http://doi.org/10.1542/peds.111.3.564>
- Dube, S. R., Miller, J. W., Brown, D. W., Giles, W. H., Felitti, V. J., Dong, M., & Anda, R. F. (2006). Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health, 38*(4), 444.e1–10. <http://doi.org/10.1016/j.jadohealth.2005.06.006>
- Ellis, A. P. J. (2006). System breakdown: The role of mental models and transactive memory in the relationship between acute stress and team performance. *Academy of Management Journal, 49*(3), 576–589. <http://doi.org/10.5465/amj.2006.21794674>
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine, 14*(4), 245–258. [http://doi.org/10.1016/S0749-3797\(98\)00017-8](http://doi.org/10.1016/S0749-3797(98)00017-8)
- Gaab, J., Rohleder, N., Nater, U. M., & Ehler, U. (2005). Psychological determinants of the cortisol stress response: The role of anticipatory cognitive appraisal. *Psychoneuroendocrinology, 30*(6), 599–610. <http://doi.org/10.1016/j.psyneuen.2005.02.001>
- Grant, J. E., Brewer, J. A., & Potenza, M. N. (2006). The neurobiology of substance and behavioral addictions. *CNS Spectrums, 11*(12), 924–930. <http://doi.org/10.1017/s109285290001511x>
- Griskevicius, V., Tybur, J. M., Delton, A. W., & Robertson, T. E. (2011). The influence of mortality and socioeconomic status on risk and delayed rewards: A life history theory approach. *Journal of Personality and Social Psychology, 100*(6), 1015–1026. <http://doi.org/10.1037/a0022403>
- Juster, R.-P., McEwen, B. S., & Lupien, S. J. (2010). Allostatic load biomarkers of chronic stress and impact on health and cognition. *Neuroscience & Biobehavioral Reviews, 35*(1), 2–16. <http://doi.org/10.1016/j.neubiorev.2009.10.002>
- Kashdan, T. B., Vetter, C. J., & Collins, R. L. (2005). Substance use in young adults: Associations with personality and gender. *Addictive Behaviors, 30*(2), 259–269. <http://doi.org/10.1016/j.addbeh.2004.05.014>
- Katz, E. C., Fromme, K., & D'Amico, E. J. (2000). Effects of outcome expectancies and personality on young adults' illicit drug use, heavy drinking, and risky sexual behavior. *Cognitive Therapy and Research, 24*, 1–22. <http://doi.org/10.1023/A:1005460107337>
- Kelly, M. M., Tyrka, A. R., Anderson, G. M., Price, L. H., & Carpenter, L. L. (2008). Sex differences in emotional and physiological responses to the Trier Social Stress Test. *Journal of Behavior Therapy and Experimental Psychiatry, 39*(1), 87–98. <http://doi.org/10.1016/j.jbtep.2007.02.003>
- Kirschbaum, C., Pirke, K. M., & Hellhammer, D. H. (1993). The 'Trier Social Stress Test'—a tool for investigating psychobiological stress responses in a laboratory setting. *Neuropsychobiology, 28*(1–2), 76–81. <http://doi.org/10.1159/000119004>
- Kiselica, A. M., Webber, T. A., & Bornovalova, M. A. (2016). Validity of the Alcohol Purchase Task: A meta-analysis. *Addiction, 111*(5), 806–816. <http://doi.org/10.1111/add.13254>
- Kroenke, K., Spitzer, R. L., Williams, J. B., & Löwe, B. (2009). An ultra-brief screening scale for anxiety and depression: The PHQ-4. *Psychosomatics, 50*(6), 613–621. <http://doi.org/10.1176/appi.psy.50.6.613>
- Lazarus, R. S. (1990). Theory-based stress measurement. *Psychological Inquiry, 1*(1), 3–13. http://doi.org/10.1207/s15327965pli0101_1
- Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology, 44*, 1–22. <http://doi.org/10.1146/annurev.ps.44.020193.000245>
- Lee, C. M., Maggs, J. L., Neighbors, C., & Patrick, M. E. (2011). Positive and negative alcohol-related consequences: Associations with past drinking. *Journal of Adolescence, 34*(1), 87–94. <http://doi.org/10.1016%2Fj.jadolescence.2010.01.009>
- Liston, C., McEwen, B. S., & Casey, B. J. (2009). Psychosocial stress reversibly disrupts prefrontal processing and attentional control. *Proceedings of the National Academy of Sciences, 106*(3), 912–917. <http://doi.org/10.1073/pnas.0807041106>
- MacKillop, J., Miranda Jr, R., Monti, P. M., Ray, L. A., Murphy, J. G., Rohsenow, D. J., McGeary, J. E., Swift, R. M., Tidey, J. W., & Gwaltney, C. J. (2010). Alcohol demand, delayed reward discounting, and craving in relation to drinking and alcohol use disorders. *Journal of Abnormal Psychology, 119*(1), 106–114. <http://doi.org/10.1037/a0017513>
- MacKillop, J., & Murphy, J. G. (2007). A behavioral economic measure of demand for alcohol predicts brief intervention outcomes. *Drug and Alcohol Dependence, 89*(2–3), 227–233. <http://doi.org/10.1016/j.drugalcdep.2007.01.002>
- Neveu, D., Doron, J., Visier, L., Boiché, J., Trouillet, R., Dujols, P., & Ninot, G. (2012). Students perceived stress in academic programs: Consequences for its management. *Revue D'épidémiologie et de Santé Publique, 60*(4), 255–264. <http://doi.org/10.1016/j.respe.2012.01.008>
- Oda, Y., & Kikuchi, K. (2013). Psychological and salivary cortisol responses to an improvised speech without an audience: Comparison to a rest condition. *Psychologia, 56*(4), 259–270. <http://doi.org/10.2117/psysoc.2013.259>
- Payne, J. D., Nadel, L., Allen, J. J., Thomas, K. G., & Jacobs, W. J. (2002). The effects of experimentally induced stress on false recognition. *Memory, 10*(1), 1–6.

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

- <http://doi.org/10.1080/09658210143000119>
- Porter, S. R., & Pryor, J. (2007). The effects of heavy episodic alcohol use on student engagement, academic performance, and time use. *Journal of College Student Development, 48*(4), 455–467. <http://doi.org/10.1353/csd.20070042>
- Sapolsky, R. M. (1996). Why stress is bad for your brain. *Science, 273*(5276), 749–750. <http://doi.org/10.1126/science.273.5276.749>
- Sapolsky, R. M. (2003). Stress and plasticity in the limbic system. *Neurochemical Research, 28*, 1735–1742. <http://doi.org/10.1023/A:1026021307833>
- Schulenberg, J. E., Johnston, L. D., O'Malley, P. M., Bachman, J. G., Miech, R. A., & Patrick, M. E. (2017). *Monitoring the future national survey results on drug use, 1975–2016: Volume II, college students and adults ages 19–55*. Institute for Social Research, The University of Michigan. <http://monitoringthefuture.org/pubs.html#monographs>
- Shillington, A. M., & Clapp, J. D. (2006). Heavy alcohol use compared to alcohol and marijuana use: Do college students experience a difference in substance use problems? *Journal of Drug Education, 36*(1), 91–103. <http://doi.org/10.2190/8prj-p8aj-mxu3-h1mw>
- Starcke, K., & Brand, M. (2016). Effects of stress on decisions under uncertainty: A meta-analysis. *Psychological Bulletin, 142*(9), 909–933. <http://doi.org/10.1037/bul0000060>
- Starcke, K., Wolf, O. T., Markowitsch, H. J., & Brand, M. (2008). Anticipatory stress influences decision making under explicit risk conditions. *Behavioral Neuroscience, 122*(6), 1352–1360. <http://doi.org/10.1037/a0013281>
- Stephens, M. A. C., & Wand, G. (2012). Stress and the HPA axis: Role of glucocorticoids in alcohol dependence. *Alcohol Research: Current Reviews, 34*(4), 468–483.
- Substance Abuse and Mental Health Services Administration. (2019). *Behavioral Health Among College Students Information & Resource Kit* (HHS Publication No. SMA 19-5052). <https://store.samhsa.gov/sites/default/files/d7/priv/sma19-5052.pdf>
- Towbes, L. C., & Cohen, L. H. (1996). Chronic stress in the lives of college students: Scale development and prospective prediction of distress. *Journal of Youth and Adolescence, 25*(2), 199–217. <http://doi.org/10.1007/bf01537344>
- Wills, T. A. (1986). Stress and coping in early adolescence: Relationships to substance use in urban school samples. *Health Psychology, 5*(6), 503–529. <http://doi.org/10.1037/0278-6133.5.6.503>
- Wills, T. A., & Yaeger, A. M. (2003). Family factors and adolescent substance use: Models and mechanisms. *Current Directions in Psychological Science, 12*(6), 222–226. <http://doi.org/10.1046/j.0963-7214.2003.01266.x>

Author Note. Dominique Kornely  <https://orcid.org/0000-0003-2822-3129>

Kameko Halfmann  <https://orcid.org/0000-0002-4859-3074>

This research was supported by the Summer Undergraduate Scholars Program (SUSP) and Undergraduate Research, Scholarly, and Creative Activities Award to D. K. and a New Faculty Professional Development Award to K. H. from the Office of Research and Sponsored Programs (ORSP) at UW-Platteville.

We would like to thank members of the Platteville Emotion and Decision-Making Lab, including Dana Mueller, Bailey Kerkel, Madison Schony, and Haley Daniels for assistance with data collection and moral support and participants in the SUSP program for moral support. We would also like to extend thanks to the UW-Platteville ORSP for providing time, resources, workshops, and support, including opportunities to share and receive feedback on earlier parts of this research.

Correspondence should be addressed to Kameko Halfmann, Department of Psychology, One University Pl., Platteville, WI 53818, (608) 342-1695. Email: halfmannk@uwplatt.edu

The Importance of Flexible Relational Boundaries: The Role of Connectedness in Self-Compassion and Compassion for Others

Kaitlin S. Snyder and Andrew F. Luchner*
Department of Psychology, Rollins College

ABSTRACT. Self-compassion and compassion for others have largely been studied independently. However, when studied as separate but related constructs, clear self-other differences emerge. Although intrapersonal and interpersonal differences are perhaps best explained through personality theory, specifically Blatt's (2008) 2 polarities model, limited research has specifically examined the impact personality organization has on the capacity to extend compassion to oneself and others. The present study examined how personality organization according to 2-polarities model of personality is related to and impacts self-compassion and compassion for others. Participants ($N = 226$) completed a series of self-report questionnaires online to assess personality organization and compassion competencies. Results yielded 2 predictive models of compassion. Efficacy (+), self-criticism (-), and connectedness (-) predicted self-compassion ($R^2 = .47, p < .001$). Efficacy (+), self-criticism (-), and connectedness (+) predicted compassion for others ($R^2 = .36, p < .001$). Model disparities elucidate key differences between the constructs, specifically that healthy and flexible relational boundaries are essential for self-compassion, while feelings of security and stability within personal relationships are more important for showing others compassion. Understanding how differences in personality proclivities relate to the nuances in self-compassion and compassion for others may aid therapeutic intervention targeting compassion capacities.

Keywords: connectedness, relatedness, self-compassion, compassion for others

Individuals vary greatly in their capacity to have compassion for themselves and others. These variations are in part attributable to what helps or gets in the way of showing oneself and others compassion. For example, harsh self-judgement, attributing suffering to personal failings, and overidentification with one's pain all hinder self-compassion in the face of suffering (Neff, 2003). Although empirical literature concerning compassion continues to grow, self-compassion and compassion for others have largely been conceptualized and studied independently, hindering an examination of the relationship between the two constructs. Gilbert and colleagues (2017) have remedied this issue by creating a theory that includes both self-compassion and

compassion for others and highlights the need to explore self-other differences that exist between the phenomena.

Blatt's (2008) two-polarities model of personality provides a theoretical framework from which to examine the self-other differences that exist between self-compassion and compassion for others. The two-polarities model describes the lifelong dialectical synergistic interaction between developing and maintaining a positive identity (i.e., issues of self-definition) and reciprocal, stable relationships with others (i.e., issues of relatedness) as core processes in personality development and organization (Luyten & Blatt, 2013). In other words, Blatt and colleagues suggested that developing a coherent sense of self supports the maturation and

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

development of mutually beneficial relationships, which reciprocally facilitates the development of an increasingly integrated sense of self. However, disruptions in the synergistic relationship between self-definition and relatedness can impede healthy personality development (Luyten & Blatt, 2013).

Although some studies have utilized personality measures (e.g., the Big Five) when examining constructs related to positive psychology, mental health, and subjective well-being (Barnes & Mongrain, 2019), no studies have explored the relationship between self-other models of personality organization, self-compassion, and compassion for others. Furthermore, none to our knowledge have yet explored the impact of self-definition and relatedness processes on compassion capabilities. With the aim of resolving this deficit, the present study examined the relationship between self-definition and relatedness and the ability to be self-compassionate and compassionate to others.

Two-Polarities Model of Personality: Self-Definition and Relatedness

An exploration of the self-other differences that exist between self-compassion and compassion for others is best achieved through first examining the intrapersonal and interpersonal differences described by Blatt's two-polarities model of personality. Two-polarities theory postulates that the dialectic interaction between self-definition and relatedness are integral components of personality development throughout the lifespan (Blatt, 2008). *Self-definition* involves establishing an individuated, generally positive self-identity. *Relatedness* involves establishing intimate, stable, mutually beneficial relationships with others. According to the two-polarities model, healthy personality development occurs as individuals repeatedly overcome issues related to the self to increase autonomy and issues concerned with relatedness to form more mature relationships (Luyten & Blatt, 2013). Similar self-other personality dimensions (e.g., autonomy and sociotropy, attachment avoidance and attachment anxiety) have been found across cognitive, attachment, and self-determination theories as well (Beck et al., 1983; Bowlby, 1980; Ryan & Deci, 2000). Because the development of an autonomous self cultivates increasingly mature relationships with others, and healthy attachments with others facilitates an increasingly mature and integrated self, a balanced interaction between each dimension is necessary for the maturation of adaptive personality organization and healthy

psychological development (Blatt, 2008; Mongrain & Zuroff, 1995). Furthermore, a severe imbalance or overconcern with identity formation to the detriment of connecting with others, and vice versa, halts developmentally appropriate maturation in the polar task and disrupts personality development (Blatt & Luyten, 2009; Luyten & Blatt, 2011).

Through the examination of shared common dynamics, conflicts, defenses, and vulnerabilities, the two-polarities model identifies self-critical and dependent personality organizations resulting from exaggerated concerns with self-identity or interpersonal relationships, respectively (Blatt & Luyten, 2009; Blatt & Maroudas, 1992). According to Blatt (2008), individuals who are overly concerned with issues of the self, often involving independence or autonomy, control, self-worth, and identity, have an *introjective* or *self-critical* personality organization. Individuals who are excessively concerned with interpersonal issues, typically involving love, attachment, and trust, have an *anachitic* or *dependent* personality organization. Due to the synergistic nature of the polarities, excessive preoccupation with one developmental task inherently halts developmentally appropriate maturation in the other, increasing vulnerability to psychopathology (Besser & Priel, 2005; Blatt, 2008; Blatt & Luyten, 2009). For example, self-critical personality organization has been consistently associated with pathology (e.g., depression, negative affect; Besser & Priel, 2005; Mongrain & Zuroff, 1995; Thompson & Zuroff, 2004). However, there seems to be both adaptive and maladaptive expressions of dependency: *neediness* and *connectedness* (Blatt et al., 1995; Rude & Burnham, 1995; Shahar, 2015). Neediness indicates an indiscriminate overconcern with abandonment and separation that is associated with depression, whereas connectedness indicates the adaptive concern one feels about specific relationship issues that is associated with psychological well-being (Blatt et al., 1995).

Although maladaptive personality organizations primarily describe individuals within clinical populations experiencing extreme disruption in tasks of self-individuation and interpersonal relating, self-criticism and neediness also refer to less extreme personality disruptions within nonclinical populations. Individuals with self-critical personality proclivities tend to exhibit assertiveness, high personal standards, needs for recognition, criticism toward the self and others, and perfectionism (Blatt, 2008; Lingardi et al., 2017). Contrastingly, needy personality proclivities

are more often associated with concerns regarding separation and abandonment, affection-seeking, submissiveness, introjected aggression, and a lack of boundaries between self and other (Kopala-Sibley et al., 2013; Rude & Burnham, 1995). Because examining the shared cognitive, affective, and relational styles typical of both adaptive and maladaptive personality organizations is critical for predicting developmental difficulties and informing strategies for therapeutic change (Lingiardi et al., 2017; Mongrain & Zuroff, 1995), examining self-definition and relatedness in relation to compassion competence may aid compassion-based therapeutic intervention.

Self-Compassion and Compassion for Others

Compassion might best be understood as involving two separate but related components of self-compassion and compassion for others. Developed from a Buddhist psychological perspective, Neff (2003) defined *self-compassion* as a kind, mindful, and connected approach to one's own suffering rather than over-identification with or harsh judgment of one's pain. Self-compassion is considered a protective factor to mental health vulnerabilities (e.g., self-criticism, depression) and is associated with psychological well-being (Kaurin et al., 2018; Leary et al., 2007; Neff, 2011; Shapira & Mongrain, 2010; Trompetter et al., 2017). Although an abundance of research has firmly established the conceptualization of self-compassion, there is less consensus on how best to conceptualize and study prosocial compassion, or compassion for others (Goetz & Simon-Thomas, 2017). Goetz and Simon-Thomas differentiated compassion for others from related concepts such as sympathy, empathy, and altruism, and defined compassion for others as both an intrapersonal and interpersonal response involving attending to and perspective-taking of another person's suffering (2017). Further, this study agrees that compassion for others seems to require a nonjudgmental, open approach to another individual's distress rather than reacting with fear, disdain, or discomfort to another's negative emotions (Strauss et al., 2016). Consequently, feelings of personal distress may hinder one's ability to engage with and act compassionately toward others (Gilbert et al., 2011).

Commonalities exist between the constructs, and some findings have supported a connection between self-compassion and compassion for others (e.g., Lindsay & Creswell, 2014; Neff & Pommier, 2013). For example,

highly self-compassionate individuals reported being equally caring toward themselves and others whereas those with low self-compassion reported treating others kinder than themselves (Hermanto & Zuroff, 2016). However, other findings have not substantiated a significant relationship between self-compassion and compassion for others (López et al., 2018; Neff, 2003). Gilbert and colleagues (2017), taking a more Western psychological approach to compassion than Neff's Buddhist approach, maintained that differences in attention, motivation, and behavior between self-compassion and compassion for others warrants identifying each as separate but related constructs. It may be that self-compassion and compassion for others are related in that they involve similar aspects of engagement with and motivated action to resolve suffering, but differ in terms of the central aspects of each construct. For example, a sense of common humanity and mindfulness are central aspects of self-compassion, whereas affective and cognitive empathy are considered essential to prosocial behaviors such as compassion for others (Marshall et al., 2019; Neff, 2003; Neff & Pommier, 2013). Further, the ability to effectively shift focus between the self and others when necessary seems to account for differing emotional, motivational, and behavioral outcomes associated with self-compassion and compassion for others (Lown, 2016). Moreover, the emphasis on intrapersonal and interpersonal experiences within both constructs warrants examining self-compassion and compassion for others through the lens of two-polarities personality theory.

Compassion and Two-Polarities Theory

Recently, Gilbert and colleagues (2017) have explored compassion as a two-part process involving the motivation to engage with and relieve suffering, and have created a tripartite construct that examines self-compassion, compassion for others, and compassion from. There is reason to believe that a dialectical relationship incorporating both the intrapersonal and interpersonal aspects of personality development might relate to this tripartite conceptualization of compassion through a similar self-other framework (i.e., self-compassion and compassion from others are self-oriented constructs, whereas compassion for others is an other-oriented construct).

A number of studies seem to support such a connection between personality development and compassion. Social mentality theorists Hermanto

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

and Zuroff (2016) proposed that compassionate capacities are derived from internal working representations shaped by early life experiences with caregivers. These internal working representations, associated with personality development and organization (Kernberg, 2007), influence social outcomes such as one's proclivity to react helpfully or defensively in response to someone else's suffering (Davis, 2017). Similar to social mentality theory, two-polarities theory postulates that establishing an autonomous self cultivates compassionate acts toward disadvantaged groups (Blatt, 2008). Extensive findings that self-compassion is highly associated with well-being (Barnard & Curry, 2011; Gilbert et al., 2017; Neff, 2011; Neff & McGehee, 2010; Neff et al., 2007; Trompetter et al., 2017) may also suggest a critical connection between personality and compassion.

Few studies have assessed both personality organization, self-compassion, and compassion for others concurrently. Both Thurackal and colleagues (2016) and Neff and colleagues (2007) examined the relationship between personality and self-compassion using trait models of personality (i.e., Five Factor Inventory and Big Five Inventory). Further, Shapira & Mongrain (2010) utilized Blatt's two-polarities measure to assess the impact of personality organization on the effectiveness of self-compassion and optimism interventions. Although no studies to our knowledge have examined the relationship between personality and compassion for others, Hermanto and Zuroff (2016) examined the impact of care-seeking and care-giving social mentalities on self-compassion and self-reassurance. Moreover, no research to our knowledge has examined the relationship between personality organization as understood by two-polarities theory and Gilbert and colleagues' (2017) tripartite measure of compassion. With the goal of filling this gap, our study examined the relationships between adaptive and maladaptive personality organization as defined by two-polarities theory, and self-compassion and compassion for others as defined by Gilbert and colleagues (2017). Based on prior findings, we expected self-compassion and compassion for others to be positively correlated with adaptive personality organization (i.e., efficacy and connectedness) and negatively correlated with maladaptive personality organization (i.e., self-criticism and neediness). In addition, we hypothesized that adaptive personality organization would predict self-compassion and compassion for others.

Method

Participants

The study consisted of 226 participants (54.4% women, 42.9% men, 2.7% transgender). Participant age range was 18 to 78 ($M = 31.01$, $SD = 11.19$). The sample was primarily of European American background (67.3%), followed by Asian (9.3%), African American (8.8%), Hispanic (7.5%), Mixed Race (5.3%), Middle Eastern (1.3%), and Other (0.4%).

Measures

Self-Compassion and Compassion for Others

Self-compassion and compassion for others were assessed using the 39-item Compassionate Engagement and Action Scales (CEA-S; Gilbert et al., 2017). The CEA-S measures self-compassion, the compassion people experience for others, and the compassion people experience from others. This study examined only the Self-Compassion and Compassion to Others subscales because these measured the constructs that related directly to the aims of the study. An example of an item from the Self-Compassion subscale is, "I am motivated to engage and work with my distress when it arises." An example of an item from the Compassion to Others subscale is, "I am motivated to engage and work with other peoples' distress when it arises." Participants rate each statement according to how frequently it occurs on a 10-point Likert-type scale from 1 (*never*) to 10 (*always*). In the present study, internal consistency for self-compassion ($\alpha = .88$) and compassion to others ($\alpha = .91$) was acceptable.

Self-Definition and Relatedness

Adaptive and maladaptive self-definition and relatedness were assessed using the Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976). The DEQ is a 66-item measure of personality assessing variables of self-criticism, dependency, and efficacy. Adaptive and maladaptive variables of self-definition are termed efficacy and self-criticism, respectively. Efficacy assesses inner strength, self-confidence, and sense of personal resilience (e.g., "I have many inner resources [abilities, strengths]"; Besser & Priel, 2005). Self-criticism assesses a preoccupation with feelings of guilt, insecurity, failure, and self-blame, and involves ambivalent feelings about the self and others as well as a critical approach to oneself (e.g., "I often find that I don't live up to my own standards or ideals"; Besser & Priel, 2005; Blatt et al., 1976). Variable scores are calculated using

a factor-weighted scoring system in which all 66 items contribute to the scoring of each factor. DEQ items are rated on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating higher levels of each factor.

Because previous research has identified the presence of both adaptive and maladaptive aspects of Blatt's original dependency factor, subscales of neediness and connectedness were created to examine these aspects independently (Blatt et al., 1995; Rude & Burnham, 1995). Connectedness refers to the concern one feels about specific relationship issues and signifies psychological well-being (e.g., "After a fight with a friend, I must make amends as soon as possible"; Besser & Priel, 2005; Blatt et al., 1995; Kopala-Sibley et al., 2016; Rude & Burnham, 1995). Neediness refers to generalized excessive preoccupation with abandonment and separation and is associated with maladaptive outcomes (e.g., "I become frightened when I feel alone"; Besser & Priel, 2005; Blatt et al., 1995; Rude & Burnham, 1995).

In the present study, internal consistency for the DEQ ($\alpha = .85$) was reliable. We found strong internal consistency for Self-Criticism ($\alpha = .86$), Efficacy ($\alpha = .73$), Connectedness ($\alpha = .78$), and Neediness ($\alpha = .70$) subscales.

Procedure

This study was approved by the Rollins College Institutional Review Board, and all participants signed informed consent before taking part in the study. Data was collected as part of a larger study. The sample was recruited and compensated through the online recruitment platform Prolific Academic. Inclusion criteria involved participants who were at least 18 years old, maintained current residency in the United States, and had a minimum approval rating of 95% on Prolific Academic. Participants completed self-report questionnaires through Qualtrics, an online survey website. Questionnaires were counterbalanced and attention checks were included in order to ensure data reliability and accuracy. Participants who failed at least one of the two attention checks or completed the questionnaire exceptionally fast (i.e., three standard deviations below the mean) were excluded from sample analysis ($n = 3$). Each participant was compensated according to their completion time ($M = 23.88$, $SD = 9.57$), approximately \$6.50 per hour, as was ethically recommended.

Results

Descriptive data can be found in Table 1. Pearson correlations were calculated to discern the relationship between personality organization and compassion (see Table 1). Correlational analysis revealed a significant positive zero order correlation between self-compassion and efficacy and significant negative zero order correlations between self-compassion, self-criticism, and neediness. No correlation was found between self-compassion and connectedness. Significant positive zero order correlations were found between compassion to others, efficacy, and connectedness. No correlation was found between compassion to others, self-criticism, and neediness.

Multiple regression analysis was utilized to examine the ability of adaptive and maladaptive personality organization to predict self-compassion and compassion to others. Multiple regression analysis identified suppressor variables within both models.¹ Connectedness acted as a suppressor variable within the model of self-compassion, and self-criticism acted as a suppressor variable within the model of compassion to others. Multicollinearity, a potential threat to the validity of suppressor variables, was assessed and determined not to influence the statistical analyses. Scatterplot assessment established no curvilinear relationship between self-compassion and connectedness, or compassion to others and self-criticism. In multiple regression, two models were examined (see Table 2). Efficacy, self-criticism,

TABLE 1

Descriptive Statistics and Intercorrelations of Self-Criticism, Efficacy, Connectedness, Neediness, Self-Compassion, and Compassion to Others

Measure	1	2	3	4	5	6
1. Self-crit						
2. Efficacy	.04					
3. Connect	.37**	.45**				
4. Neediness	.53**	-.17*	.53**			
5. CEAS_Self	-.46**	.45**	-.12	-.39**		
6. CEAS_ToO	-.10	.49**	.44**	.04	.34**	
<i>M</i>	.30	-.62	-.52	.21	63.30	71.94
<i>SD</i>	1.17	1.08	1.06	0.88	15.42	14.75

Note. Self-crit = DEQ self-criticism factor; Efficacy = DEQ efficacy factor; Connect = DEQ connectedness factor; Neediness = DEQ neediness factor; CEAS_Self = Compassion Engagement and Action Scale Self-compassion; CEAS_ToO = Compassion Engagement and Action Scale Compassion to others.
* $p < 0.05$. ** $p < 0.01$.

¹ For more information on suppressor variables, see Lancaster, 1999 and Thompson & Levine, 1997.

connectedness, and neediness factors were included in Model 1 as predictors of self-compassion. The model was significant, $R^2 = .47$, $F(4, 221) = 48.61$, $p < .001$, with efficacy ($\beta = .61$, $p < .001$), self-criticism ($\beta = -.42$, $p < .001$), and connectedness ($\beta = -.29$, $p < .001$) significantly predicting self-compassion. Neediness was not a significant predictor of self-compassion ($\beta = .09$, $p = .232$). The model explains 45.8% of the variance in self-compassion (Adjusted $R = .46$). Efficacy, self-criticism, connectedness, and neediness factors were included in Model 2 as predictors of compassion to others. The model was significant, $R^2 = .36$, $F(4, 221) = 30.76$, $p < .001$, with efficacy ($\beta = .36$, $p < .001$), self-criticism ($\beta = -.27$, $p < .001$), and connectedness ($\beta = .34$, $p < .001$) significantly predicting compassion to others. Neediness was not a significant predictor of compassion to others ($\beta = .07$, $p = .407$). The model explains 34.6% of the variance in compassion to others (Adjusted $R^2 = .35$).

Discussion

This study explored the relationship between adaptive and maladaptive personality organization, self-compassion, and compassion for others. We expected that self-compassion and compassion for others would be positively correlated with adaptive personality organization (i.e., efficacy and connectedness) and negatively correlated with maladaptive personality organization (i.e., self-criticism and neediness). We also expected adaptive personality organization would predict self-compassion and compassion for others.

First, our finding that connectedness was not associated with self-compassion initially suggests that self-compassion requires a lack of connection within one's relationships with others. However,

this would contradict prior findings that healthy intrapersonal experiences necessitate engagement within healthy relationships (Blatt, 2008). Rather, we expect that self-compassionate individuals are more likely able to establish boundaries within their relationships thereby allowing for efficient attending to their own suffering when necessary. Moreover, successful management and minimization of negative impacts from relationship conflict is needed for self-attending and self-soothing. Others have similarly found that the ability to shift focus between the self and others accounts for differences between self-compassion and compassion for others (e.g., Lown, 2016). Therefore, it seems that self-compassion entails enough separation from others that one is not overly connected and dependent on external reassurance for self-cohesion, as is typical of needy individuals.

Second, our finding that lower levels of self-criticism and higher levels of efficacious self-regard predicted greater compassion for others suggests that a generally stable sense of self-identity and self-worth contribute to one's ability to show others compassion. Prior research corroborates this finding, as insecure attachment style, self-coldness, and inadequacy are associated with a fear of being compassionate to others (Gilbert et al., 2011). Additionally, our finding that lower levels of self-criticism predicted higher compassion for others supports previous findings that overly self-critical individuals may hold a judgmental view of others and therefore behave with disdain and avoidance rather than compassion when encountering distressed others (Mikulincer et al., 2005). Therefore, compassion for others might require both the presence of inner strength and the absence of harsh self-criticism. Moreover, our finding that higher levels of connectedness predicted greater compassion for others indicates that feelings of interpersonal connectedness significantly impact the capacity to have compassion for others. It seems that individuals with stable, loving interpersonal relationships are more likely to intentionally attend to others' suffering than are individuals that are preoccupied with abandonment. Relationship security and healthy interpersonal connections have been linked with greater empathic and compassionate capabilities as well as adaptive interpersonal behavior (Kopala-Sibley et al., 2013; Mikulincer et al., 2005). In other words, the presence of both a stable, generally positive sense of self as well as stable, caring interpersonal relationships appear to support intentional attending

TABLE 2

Summary of Multiple Regression Analysis Coefficients for Self-Compassion and Compassion to Others

Variable	Model 1			Model 2		
	<i>B</i>	<i>SEB</i>	β	<i>B</i>	<i>SEB</i>	β
Efficacy	8.75	0.94	.61**	4.98	0.99	.36**
Self-criticism	-5.54	0.77	-.42**	-3.46	0.82	-.27**
Connectedness	-4.21	1.10	-.29**	4.73	1.16	.34**
Neediness	1.59	1.33	.09	1.17	1.41	.07
R^2		0.47			0.36	
<i>F</i>		48.61**			30.76**	

Note. Model 1 = Self-compassion; Model 2 = Compassion to others.
** $p < .001$.

and helpful emotional and behavioral reactions to relieve suffering in others.

Most noteworthy are the differences between predictive models of self-compassion and compassion for others. As feelings of connectedness contribute negatively to the prediction of self-compassion and positively to the prediction of compassion for others, there may be reason to believe conceptual distinctions based on an individual's level of relatedness exist between self-compassion and compassion for others. These findings challenge previous conceptualizations of self-compassion as a unitary construct that encompasses both kindness toward self and others (Neff, 2003). However, theoretical differences existing between Neff's conceptualization of self-compassion, and Gilbert and colleagues' (2017) conceptualization of self-compassion and compassion for others as separate constructs, may reflect broader cultural differences between Eastern and Western societies as to the value of independence versus interdependence. Our findings seem to show that compassion directed inward requires healthy relational boundaries, which corroborates findings that a sense of common humanity and mindfulness are central aspects to self-compassion (Neff, 2003; Neff & Pommier, 2013). However, compassion directed toward others is more likely dependent on how secure people feel within their relationships, which is consistent with findings that attachment security is associated with compassion and caregiving behaviors (Mikulincer et al., 2005). Furthermore, our findings support two-polarities theory that a balance between tasks of self-definition and relatedness is necessary to maintain adaptive personality development and organization (Blatt, 2008). These clear distinctions in modeled relationships found between self-compassion and connectedness, and compassion for others and connectedness, not only support previous research that self-compassion is a separate albeit related construct from compassion for others but also explains how these constructs differ. In other words, concern for others is the main differentiator between self-compassion and compassion for others. Clearly, as suggested by prior studies (Lown, 2016), it is important to consider self and other distinctions when examining prosocial tendencies.

Because our study was the first to compare efficacy, self-criticism, connectedness, and neediness with a holistic measure of compassion, further research is needed to determine the impact of personality organization on compassion. The chosen correlational research design precludes

assumptions of causality, so future studies might utilize experimental methodology when examining compassion. This study's participant inclusion criteria (e.g., English speaking and U.S. sample) limited cultural diversity, so future research should examine how the impact of personality organization on self-compassion and compassion for others might vary within different cultures. Continued examination of the relationship between personality organization and compassion factors may aid compassion-based therapeutic intervention (Jain & Fonagy, 2018). Hopefully, continued research on those factors that support and hinder compassion will inform strategies that help all individuals show themselves and others more compassion.

References


- Barnard, L. K., & Curry, J. F. (2011). Self-compassion: Conceptualizations, correlates, & interventions. *Review of General Psychology, 15*(4), 289–303. <http://dx.doi.org/10.1037/a0025754>
- Barnes, C., & Mongrain, M. (2019). A three-factor model of personality predicts changes in depression and subjective well-being following positive psychology interventions. *The Journal of Positive Psychology, 15*(4), 556–568. <http://dx.doi.org/10.1080/17439760.2019.1651891>
- Beck, A. T., Epstein, N., Harrison, R. P., & Emery, G. (1983). *Development of the sociotropy-autonomy scale: A measure of personality factors in depression*. University of Pennsylvania.
- Besser, A., & Priel, B. (2005). Interpersonal relatedness and self-definition in late adulthood depression: Personality predispositions, and protective factors. *Social Behavior and Personality, 33*(4), 351–382. <http://dx.doi.org/10.2224/sbp.2005.33.4.351>
- Blatt, S. J. (2008). *Polarities of experience: Relatedness and self-definition in personality development, psychopathology, and the therapeutic process*. American Psychological Association.
- Blatt, S. J., D'Afflitti, J. P., & Quinlan, D. M. (1976). Experiences of depression in normal young adults. *Journal of Abnormal Psychology, 85*(4), 383–389. <http://dx.doi.org/10.1037/0021-843X.85.4.383>
- Blatt, S. J., & Luyten, P. (2009). A structural-developmental psychodynamic approach to psychopathology: Two polarities of experience across the life span. *Development and Psychopathology, 21*(3), 793–814. <https://doi.org/10.1017/s0954579409000431>
- Blatt, S. J., & Maroudas, C. (1992). Convergences among psychoanalytic and cognitive-behavioral theories of depression. *Psychoanalytic Psychology, 9*(2), 157–190. <https://doi.org/10.1037/h0079351>
- Blatt, S. J., Zohar, A. H., Quinlan, D. M., Zurhoff, D. C., & Mongrain, M. (1995). Subscales within the dependency factor of the depressive experiences questionnaire. *Journal of Personality Assessment, 64*(2), 319–339. http://dx.doi.org/10.1207/s15327752jpa6402_11
- Bowlby, J. (1980). *Attachment and loss: Loss* (vol. 3).
- Davis, M. H. (2017). Empathy, compassion, and social relationships. In E. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, C. D. Cameron, & J. R. Doty (Eds.), *The oxford handbook of compassion science* (pp. 299–315). Oxford University Press.
- Gilbert, P., Catarino, F., Duarte, C., Matos, M., Kolts, R., Stubbs, J., Ceresatto, L., Duarte, J., Pinto-Gouveia, J., & Basran, J. (2017). The development of compassionate engagement and action scales for self and others. *Journal of Compassionate Health Care, 4*(4), 1–24. <http://dx.doi.org/10.1186/s40639-017-0033-3>
- Gilbert, P., McEwan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy: Theory, Research and Practice, 84*(3), 239–255. <http://dx.doi.org/10.1348/147608310X526511>
- Goetz, J. L., & Simon-Thomas, E. (2017). The landscape of compassion: Definitions and scientific approaches. In E. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, C. D. Cameron, & J. R. Doty (Eds.), *The Oxford handbook of compassion science* (pp. 3–15). Oxford University Press.

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

- Hermanto, N., & Zuroff, D. C. (2016). The social mentality theory of self-compassion and self-reassurance: The interactive effect of care-seeking and caregiving. *The Journal of Social Psychology, 156*(5), 523–535. <http://dx.doi.org/10.1080/00224545.2015.1135779>
- Jain, F. A., & Fonagy, P. (2018). Mentalizing imagery therapy: Theory and case series of imagery and mindfulness techniques to understand self and others. *Mindfulness, 11*(1), 153–165. <http://dx.doi.org.ezproxy.rollins.edu:2048/10.1007/s12671-018-0969-1>
- Kaurin, A., Schönfelder, S., & Wessa, M. (2018). Self-compassion buffers the link between self-criticism and depression in trauma-exposed firefighters. *Journal of Counseling Psychology, 65*(4), 453–462. <http://dx.doi.org/10.1037/cou0000275>
- Kernberg, O. F. (2007). The almost untreatable narcissistic patient. *Journal of the American Psychoanalytic Association, 55*(2), 503–539. <http://dx.doi.org/10.1177/00030651070550020701>
- Kopala-Sibley, D., Rappaport, L. M., Sutton, R., Moskowitz, D. S., & Zuroff, D. C. (2013). Self-criticism, neediness, and connectedness as predictors of interpersonal behavioral variability. *Journal of Social and Clinical Psychology, 32*(7), 770–790. <http://dx.doi.org/10.1521/jscp.2013.32.7770>
- Kopala-Sibley, D., Zuroff, D. C., Hermanto, N., & Joyal-Desmarais, K. (2016). The development of self-definition and relatedness in emerging adulthood and their role in the development of depressive symptoms. *International Journal of Behavioral Development, 40*(4), 302–312. <http://dx.doi.org/10.1177/0165025415573640>
- Lancaster, B. P. (1999). *Defining and interpreting suppressor effects: Advantages and limitations* (Doctoral Dissertation). Retrieved from Education Resources Information Center. (ERIC No. ED426097)
- Leary, M. R., Tate, E. B., Adams, C. E., Batts Allen, A., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology, 92*(5), 887–904. <http://dx.doi.org/10.1037/0022-3514.92.5.887>
- Lindsay, E. K., & Creswell, J. D. (2014). Helping the self help others: Self-affirmation increases self-compassion and pro-social behaviors. *Frontiers in Psychology, 5*, 9. <https://doi.org/10.3389/fpsyg.2014.00421>
- Lingiardi, V., McWilliams, N., & Muzi, L. (2017). The contribution of Sidney Blatt's Two-Polarities model to the psychodynamic diagnostic manual. *Research in Psychotherapy: Psychopathology, Process and Outcome, 20*(1), 12–18. <https://doi.org/10.4081/ripppo.2017.242>
- López, A., Sanderman, R., Rancho, A. V., & Schroevers, M. J. (2018). Compassion for others and self-compassion: Levels, correlates, and relationship with psychological well-being. *Mindfulness, 9*(1), 325–331. <http://dx.doi.org/10.1007/s12671-017-0777-z>
- Lown, B. A. (2016). A social neuroscience-informed model for teaching and practicing compassion in health care. *Medical Education, 50*(3), 332–342. <https://doi.org/10.1111/medu.12926>
- Luyten, P., & Blatt, S. J. (2011). Integrating theory-driven and empirically-derived models of personality development and psychopathology: A proposal for DSM V. *Clinical Psychology Review, 31*(1), 52–68. <http://dx.doi.org/10.1016/j.cpr.2010.09.003>
- Luyten, P., & Blatt, S. J. (2013). Interpersonal relatedness and self-definition in normal and disrupted personality development: Retrospect and prospect. *American Psychologist, 68*(3), 172–183. <http://dx.doi.org/10.1037/a0032243>
- Marshall, S. L., Ciarrochi, J., Parker, P. D., & Sahdra, B. K. (2019). Is self-compassion selfish? The development of self-compassion, empathy, and prosocial behavior in adolescence. *Journal of Research on Adolescence*. Advanced online publication. <http://dx.doi.org/10.1111/jora.12492>
- Mikulincer, M., Shaver, P. R., Gillath, O., & Nitzberg, R. A. (2005). Attachment, caregiving, and altruism: Boosting attachment security increases compassion and helping. *Journal of Personality and Social Psychology, 89*(5), 817–839. <http://dx.doi.org/10.1037/0022-3514.89.5.817>
- Mongrain, M., & Zuroff, D. C. (1995). Motivational and affective correlates of dependency and self-criticism. *Personality and Individual Differences, 18*(3), 347–354. [http://dx.doi.org/10.1016/0191-8869\(94\)00139-J](http://dx.doi.org/10.1016/0191-8869(94)00139-J)
- Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*(3), 223–250. <http://dx.doi.org/10.1080/15298860309027>
- Neff, K. D. (2011). Self-compassion, self-esteem, and well-being. *Social and Personality Psychology Compass, 5*(1), 1–12. <http://dx.doi.org/10.1111/j.1751-9004.2010.00330.x>
- Neff, K. D., & McGehee, P. (2010). Self-compassion and psychological resilience among adolescents and young adults. *Self and Identity, 9*(3), 225–240. <http://dx.doi.org/10.1080/15298860902979307>
- Neff, K. D., & Pommier, E. (2013). The relationship between self-compassion and other-focused concern among college undergraduates, community adults, and practicing meditators. *Self and Identity, 12*, 160–176. <http://dx.doi.org/10.1080/15298868.2011.649546>
- Neff, K. D., Rude, S. S., & Kirkpatrick, K. L. (2007). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality, 41*(4), 908–916. <http://dx.doi.org/10.1016/j.jrp.2006.08.002>
- Rude, S. S., & Burham, B. L. (1995). Connectedness and neediness: Factors of the DEQ and SAS dependency scales. *Cognitive Therapy and Research, 19*(3), 323–340. <http://dx.doi.org/10.1007/BF02230403>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78. <http://dx.doi.org/10.1037/0003-066X.55.1.68>
- Shahar, G. (2015). *Erosion: The psychopathology of self-criticism*. Oxford University Press.
- Shapira, L. B., & Mongrain, M. (2010). The benefits of self-compassion and optimism exercises for individuals vulnerable to depression. *The Journal of Positive Psychology, 5*(5), 377–389. <http://dx.doi.org/10.1080/17439760.2010.516763>
- Strauss, C., Lever Taylor, B., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. *Clinical Psychology Review, 47*, 15–27. <http://dx.doi.org/10.1016/j.cpr.2016.05.004>
- Thompson, F. T., & Levine, D. U. (1997). Examples of easily explainable suppressor variables in multiple regression research. *Multiple Linear Regression Viewpoints, 24*(1), 11–13. <https://home.uabalt.edu/tmitch/645/articles/Thompson%20&%20Levine%20Ex%20suppressor%20vars.pdf>
- Thompson, R., & Zuroff, D. C. (2004). The levels of self-criticism scale: Comparative self-criticism and internalized self-criticism. *Personality and Individual Differences, 36*(2), 419–430. [http://dx.doi.org/10.1016/S0191-8869\(03\)00106-5](http://dx.doi.org/10.1016/S0191-8869(03)00106-5)
- Thurackal, J. T., Corveleyn, J., & Dezutter, J. (2016). Personality and self-compassion: Exploring their relationship in an Indian context. *European Journal of Mental Health, 11*(1–2), 18–35. <http://dx.doi.org/10.5708/EJMH.11.2016.1-2.2>
- Trompeter, H. R., de Kleine, E., & Bohlmeijer, E. T. (2017). Why does positive mental health buffer against psychopathology? An exploratory study on self-compassion as a resilience mechanism and adaptive emotion regulation strategy. *Cognitive Therapy and Research, 41*(3), 459–468. <http://dx.doi.org/10.1007/s10608-016-9774-0>

Author Note. Kaitlin S. Snyder  <https://orcid.org/0000-0002-2528-0710>

Andrew F. Luchner  <https://orcid.org/0000-0002-0161-5336>

This research was supported in part by grants from the Rollins College Student Faculty Collaborative Research Program, the Rollins College Office of the Dean of Arts and Sciences, the John Hauck Foundation, and the Trustee Match Donor Fund.

Correspondence concerning this article should be addressed to Kaitlin Snyder, Department of Psychology, Rollins College, 1000 Holt Avenue, Winter Park, FL, 32789. Email: ksnyder@rollins.edu

The Effects of In-Group Identification on College Students' Stigmatizing Attitudes Toward Peers With Mental Illness

Fayel Mustafiz and Dawn D. Dugan*

Department of Psychology, Hunter College, The City University of New York

ABSTRACT. Students with mental illness can feel stigmatized by their peers and may also have less perceived social support. However, it is thought that people are more likely to view someone more favorably if they perceive them as part of their in-group when sharing a common identity. Thus, an online survey was administered to 152 undergraduate students to investigate whether high in-group identification versus low in-group identification will lead to a more favorable view of a peer regardless of their mental health state and if a peer with stress would still be favored over a peer with mental illness. First, participants rated group identification with a hypothetical peer describing their Hunter College, CUNY experience in an audio clip. Then, participants heard the peer either reveal a mental health state of mental illness or stress. Finally, they rated perceived similarity and social distance toward the peer. Results of a factorial multivariate analysis of variance indicated significant main effects for both in-group identification, $F(2, 147) = 8.01, p < .001$, partial $\eta^2 = .10$, and the peer's mental health state, $F(2, 147) = 8.00, p = .001$, partial $\eta^2 = .10$. Although the peer with mental illness was viewed less favorably than the peer with stress, irrespective of group identification, high in-group identification still led to a more positive evaluation of the peer than low in-group identification. These results are important for understanding how increasing awareness of group identification may reduce stigma toward students with mental illness and ultimately reduce barriers to care.

Keywords: public stigma, mental illness, in-group, perceived similarity, social distance

Public stigma is the social process of upholding negative stereotypes about a certain group of individuals and subsequently distancing from that group and limiting their rights (Corrigan & Watson, 2002a). One particular group of people who have been subjected to public stigma for many years are those living with *mental illness*. People not only have to cope with their illness but also tolerate social exclusion and prejudices because of the negative stereotypes held by others (Rössler, 2016). These stereotypes, such as being labeled as dangerous, result in an exceeding number of people distancing themselves from and holding negative attitudes toward this group of people. They are then considered to be part of an out-group,

which restricts the opportunities they have in society. Therefore, it is important to understand the impact of these stigmatizing attitudes toward people with mental illness and how they can be prevented.

To delineate this multifaceted phenomenon of mental illness stigma, Corrigan et al. (2000) applied Weiner's (1972) attribution theory to the way society views people with mental disorders as unstable and disruptive. Controllability becomes a factor as people with mental illness are more likely to be seen as responsible for both causing their illness and for the presumed lack of effort they put in to improve their condition. Discomfort may be experienced by others when people with mental illness exhibit behaviors that are regarded as a violation of social

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

norms, and this may result in negative stereotypes and avoidance behaviors.

Fostering negative stereotypes creates an inaccurate perception of people with mental illness, making them less socially desirable. These stereotypes, such as being less intelligent, mentally disorganized, and dirty, diminish almost all aspects of a person (Link et al., 1997; Newheiser & Barreto, 2014). Another common belief is that those with mental illness are dangerous, leading others to desire distance from them (Rüsch et al., 2005). These negative stereotypes, such as being incompetent and untrustworthy, are preconceived notions that can lead to active discrimination (Corrigan & Kleinlein, 2005).

Discrimination toward people with mental illness can limit their resources and opportunities in areas like housing, healthcare, employment, and education. They are less likely to find proper housing as people are less likely to lease apartments to them (Padgett, 2007). They are also less likely to receive adequate health care and generally report having a lower quality of life (Couture & Penn, 2003; Link & Phelan, 2001). Discrimination in the workplace may exist when employers attempt to circumvent the hiring of these people, resulting in fewer job opportunities (Couture & Penn, 2003; Link & Phelan, 2001). In academic settings, students may socially exclude peers with mental illness when they display emotional and behavioral problems, which becomes a risk for educational underachievement (Woodward & Fergusson, 2000).

Mental Illness Stigma in College Students

Many undergraduate students show symptoms of mental illness for the first time during their college years. According to the National Institute of Mental Health (NIMH, 2001), one in four young adults between the ages of 18 and 24 have a diagnosable mental illness. Out of these young adults who attend college, more than 25% have been diagnosed or treated by a professional for a mental health condition (NIMH, 2001). These young adults encounter ineluctable difficulties when transitioning from high school to college, as they are exposed to new challenges and have to adjust to significant life changes. During this critical period, students are likely to experience personal and emotional problems, global psychological distress, somatic distress, anxiety, low self-esteem, and depression (Shim et al., 2012). The combination of students' genetic predisposition, pre-existing vulnerabilities, and psychological health issues, in conjunction with

college environmental factors, can influence the onset of mental disorders.

Students are not only coping with the onset of mental illness but with quotidian college stressors as well. Ross et al. (1999) established the most common stressors as leaving one's hometown and family, leaving one's old friends behind to settle down in an unfamiliar institution with strangers, attempting to interact and/or living with these strangers, adapting to a new teaching system, and learning how to appropriately exercise autonomy. These common challenges have been found to induce more stress in students with pre-existing or evolving psychological disabilities (Weiner, 1999). As a response, students form maladaptive coping mechanisms, which can inadvertently make them more vulnerable to these stressors. One common maladaptive coping mechanism is withdrawal from active participation in college, which can lead to loneliness and subsequent depression (Kenyon & Koerner, 2009; Nicpon et al., 2006).

Students with mental illness who cannot appropriately cope with their symptoms may experience significant impairment in academic success. They may face more challenges with class assignments, exams, concentration, managing their time, and class participation (Knis-Matthews et al., 2007). Thus, they are also less likely to receive high grades (Dusselier et al., 2005). For example, even after controlling for prior academic performance, symptoms of depression have been shown to be a significant predictor of lower GPA, resulting in higher student attrition rates (Eisenberg et al., 2009). Mental illness also has a pronounced effect on social interactions, influencing academic success (Salzer, 2012).

Positive peer interactions can serve as a protective factor against severe mental illness symptoms in students. Social support has been demonstrated to buffer and counteract the negative impact of stress (Feldman et al., 2004). Suldo et al. (2008) found that students with above-average anxiety are more likely to view social interactions as helpful. Social support can also act as a buffer against alcohol consumption—a common coping mechanism—by making it seem less functional and useful (Pauley & Hesse, 2009). Additionally, peer support can prevent loneliness, which has caused well-documented problems, such as comorbid depression among students with mental health disorders (Perese & Wolf, 2005). Furthermore, Knis-Matthews et al. (2007) found that peer support within classes improved self-confidence and gave students with mental illness a sense of accomplishment.

Mental Illness Stigma and Social Distance

Although students attempt to socialize with their peers, they often experience *social distance*—a major component of the definition of stigma. Stigma is a multifaceted concept because it can be measured in different ways, with the desire for social distance being a common measurement (Jorm & Oh, 2009). Social distance has been defined as the relative willingness of one person to participate in relationships of varying degrees of intimacy with a person who has a stigmatized identity (Bowman, 1987). In this context, it reflects how society behaviorally approaches people with mental illness as different from and inferior to themselves. Social distance has been utilized as a measure of discrimination toward adults with mental illness in many studies (Baumann, 2007; Link & Phelan, 2001; Marie & Miles, 2008). Participants in these studies responded to the Social Distance Scale (Bogardus, 1933), which is a validated measure of one's implicit attitudes toward people with mental illness and the desire to avoid them.

Greater social distance is desired more from people with mental disorders than people who suffer from minor troubles or physical illnesses (Jorm & Oh, 2009). People seem to disapprove of those with psychiatric disabilities more than those with physical illness (Teachman et al., 2006). Among psychology undergraduates, Monteith and Pettit (2011) found that implicit associations regarding the underlying psychological causes of mental illness were found with more negative evaluation compared to physical illness. Social distance has been greater toward people with mental illnesses in comparison with someone with “normal” behavior, such as stress or physical illnesses like asthma, skin cancer, or a herniated disc (Martin et al., 2007).

As students with mental illness experience social isolation, they may begin to internalize these negative public attitudes and identify as a part of a stigmatized group. This self-discrimination and social exclusion can undermine a person's identification as a student and lessen their motivation to achieve academically (Corrigan & Watson, 2002b). Along with internalized self-stigma, these “failures” result in low perceived self-esteem and self-efficacy (Watson et al., 2007). For example, people who anticipate and fear rejection—in addition to having been hospitalized for mental illness—may act less confidently or more defensively, or they may just completely avoid contact with others (Link et al., 2001). This can further increase isolation and conflicts in existing relationships.

Stigma as a Barrier to Mental Health Care

Most college students with mental disorders in the United States do not receive mental health care (Dusselier et al., 2005). In 2006, among students with a mood disorder, only between 34% and 36% received any mental health services (Eisenberg et al., 2007; Wu et al., 2007). Drum et al. (2009) found that, in 2008, more than half of college students who seriously considered attempting suicide had not received professional help. The underutilization of mental health services among students at higher risk for suicide is problematic, as seeking help has been shown to decrease the likelihood of a suicidal attempt (Brownson & Burton, 2007).

One explanation for the underutilization of mental health services by college students may be the fear of disclosure. Self-stigmatizing students may resort to hiding their mental illness, which can inhibit them from seeking mental health care. Rather than directly receiving rightful and appropriate academic accommodations, students may remain unassertive due to their fear of how stigmatizing attitudes may impact their academic achievement. In a study by Quinn et al. (2004), participants with a mental illness history performed worse on a standardized test that asked them to reveal that history compared to tests that excluded this question. Some students refrain from sharing their mental health issues to protect themselves against losing any future opportunities related to their career and education (Kranke, et al., 2011). For example, some believe that their professors will perceive them as incompetent to complete tasks, preventing them from obtaining recommendations for graduate schools and future career prospects (Corrigan & Kleinlein, 2005).

Although students can request classroom accommodations, there is a consensus among researchers regarding barriers that impact the use of them among college students with mental illness. Hartman-Hall and Haaga (2002) found a correlation between students' help-seeking behavior and their impression of the climate on campus in terms of how people perceive mental illness. One study found that people who are labeled as having used counseling services have been rated less favorably and treated more negatively than those who were not labeled for using counseling services (Sibicky & Dovidio, 1986). Furthermore, in a study by Ben-Porath (2002), hypothetical individuals described as seeking assistance for depression were rated as more emotionally unstable, less interesting, and less confident than both students who were

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

described as seeking help for back pain and those who had depression but chose not to seek help. Seeking help compels students to disclose a disability, which can make them feel vulnerable as they are voluntarily subjecting themselves to these stigmatizing attitudes. Collins and Mowbray (2005) conducted a study in which one participant suggested that schools should get rid of the self-identification model and instead rely on admissions staff to disseminate information and make referrals. This may make it easier for colleges to provide services and support to students who “hide” their disability.

Mental Illness Stigma and Perceived Similarity

To reduce stigmatizing attitudes, *perceived similarity* can be strengthened to create a bridge between people with and without mental illness. Research over the years has shown that taking a narrative approach when introducing a stigmatized person allows people to learn more about that person’s life experiences and multiple social identities. This can facilitate emotional immersion into that person’s world and elicit empathy, immersion into their perspective, and a temporary adoption of their desires, motivations, challenges, successes, and failures as their own (Miller & Brewer, 1986; Smith, 2007). Perspective taking from this narrative engagement has the potential to encourage social acceptance by increasing perceptions of similarity, increasing social attraction, and decreasing social distance for highly stigmatized people (Busselle & Bilandzic, 2008; Chung & Slater, 2013).

Many researchers have examined this phenomenon of increasing perceived similarity through a narrative approach to reduce social distance and ultimately stigma among college students. In a study by Norman et al. (2017), three groups of college students watched different videos: one group saw Andrew who was a person recovering from schizophrenia, the second group saw a different video of Andrew describing acute symptoms of schizophrenia, and the third group did not see any video. The researchers measured the reduction of stigma over a 2-week period and found that the recovery-focused presentation led to greater perceived similarity. Li et al. (2017) also conducted a study in which participants were assigned to the same videos of Andrew used in the study mentioned above. Participants were asked prior to the video to either “keep thinking of what you have in common with this person and try to find as many similarities as possible” or to “keep thinking of ways you are different from this person and try to find as many dissimilarities as possible” (Li et al., p. 119).

Watching Andrew describe his recovery led to more positive impressions, greater perceived overlap in personal characteristics, and less preferred social distance toward him than when the video focused on his symptoms.

Another study by Gay (2016) looked strictly at whether perceived similarity with someone with mental illness can reduce stigma among college students. College students were given information to think either abstractly or concretely and completed self-report and behavioral measures of stigma toward people with mental illness such as the Attribution Questionnaire. Additionally, these participants completed the Inclusion of Self in the Other Scale to rate their perceived similarity with a person with mental illness. Participants who were primed to think abstractly showed more stigmatizing attitudes toward a person with mental illness than participants who were primed to think concretely; abstract primes increased the activation of similar goals, leading to a similarity focus. Ultimately, the perception of similarity with a person with mental illness explained the relationship between construal level and stigmatizing attitudes and behavior: participants who rated themselves as being highly similar to a person with mental illness were less likely to endorse stigmatizing attitudes toward people with mental illness.

In-Group Favoritism and Out-Group Discrimination

Endorsing stigmatizing attitudes toward peers with mental illness can create *in-group* versus out-group separation. In-group favoritism is the tendency to favor members of one’s own group over those in other groups (Everett et al., 2015). Those who do not have mental illness may displace peers with mental illness into their out-group and choose to limit their interaction with them (Huggett et al., 2018). Grouping the out-group members together encourages negative stereotyping and prejudice. Research shows that this stigma creates an instinctive desire to socially distance oneself from members of out-groups (Brown et al., 2003; Dovidio et al., 2000). This is due to the perception that out-group members are inherently undesirable and defective. They are viewed as threatening or hostile (negative bias), whereas individuals perceived as in-group members are more likely to be seen as trustworthy or friendly (positive bias; Reihl et al., 2015). Separation leads to the belief that “they” (people with mental illness) are fundamentally different from “us” and that “they” are only defined by their label (Rüsch et al., 2005).

Conversely, when people perceive someone as a part of their in-group, they are more likely to include them in their social group based on perceived similarities. When in-group and out-group members work toward common, superordinate goals and foster an expanded sense of in-group identity, stigma is likely to diminish (Gaertner & Dovidio, 2000; Sherif & Sherif, 1953). The perceiver's already-formed and favorable impression of their peer, in conjunction with the positive stereotype of their shared in-group, might enter into and adjust the stereotypes held about the stigmatized group on a more general level (Major et al., 2000).

Although in-group identification has been shown to reduce stigma, it has not conclusively eliminated it toward people with mental illness compared to people with physical illness (Martin et al., 2007). People with mental illness continue to experience more stigma than those with relatively minor health problems like stress. However, amplifying perceived similarity through a common identity may eliminate inter-group differences and reduce social distance among the groups (Smith, 2007).

Current Study

Based on these previous findings, the current study aimed to examine the effect of high group identification versus low group identification on the level of stigma held toward a college peer with a mental health state of stress compared to a peer with mental illness. It was hypothesized that (a) high in-group identification with a peer, irrespective of their mental health state (stress versus mental illness), would lead to more perceived similarity and less social distance than low in-group identification, and (b) less perceived similarity and more social distance will be rated toward a peer with mental illness when compared to a peer with stress, but high in-group identification with the peer will still lead to a more favorable perception than low in-group identification.

Method

Participants

Participants ($N = 152$) were composed of undergraduate college students from a large public college—Hunter College, The City University of New York (CUNY). They were recruited through the Psychology Department Research Pool and completed the study as a requirement for the Introduction to Psychology course. Of the 152 participants, there were 100 women (66%), 48 men (32%), and 4 others (2%). See Table 1 for a detailed sample description.

Materials

Participants were asked to fill out a short questionnaire online on Qualtrics. All of the students first responded to the 4-item Group Identification Scale (GIS; Sani et al., 2015) which measures someone's sense of belonging to a group, coupled with their sense of commonality with its members on a 7-point Likert-type scale from 1 (*strongly agree*) to 7 (*strongly disagree*). Stronger group identification measured by this scale has been shown to be valid and reliable in predicting properties of social relationships such as stronger perceived support, which is known to produce positive effects on mental health (Lincoln & Chae, 2012). Previous studies measuring group identification with various social groups, such as family, friends, and community members, have established the GIS' reliability, with Cronbach's α ranging from high .80s to low .90s (Sani et al., 2015). Additionally, the scale also has shown convergent validity by strongly correlating with two other measures of the same construct: Doosje, Ellemers, and Spears's (1995) 4-item group identification measure and Postmes, Haslam, and Jans' (2013) single item group identification measure. Divergent validity has also been shown with the GIS being correlated with Postmes' (2003) perceived group distinctiveness scale, which is a scale that has been shown to be related to group identification. For

TABLE 1

Descriptive Characteristics of the Sample

	Stress Condition ($n = 74$)		Mental Illness Condition ($n = 78$)	
	n	%	n	%
Gender				
Woman	51	69	49	63
Man	21	28	27	35
Other	2	3	2	2
Race/ethnicity				
Asian	24	32	41	52
White/European American	18	24	15	20
Black/African American	6	8	8	11
Latino/Hispanic	10	14	4	5
Mixed race/ethnicity	5	7	3	4
American Indian or Alaskan Native	1	1	0	0
Native Hawaiian or Other Pacific Islander	1	1	0	0
Other	10	13	6	8
History of mental illness				
Yes	9	12	12	15
No	65	88	66	85

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

this study, participants' group identification was measured with their college peers after they heard an audio clip of a hypothetical peer describing their typical Hunter College, CUNY experience. The overall score ranged from 4 to 28 with the lowest score indicating high in-group identification. Consistent with prior literature, average scores were computed to assign high in-group identification to participants whose average score was less than 5 and low in-group identification to participants whose average score was 5 or higher (Sani et al., 2015). Some items included in this scale were, "I feel a bond with Hunter College, CUNY students" and "I feel similar to the other Hunter College, CUNY students."

The next scale utilized was the Inclusion of Other in the Self Scale (Aron et al., 1992). This 1-item scale assesses how close/similar the respondent feels with another person or group. It has exhibited convergent and divergent validity (Aron et al., 1992; Gächter et al., 2015). It has been significantly and strongly correlated with several scales that measure dimensions of relationship closeness such as the Relationship Closeness Inventory, the Loving and Liking Scales, and the Personal Acquaintance Measure Scale (Gächter et al., 2015). This scale was utilized in this study because interpersonal similarity is a component of social distance (Heider, 1958; Miller et al., 1998). In-groups are perceived as socially closer than out-groups (Fiske et al., 2002). Thus, this scale reassessed participants' desired closeness after the peer's mental health state was revealed. Participants saw seven pairs of circles that ranged from just touching to almost completely overlapping. One circle in each pair is labeled "self," and the second circle is labeled "other." Participants chose one of the seven pairs to respond to this item. They were instructed to click the diagram that best represented how close they felt to Jennifer, the Hunter College, CUNY student. The lower the score, the less similarity is perceived with the hypothetical student.

The final scale utilized is the Social Distance Scale (Link et al., 1987), which was originally adapted from the Bogardus Social Distance Scale. This 11-item scale measured the participants' likelihood to engage in varying levels of intimacy with the hypothetical student on a 7-point Likert-type scale from 1 (*strongly agree*) to 7 (*strongly disagree*). The overall scores of this scale range from 11 to 77, with higher scores indicating greater social distance from the hypothetical student. To avoid social desirability bias associated with explicit

measures of stigma, this scale has been used as a validated measure of implicit attitudes of stigma toward people with mental illness (Rüsch et al., 2010; Wang et al., 2012). Using the SDS, a recent population-wide study has also found significant stigma towards people with mental illness and identified specific groups who hold more stigmatizing attitudes (Subramaniam et al., 2017). The 11 items that make up the Social Distance Scale score showed good internal consistency with Cronbach's $\alpha = .85$, good construct validity, criterion validity, convergent validity, discriminant validity, and factor analysis (Link et al., 1987). For this study, items included in the scale were how likely the participant would be to: "Sit next to this person in class?" and "Feel comfortable being in the same classroom as this person?" Following this scale, all participants answered questions on gender, race, age, and history of mental illness.

Procedure

Prior to data collection, the manuscript received approval from the institutional review board. The Qualtrics survey was advertised on the Psychology Department online Research Pool. On Qualtrics, recruited participants were directed to first read a consent script that informed them of confidentiality, potential risks, their right to withdraw while still receiving credit, and deception. They were told that the full purpose of the study would be revealed at the end of their participation. They had to acknowledge that they are of 18 years or older and a Hunter College, CUNY student to confirm eligibility.

A between-participants experimental design with random assignment to two conditions was utilized. Initially, all 152 participants read the following direction at the beginning of the questionnaire: "We are looking to have people talk about their Hunter College, CUNY experience. Please listen to this student's experience to determine whether or not this is a typical Hunter College, CUNY student's experience." They were directed to an audio recording of Jennifer, a 20-year-old hypothetical Hunter College, CUNY student. The 18-second recording contains the following description of a typical Hunter College, CUNY college experience:

To describe my experience as a Hunter College, CUNY student, I am able to obtain quality education for an affordable price. It offers a variety of majors. It has a diverse student body, so I get to meet people from

different states and countries. Since it is in the heart of the city, there are a lot of places to go to nearby such as Central Park.

The first measure to be completed was the 4-item GIS, which assessed in-group versus out-group identification with other Hunter College, CUNY students like Jennifer.

Then, Qualtrics randomly assigned 74 participants to hear an audio clip of Jennifer revealing her experience of having stress while the other 78 heard Jennifer reveal her mental illness. In the stress condition, participants heard 8 seconds of the following vignette: “I don’t know if this is relevant or not, but last fall, I felt really stressed, and I struggled to complete my classwork. I had to miss a couple of classes.” In the mental illness condition, participants heard 10 seconds of the following vignette:

I don’t know if this is relevant or not, but last fall, I had kind of a nervous breakdown and had to be hospitalized for a while. I’ve been seeing a psychiatrist ever since and have been diagnosed with a mental illness.

Then, participants completed the 1-item Inclusion of Other in the Self Scale to rate their desired social closeness and perceived similarity to Jennifer. Finally, participants completed the adapted 11-item Social Distance Scale to rate their level of willingness to engage with Jennifer, followed by general demographic questions.

At the end of the survey, there was a debriefing section where the actual purpose of the study was disclosed, which is to look at attitudes toward students with mental illness. The participants also learned about the two different types of mental health conditions that participants were randomly assigned to.

Results

A factorial multivariate analysis of variance (MANOVA) was conducted to evaluate the effects of the two variables on the two dependent variables. Results from descriptive analysis indicated that there were no substantial violations of normality in all dependent variables. Among the 74 participants who were randomized to listen to Jennifer reveal stress, 41 rated low in-group identification with her and the other 33 rated high in-group identification. Among the 78 students who were randomized to listen to Jennifer reveal mental illness, 36 rated low in-group identification with her and the other 42 rated high in-group identification. The means and standard deviation values are shown in Table 2.

Group Identification

Results of the factorial MANOVA indicated a significant effect for in-group identification, $F(2, 147) = 8.01, p < .001$, partial $\eta^2 = .10$. This variable was significant on the dependent variables of perceived similarity, $F(1, 148) = 8.04, p = .005$, partial $\eta^2 = .05$, and social distance, $F(1, 148) = 12.32, p = .001$, partial $\eta^2 = .07$. The means and standard deviation values displayed in Table 2 show that participants who rated high in-group identification with Jennifer perceived her more favorably by rating more perceived similarity and less social distance than the participants who rated low in-group identification with her.

Peer’s Mental Health State

Results of the factorial MANOVA indicated a significant effect for the peer’s mental health state, $F(2, 147) = 8.00, p = .001$, partial $\eta^2 = .10$. This variable was significant on the dependent variables of perceived similarity, $F(1, 148) = 5.92, p = .02$, partial $\eta^2 = .04$, and social distance, $F(1, 148) = 11.28, p = .001$, partial $\eta^2 = .07$. The means and standard deviation values displayed in Table 2 show that participants who rated Jennifer with stress perceived her more favorably by rating more perceived similarity and less social distance toward her than participants who rated her with mental illness.

Group Identification and Peer’s Mental Health State

The multivariate interaction effect of the two independent variables (group identification and the peer’s mental health state) on the dependent variables (perceived similarity and social distance) together was not significant, $F(2, 147) = 2.66, p = 0.07$, partial $\eta^2 = .04$. However, as indicated in Table 2, meaningful differences were observed between these variables. Among participants who initially reported low in-group identification with

TABLE 2				
Descriptive Statistics and Effect Sizes for the Experimental and Control Groups				
Variable	Low In-Group Identification (n = 77)		High In-Group Identification (n = 75)	
	Stress (n = 41)	Mental Illness (n = 36)	Stress (n = 33)	Mental Illness (n = 42)
	M(SD)	M(SD)	M(SD)	M(SD)
Perceived Similarity	3.10 (1.62)	2.53 (1.34)	4.06 (2.11)	3.21 (1.98)
Social Distance	36.76(11.51)	41.17(10.91)	32.45(10.42)	32.24(9.50)

Note. IOS = Inclusion of Self in the Other Scale. SDS = Social Distance Scale.

WINTER 2020

PSI CHI JOURNAL OF PSYCHOLOGICAL RESEARCH

Jennifer, those who heard her disclose stress rated more perceived similarity and less social distance toward her. On the other hand, the participants who heard her disclose mental illness rated less perceived similarity and more social distance toward her.

Likewise, among participants who reported high in-group identification with Jennifer, those who heard her disclose stress rated more perceived similarity and less social distance toward her compared to those who heard her with mental illness and rated less perceived similarity and more social distance toward her.

Discussion

The results of the present study suggest that high in-group identification can shape an individual's implicit stigmatizing attitudes by eliciting a more positive perception of a peer with mental illness. Rüscher et al. (2009) established that the common identity of being a student at the same college alone may be inadequate to reduce stigma—one must exhibit higher levels of in-group perception and feel attached to their group to feel similar to other members. Thus, as hypothesized, students perceived more similarity and less social distance from the hypothetical student—regardless of their mental health state—when they identified strongly with them. Similarly, Major et al. (2000) found that, when students exhibited higher in-group perception with a peer from a stigmatized group, they expressed less stigma toward them because they identified more with them.

As expected, high in-group identification did not lead to a more positive evaluation of the peer with mental illness compared to the peer with stress. This finding is congruent with previous studies, which found that people with minor problems such as stress are less stigmatized than people with mental illness (Teachman et al., 2006). Therefore, this study supports existing literature by indicating that less social support is offered to these students (Livingston & Boyd, 2010). However, when examining the role of group identification, the current study found that students who identified more with their peers showed the smallest difference between the scores for the peer with stress and the peer with mental illness. This suggests that group identification had a significant impact on one's stigmatizing attitudes toward peers with mental illness. This is supported by research from Gaertner and Dovidio (2000) and Sherif and Sherif (1953) who found that stigma is likely to decrease when people work toward similar and significant goals, as this increases an expanded sense of in-group identity.

Limitations and Strengths

A limitation of this study is that participants were recruited from an introductory course. Most were first-year or transfer students in their first semester at Hunter College, CUNY. Additionally, the 4-item GIS may not have been strong enough to detect in-group/out-group identity within this group of college students. The college is known for being a commuter school where very few students live in housing provided by the college or near the college. Thus, they might not have yet established a bond with other students at their college or a strong identification with being a student of their college. Another limitation could have been the significant difference in the number of participants who identified as men versus women, with 66% identifying as women; the participant's gender could have influenced how they rated the hypothetical student, who was a woman. Furthermore, the mental illness audio script might have been perceived as more severe than the stress audio script, which could have contributed to the unfavorable perception of the peer with mental illness. However, the hypothetical peer's hospitalization was considered to be an essential component of their college experience, as many young adults first experience mental illness at this age and are subsequently hospitalized.

Implications and Future Directions

The overall implications for this study are significant and applicable when targeting stigma because, although stigma could not be removed toward peers with mental illness, it decreased when students strongly identified with their peers. This conveys that, if an atmosphere can be created in a college climate where students have a strong sense of college community, it could reduce the extent to which students stereotype those with mental illness. Because many students have mental illness, increasing awareness of this shared identity in educational institutions can help students reframe their perception of people with mental illness. This idea is consistent with research by Gaertner et al. (2000), who established the common in-group identity model to explain that people of different groups can modify their perceptions to see themselves as members of a common larger group that includes previously labeled in-group and out-group members. Students can recategorize themselves to be a part of a superordinate group of peers instead of labeling and separating other students with mental illness as "them." This is also

supported by research from McCrea et al. (2012), who found that increasing people's focus on group generalization leads to less stereotypical social categorizations. Inter-group bias between students who have mental illness and those who do not have mental illness can potentially be diminished through the emphasis of the common identity of being a student of the same institution.

Educational institutions can take advantage of the enhanced awareness of this shared student identity to promote help-seeking behaviors. Stigma from peers can demotivate students from utilizing the counseling services at their college (Jennings et al., 2015). However, our findings suggest that creating this environment where the emphasis lies on common identities and goals, rather than one's mental health state, can potentially increase social support, which has been shown to have a positive relationship with the number of students who seek help (Hartman-Hall & Haaga, 2002; Keum et al., 2018; Sibicky & Dovidio, 1986). A large body of research shows that the implementation of mental health literacy programs in educational institutions may also be effective in preventing mental health problems, decreasing mental health stigma, and increasing help-seeking behaviors (Jung et al., 2017; Kim et al., 2020; Kutcher, et al., 2016; Whitley et al., 2013). Furthermore, programs can take a narrative approach when introducing someone with mental illness to increase awareness about that person's life experiences and multiple social identities (Miller & Brewer, 1986; Smith, 2007). This approach may not only reduce prejudice and promote perceived similarity but also pre-empt any negative inter-group expectations of people with mental illness who are currently around these students, such as peers with mental illness (Busselle & Bilandzic, 2008; Chung & Slater, 2013).

As students' level of mental health knowledge increases, they can begin to apply this knowledge when interacting with peers who may have mental illness. Educational institutions may consider increasing contact between students through group education to promote any shared common identities and similarities in addition to the common identity of being members of the same institution. Additionally, researchers of a recent study were the first to show that college students who became involved in a student peer organization, developed to increase mental health literacy and decrease mental health stigma, were more likely to take action to support peers with mental health issues (Sontag-Padilla et al., 2018).

In conclusion, this study suggests that increasing this awareness of shared in-group identification reinforces a more positive view of someone with mental illness, which can potentially reduce stigma and lead to less hostility toward them. Although high in-group identification does not entirely eliminate stigma, it can narrow the gap between inter-groups because peers with mental illness were stigmatized to a smaller degree in this study. Nevertheless, reducing stigma is important because stigma from peers can become a barrier in accessing care, but fostering a sense of similarity by emphasizing the shared student identity and goals may potentially increase the number of students who seek help (Keum et al., 2018, Hartman-Hall & Haaga, 2002; Sibicky & Dovidio, 1986). Creating a college environment where the emphasis lies on a common identity and goals, rather than one's mental health state, may potentially increase the number of students who seek help (Keum et al., 2018). Educational institutions may increase in-group awareness with peers with mental illness by implementing mental health literacy programs and increasing any inter-group contact through group education and student peer organizations. Future research should continue to explore the efficacy of these interventions in helping to combat overall stigma by targeting those who are more prone to holding stigmatizing attitudes and opinions about people with mental illness and subsequently increasing social support and help-seeking intentions among those with mental illness.

References

- Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*(4), 596-612. <https://doi.org/10.1037/0022-3514.63.4.596>
- Baumann, A. E. (2007). Stigmatization, social distance and exclusion because of mental illness: The individual with mental illness as a 'stranger'. *International Review of Psychiatry, 19*(2), 131-135. <https://doi.org/10.1080/09540260701278739>
- Ben-Porath, D. D. (2002). Stigmatization of individuals who receive psychotherapy: An interaction between help-seeking behavior and the presence of depression. *Journal of Social and Clinical Psychology, 21*(4), 400-413. <https://doi.org/10.1521/jscp.21.4.400.22594>
- Bogardus, E. S. (1933). A social distance scale. *Sociology and Social Research, 17*, 265-271.
- Bowman, J. T. (1987). Attitudes toward disabled persons: Social distance and work competence. *Journal of Rehabilitation, 53*(1), 41.
- Brown, L., Macintyre, K., & Trujillo, L. (2003). Interventions to reduce HIV/AIDS stigma: What have we learned? *AIDS Education and Prevention, 15*(1), 49-69. <https://doi.org/10.1521/aeap.15.1.49.23844>
- Brownson, C., & Burton, A. (2007, May). The nature of suicidal crises in college students: New data and implications. In *American College Health Association Conference*.
- Busselle, R., & Bilandzic, H. (2008). Fictionality and perceived realism in experiencing stories: A model of narrative comprehension and engagement. *Communication Theory, 18*(2), 255-280. <https://doi.org/10.1111/j.1468-2885.2008.00322.x>
- Chung, A. H., & Slater, M. D. (2013). Reducing stigma and out-group distinctions through perspective taking in narratives. *Journal of Communication, 63*(5),

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

- 894-911. <https://doi.org/10.1111/jcom.12050>
- Collins, M. E., & Mowbray, C. T. (2005). Higher education and psychiatric disabilities: National survey of campus disability services. *American Journal of Orthopsychiatry*, 75(2), 304-315. <https://doi.org/10.1037/0002-9432.75.2.304>
- Corrigan, P. W., & Kleinlein, P. (2005). The impact of mental illness stigma. In P. W. Corrigan (Ed.), *On the stigma of mental illness: Practical strategies for research and social change* (pp. 11-44).
- Corrigan, P. W., River, L. P., Lundin, R. K., Wasowski, K. U., Campion, J., Mathisen, J., Goldstein, H., Bergman, M., Gagnon, C., & Kubiak, M. (2000). Stigmatizing attributions about mental illness. *Journal of Community Psychology*, 28(1), 91-102. [https://doi.org/10.1002/\(SICI\)1520-6629\(200001\)28:1<91::AID-JCOP9>3.0.CO;2-M](https://doi.org/10.1002/(SICI)1520-6629(200001)28:1<91::AID-JCOP9>3.0.CO;2-M)
- Corrigan, P. W., & Watson, A. (2002a). Understanding the impact of stigma on people with mental illness. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)*, 1(1), 16-20.
- Corrigan, P. W., & Watson, A. C. (2002b). The paradox of self-stigma and mental illness. *Clinical Psychology: Science and Practice*, 9(1), 35-53. <https://doi.org/10.1093/clipsy.9.1.35>
- Couture, S., & Penn, D. (2003). Interpersonal contact and the stigma of mental illness: A review of the literature. *Journal of Mental Health*, 12(3), 291-305. <https://doi.org/10.1080/09638231000118276>
- Doosje, B., Ellemers, N., & Spears, R. (1995). Perceived intragroup variability as a function of group status and identification. *Journal of Experimental Social Psychology*, 31(5), 410-436. <https://doi.org/10.1006/jesp.1995.1018>
- Dovidio, J. F., Major, B., & Crocker, J. (2000). Stigma: Introduction and overview. In T. F. Heatherton, R. E. Kleck, M. R. Hebl, & J. G. Hull (Eds.), *The social psychology of stigma* (p. 1-28). Guilford Press.
- Drum, D. J., Brownson, C., Denmark, A., & Smith, S. E. (2009). New data on the nature of suicidal crises in college students: Shifting the paradigm. *Professional Psychology: Research and Practice*, 40(3), 213-222. <https://doi.org/10.1037/a0014465>
- Dusselier, L., Dunn, B., Wang, Y., Shelley II, M. C., & Whalen, D. F. (2005). Personal, health, academic, and environmental predictors of stress for residence hall students. *Journal of American College Health*, 54(1), 15-24. <https://doi.org/10.3200/JACH.54.1.15-24>
- Eisenberg, D., Golberstein, E., & Gollust, S. E. (2007). Help-seeking and access to mental health care in a university student population. *Medical Care*, 45(7), 594-601. <https://doi.org/10.1097/MLR.0b013e31803bb4c1>
- Eisenberg, D., Golberstein, E., & Hunt, J. B. (2009). Mental health and academic success in college. *The BE Journal of Economic Analysis & Policy*, 9(1), 1-37. <https://doi.org/10.2202/1935-1682.2191>
- Everett, J. A., Faber, N. S., & Crockett, M. (2015). Preferences and beliefs in ingroup favoritism. *Frontiers in Behavioral Neuroscience*, 9, 15. <https://doi.org/10.3389/fnbeh.2015.00015>
- Feldman, P., Cohen, S., Hamrick, N., & Lepore, S. (2004). Psychological stress, appraisal, emotion and cardiovascular response in a public speaking task. *Psychology & Health*, 19(3), 353-368. <https://doi.org/10.1080/0887044042000193497>
- Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, 82(6), 878-902. <https://doi.org/10.1037/0022-3514.82.6.878>
- Gächter, S., Starmer, C., & Tufano, F. (2015). Measuring the closeness of relationships: A comprehensive evaluation of the 'Inclusion of the Other in the Self' Scale. *PLoS One*, 10(6). <https://doi.org/10.1371/journal.pone.0129478>
- Gaertner, S. L., & Dovidio, J. F. (2000). *Reducing intergroup bias: The Common Ingroup Identity Model*. Psychology Press. <https://doi.org/10.4324/9781315804576>
- Gaertner, S. L., Dovidio, J. F., Nier, J. A., Banker, B. S., Ward, C. M., Houlette, M., & Loux, S. (2000). The common ingroup identity model for reducing intergroup bias: Progress and challenges. In D. Capozza, & R. Brown (Eds.), *Social identity processes. Trends in theory and research* (pp. 133-148). <https://doi.org/10.4135/9781446218617n9>
- Gay, J. (2016). *The effects of construal level on stigmatizing attitudes toward an individual with mental illness* (Doctoral Dissertation). Georgia Southern University, Statesboro, Georgia.
- Hartman-Hall, H. M., & Haaga, D. A. F. (2002). College students' willingness to seek help for their learning disabilities. *Learning Disability Quarterly*, 25(4), 263-274. <https://doi.org/10.2307/1511357>
- Heider, F. (1958). *The Psychology of interpersonal relations*. Psychology Press.
- Huggett, C., Birtel, M. D., Awenat, Y. F., Fleming, P., Wilkes, S., Williams, S., & Haddock, G. (2018). A qualitative study: Experiences of stigma by people with mental health problems. *Psychology and Psychotherapy: Theory, Research and Practice*, 91(3), 380-397. <https://doi.org/10.1111/papt.12167>
- Jennings, K. S., Cheung, J. H., Britt, T. W., Goguen, K. N., Jeffers, S. M., Peasley, A. L., & Lee, A. C. (2015). How are perceived stigma, self-stigma, and self-reliance related to treatment-seeking? A three-path model. *Psychiatric Rehabilitation Journal*, 38(2), 109. <https://doi.org/10.1037/prj0000138>
- Jorm, A. F., & Oh, E. (2009). Desire for social distance from people with mental disorders. *Australian and New Zealand Journal of Psychiatry*, 43(3), 183-200. <https://doi.org/10.1080/00048670802653349>
- Jung, H., von Sternberg, K., & Davis, K. (2017). The impact of mental health literacy, stigma, and social support on attitudes toward mental health help-seeking. *International Journal of Mental Health Promotion*, 19(5), 252-267. <https://doi.org/10.1080/14623730.2017.1345687>
- Kenyon, D. B., & Koerner, S. S. (2009). College student psychological well-being during the transition to college: Examining individuation from parents. *College Student Journal*, 43(4), 1145-1160. <https://doi.org/10.1016/j.jadohealth.2006.11.116>
- Keum, B. T., Hill, C. E., Kivlighan Jr, D. M., & Lu, Y. (2018). Group- and individual-level self stigma reductions in promoting psychological help-seeking attitudes among college students in helping skills courses. *Journal of Counseling Psychology*, 65(5), 661-668. <https://doi.org/10.1037/cou0000283>
- Kim, E., Yu, J., & Kim, E. (2020). Pathways linking mental health literacy to professional help-seeking intentions in Korean college students. *Journal of Psychiatric and Mental Health Nursing*, 27(4), 393-405. <https://doi.org/10.1111/jpm.12593>
- Knis-Matthews, L., Bokara, J., DeMeo, L., Lepore, N., & Mavus, L. (2007). The meaning of higher education for people diagnosed with a mental illness: Four students share their experiences. *Psychiatric Rehabilitation Journal*, 31(2), 107-114. <https://doi.org/10.2975/31.2.2007107114>
- Kranke, D. A., Floersch, J., Kranke, B. Ol., & Munson, M. R. (2011). A qualitative investigation of self-stigma among adolescents taking psychiatric medication. *Psychiatric Services*, 62(8), 893-899. https://doi.org/10.1176/ps.62.8.pss6208_0893
- Kutcher, S., Wei, Y., & Coniglio, C. (2016). Mental health literacy: Past, present, and future. *Canadian Journal of Psychiatry*, 61(3), 154-158. <https://doi.org/10.1177/0706743715616609>
- Li, Y., Sorrentino, R. M., Norman, R. M. G., Hampson, E., & Ye, Y. (2017). Effects of symptom versus recovery video, similarity, and uncertainty orientation on the stigmatization of schizophrenia. *Personality and Individual Differences*, 106, 117-121. <https://doi.org/10.1016/j.paid.2016.10.050>
- Lincoln, K. D., & Chae, D. H. (2012). Emotional support, negative interaction, and major depressive disorder among African Americans. *Social Psychiatry & Psychiatric Epidemiology*, 47(3), 361-372. <https://doi.org/10.1007/s00127-011-0347-y>
- Link, B. G., Cullen, F. T., Frank, J., & Wozniak, J. F. (1987). The social rejection of former mental patients: Understanding why labels matter. *American Journal of Sociology*, 92(2), 1461-1500. <https://doi.org/10.1086/228672>
- Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, 27(6), 363-385. <https://doi.org/10.1146/annurev.soc.27.1.363>
- Link, B. G., Struening, E. L., Neese-Todd, S., Asmussen, S., & Phelan, J. C. (2001). Stigma as a barrier to recovery: The consequences of stigma for the self-esteem of people with mental illnesses. *Psychiatric Services*, 52(12), 1621-1626. <https://doi.org/10.1176/appi.ps.52.12.1621>
- Link, B. G., Struening, E. L., Rahav, M., Phelan, J. C., & Nuttbrock, L. (1997). On stigma and its consequences: Evidence from a longitudinal study of men with dual diagnoses of mental illness and substance abuse. *Journal of Health and Social Behavior*, 38(2), 177-190. <https://doi.org/10.2307/2955424>
- Livingston, J. D., & Boyd, J. E. (2010). Correlates and consequences of internalized stigma for people living with mental illness: A systematic review and meta-analysis. *Social Science & Medicine*, 71(12), 2150-2161. <https://doi.org/10.1016/j.socscimed.2010.09.030>
- Major, B., Quinton, W. J., McCoy, S. K., & Schmader, T. (2000). Reducing prejudice: The target's perspective. In S. Oskamp (Ed.), *The Claremont Symposium on Applied Social Psychology: Reducing prejudice and discrimination* (p. 211-237). Lawrence Erlbaum Associates Publishers.
- Marie, D., & Miles, B. (2008). Social distance and perceived dangerousness across four diagnostic categories of mental disorder. *Australian and New Zealand Journal of Psychiatry*, 42(2), 126-133. <https://doi.org/10.1080/00048670701787545>
- Martin, J. K., Pescosolido, B. A., Olfandottir, S., & McLeod, J. D. (2007). The construction of fear: Americans' preferences for social distance from children and adolescents with mental health problems. *Journal of Health and*

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

- Social Behavior*, 48(1), 50–67. <https://doi.org/10.1177/002214650704800104>
- McCrea, S. M., Wieber, F., & Myers, A. L. (2012). Construal level mind-sets moderate self and social stereotyping. *Journal of Personality and Social Psychology*, 102(1), 51–68. <https://doi.org/10.1037/a0026108>
- Miller, N., & Brewer, M. B. (1986). Categorization effects on ingroup and outgroup perception. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 209–230). Academic Press.
- Miller, D. T., Downs, J. S., & Prentice, D. A. (1998). Minimal conditions for the creation of a unit relationship: The social bond between birthday mates. *European Journal of Social Psychology*, 28(3), 475–481. [https://doi.org/10.1002/\(SICI\)1099-0992\(199805/06\)28:3<475::AID-EJSP881>3.0.CO;2-M](https://doi.org/10.1002/(SICI)1099-0992(199805/06)28:3<475::AID-EJSP881>3.0.CO;2-M)
- Monteith, L. L., & Pettit, J. W. (2011). Implicit and explicit stigmatizing attitudes and stereotypes about depression. *Journal of Social and Clinical Psychology*, 30(5), 484–505. <https://doi.org/10.1521/jscp.2011.30.5.484>
- National Institute of Mental Health. (2001). The impact of mental illness on society.
- Newheiser, A. K., & Barreto, M. (2014). Hidden costs of hiding stigma: Ironic interpersonal consequences of concealing a stigmatized identity in social interactions. *Journal of Experimental Social Psychology*, 52, 58–70. <https://doi.org/10.1016/j.jesp.2014.01.002>
- Nicpon, M. F., Huser, L., Blanks, E. H., Solonenberger, S., Befort, C., & Kurpius, S. E. R. (2006). The relationship of loneliness and social support with college freshmen's academic performance and persistence. *Journal of College Student Retention: Research, Theory & Practice*, 8(3), 345–358. <https://doi.org/10.2190/A465-356M-7652-783R>
- Norman, R. M., Li, Y., Sorrentino, R., Hampson, E., & Ye, Y. (2017). The differential effects of a focus on symptoms versus recovery in reducing stigma of schizophrenia. *Social Psychiatry and Psychiatric Epidemiology*, 52(11), 1385–1394. <https://doi.org/10.1007/s00127-017-1429-2>
- Padgett, D. K. (2007). There's no place like (a) home: Ontological security among persons with serious mental illness in the United States. *Social Science & Medicine*, 64(9), 1925–1936. <https://doi.org/10.1016/j.socscimed.2007.02.011>
- Pauley, P., & Hesse, C. (2009). The effects of social support, depression, and stress on drinking behaviors in a college student sample. *Communication Studies*, 60(5), 493–508. <https://doi.org/10.1080/10510970903260335>
- Perese, E. F., & Wolf, M. (2005). Combating loneliness among persons with severe mental illness: Social network interventions' characteristics, effectiveness, and applicability. *Issues in Mental Health Nursing*, 26(6), 591–609. <https://doi.org/10.1080/016128405995959425>
- Postmes, T. (2003). A social identity approach to communication in organizations. In S. A. Haslam, van Knippenberg D., M. J. Platow & N. Ellemers (Eds.), *Social identity at work: Developing theory for organizational practice* (pp. 81–98). Psychology Press.
- Postmes, T., Haslam, S. A., & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. *British Journal of Social Psychology*, 52(4), 597–617. <https://doi.org/10.1111/bjso.12006>
- Quinn, D. M., Kahng, S. K., & Crocker, J. (2004). Discreditable: Stigma effects of revealing a mental illness history on test performance. *Personality and Social Psychology Bulletin*, 30(7), 803–815. <https://doi.org/10.1177/0146167204264088>
- Reihl, K. M., Hurley, R. A., & Taber, K. H. (2015). Neurobiology of implicit and explicit bias: Implications for clinicians. *The Journal of Neuropsychiatry and Clinical Neurosciences*, 27(4), A6–253. <https://doi.org/10.1176/appi.neuropsych.15080212>
- Ross, S. E., Niebling, B. C., & Heckert, T. M. (1999). Sources of stress among college students. *College Students*, 33, 312–318.
- Rössler, W. (2016). The stigma of mental disorders. *EMBO Reports*, 17, 1250–1253. <https://doi.org/10.15252/embr.201643041>
- Rüsch, N., Angermeyer, M. C., & Corrigan, P. W. (2005). Mental illness stigma: Concepts, consequences, and initiatives to reduce stigma. *European Psychiatry*, 20(8), 529–539. <https://doi.org/10.1016/j.eurpsy.2005.04.004>
- Rüsch, N., Corrigan, P. W., Wassel, A., Michaels, P., Olschewski, M., Wilkniss, S., & Batia, K. (2009). Ingroup perception and responses to stigma among persons with mental illness. *Acta Psychiatrica Scandinavica*, 120(4), 320–328. <https://doi.org/10.1111/j.1600-0447.2009.01403.x>
- Rüsch, N., Todd, A. R., Bodenhausen, G. V., & Corrigan, P. W. (2010). Biogenetic models of psychopathology, implicit guilt, and mental illness stigma. *Psychiatry Research*, 179(3), 328–332. <https://doi.org/10.1016/j.psychres.2009.09.010>
- Salzer, M. S. (2012). A comparative study of campus experiences of college students with mental illnesses versus a general college sample. *Journal of American College Health*, 60(1), 1–7. <https://doi.org/10.1080/07448481.2011.552537>
- Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J. R. H. (2015). Greater number of group identifications is associated with lower odds of being depressed: Evidence from a Scottish community sample. *British Journal of Health Psychology*, 20(3), 466–481. <https://doi.org/10.1111/bjhp.12119>
- Sherif, M., & Sherif, C. W. (1953). Groups in harmony and tension; an integration of studies of intergroup relations. *Social Forces*, 33(2), 195–196. <https://doi.org/10.2307/2573559>
- Shim, S. S., Ryan, A. M., & Cassidy, J. (2012). Changes in self-esteem across the first year in college: The role of achievement goals. *Educational Psychology*, 32(2), 149–167. <https://doi.org/10.1080/01443410.2011.627837>
- Sibicky, M., & Dovidio, J. F. (1986). Stigma of psychological therapy: Stereotypes, interpersonal reactions, and the self-fulfilling prophecy. *Journal of Counseling Psychology*, 33(2), 148–154. <https://doi.org/10.1037/0022-0167.33.2.148>
- Smith, R. A. (2007). Language of the lost: An explication of stigma communication. *Communication Theory*, 17(4), 462–485. <https://doi.org/10.1111/j.1468-2885.2007.00307>
- Sontag-Padilla, L., Dunbar, M. S., Ye, F., Kase, C., Fein, R., Abelson, S., Seelam, R., & Stein, B. D. (2018). Strengthening college students' mental health knowledge, awareness, and helping behaviors: the impact of active minds, a peer mental health organization. *Journal of the American Academy of Child & Adolescent Psychiatry*, 57(7), 500–507. <https://doi.org/10.1016/j.jaac.2018.03.019>
- Subramaniam, M., Abidin, E., Picco, L., Pang, S., Shafie, S., Vaingankar, J., Kwok, K., Verma, K., & Chong, S. (2017). Stigma towards people with mental disorders and its components – a perspective from multi-ethnic Singapore. *Epidemiology and Psychiatric Sciences*, 26(4), 371–382. <https://doi.org/10.1017/S2045796016000159>
- Suldo, S. M., Shaunessy, E., & Hardesty, R. (2008). Relationships among stress, coping, and mental health in high-achieving high school students. *Psychology in the Schools*, 45(4), 273–290. <https://doi.org/10.1002/pits.20300>
- Teachman, B. A., Wilson, J. G., & Komarovskaya, I. (2006). Implicit and explicit stigma of mental illness in diagnosed and healthy samples. *Journal of Social and Clinical Psychology*, 25(1), 75–95. <https://doi.org/10.1521/jscp.2006.25.1.75>
- Wang, X., Huang, X., Jackson, T., & Chen, R. (2012). Components of implicit stigma against mental illness among Chinese students. *PloS One*, 7(9). <https://doi.org/10.1371/journal.pone.0046016>
- Watson, A. C., Corrigan, P., Larson, J. E., & Sells, M. (2007). Self-stigma in people with mental illness. *Schizophrenia Bulletin*, 33(6), 1312–1318. <https://doi.org/10.1093/schbul/sbl076>
- Weiner, B. (1972). Attribution theory, achievement motivation, and the educational process. *Review of Educational Research*, 42(2), 203–215. <https://doi.org/10.3102/00346543042002203>
- Weiner, E. (1999). The meaning of education for university students with a psychiatric disability: A grounded theory analysis. *Psychiatric Rehabilitation Journal*, 22(4), 403–410. <https://doi.org/10.1037/h0095209>
- Whitley, J., Smith, D., Vaillancourt, T. (2013). Promoting mental health literacy among educators: Critical in school-based prevention and intervention. *Canadian Journal of School Psychology*, 28(1), 56–70. <https://doi.org/10.1177/0829573512468852>
- Woodward, L., & Fergusson, D. (2000). Childhood peer relationship problems and later risks of educational under-achievement and unemployment. *Journal of Child Psychology and Psychiatry*, 41(2), 191–201. <https://doi.org/10.1111/1469-7610.00600>
- Wu, L. T., Pilowsky, D. J., Schlenger, W. E., & Hasin, D. (2007). Alcohol use disorders and the use of treatment services among college-age young adults. *Psychiatric Services*, 58(2), 192–200. <https://doi.org/10.1176/appi.ps.58.2.192>

Author Note. Fayel Mustafiz  <https://orcid.org/0000-0003-2000-321X>

Fayel Mustafiz is now at the Department of Psychiatry at New York State Psychiatric Institute and Columbia University Medical Center, New York, NY.

We have no known conflict of interest to disclose. Special thanks to the exceptional reviewers of *Psi Chi Journal* for their support.

Correspondence concerning this article should be addressed to Dawn D. Dugan, Department of Psychology, Hunter College, The City University of New York, 695 Park Ave, New York, NY 10065. Email: mustafiz.fayel@gmail.com

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

The Effect of Treatability Information and Genetic Explanations on Schizophrenia Stigma

Noah Hinkley and Jordan Sparks Waldron*

Department of Psychological Sciences, University of Indianapolis

ABSTRACT. Attributing mental illness to genetic factors has been shown to reduce blame; however, doing so may create other negative attitudes. Genetic attributions can increase the desire to remain distant from someone with a mental illness (desire for social distance), reduce one's beliefs that an ill person can get better (prognostic pessimism), and cause people living with mental illness to be perceived as more dangerous. Presenting information about how mental illnesses can be treated alongside a genetic causal attribution may combat these negative side effects. Participants ($N = 268$) were recruited through Amazon's Mechanical Turk to read vignettes about a man ("John") with schizophrenia. Participants randomly received either a genetic or environmental attribution for John's illness, and then received treatability information or no information. A genetic explanation of schizophrenia led people to believe that the symptoms of schizophrenia described in the vignette were more permanent, $p < .01$, $\eta_p^2 = .07$; however, this finding was qualified by a significant interaction where the type of attribution had no impact on prognostic pessimism when presented with treatability information, $p = .04$, $\eta_p^2 = .01$. The present findings suggest the potential importance of emphasizing treatability information for disorders that are perceived to be genetically influenced.

Keywords: essentialist bias, treatability information, schizophrenia, stigma, genetics

Schizophrenia represents a leading cause of disability (Vos et al., 2017) and is extremely costly for society (Desai et al., 2013). In addition to the distress and impairment associated with schizophrenia, it carries significant *public stigma* that may lead to discrimination and negative outcomes such as barriers to care and employment (Ahmedani, 2011; Corrigan, 2000). Public stigma encompasses negative behaviors and attitudes (e.g., devaluation from others) toward a group of people. Stigma directed toward those affected by mental illness can result in struggle obtaining jobs, forming friendships, etc. (Corrigan, 1998). Given the problematic consequences of stigma, understanding potential factors that impact it is of paramount interest.

Several stigmatizing attitudes have been shown to vary based on beliefs about the cause of

a problem, or *causal attribution* (Angermeyer et al., 2015; Gangi et al., 2016; Haslam & Kvaale, 2015; Lebowitz & Ahn, 2012; Lebowitz & Ahn, 2015; Schomerus et al., 2014). If an attribution appears to be something within an individual's control, the individual is more likely to be blamed for it. Conversely, attribution to something outside an individual's control is associated with less blame (Corrigan, 2000). One group of causal attributions that has been linked with perceived controllability is biological explanations for behaviors (Corrigan, 2000; Haslam & Kvaale, 2015).

A common example of a biological attribution is the use of genetic explanations. Scientists are beginning to link genetics to a broad variety of qualities, from disease vulnerabilities to attitudes and behaviors (Dar-Nimrod & Heine, 2011). Recent efforts have focused on explaining diseases and

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

disorders, including mental illnesses, in genetic terms in an effort to reduce stigma (Haslam & Kvaale, 2015). Genetic explanations have indeed been shown to successfully reduce blame (Haslam, 2011; Haslam & Kvaale, 2015; Kvaale et al., 2013). Genetics are perceived to be out of one's control, and thus genetically influenced problems warrant less blame (Corrigan, 2000; Haslam & Kvaale, 2015).

Unfortunately, this reduction of blame is not without cost (Haslam & Kvaale, 2015). Genetic explanations come with a unique set of associated attitudes and biases, coined the "genetic essentialist bias" (Cheung et al., 2014; Dar-Nimrod & Heine, 2011). An essentialist bias is one where a perceived "essence" or key component of a person (for instance, race or gender) is seen as having "immutable" or unchanging properties that make groups of people different from others and influences their behaviors. In the case of genetic essentialism, genes are seen as the essence of biology and behavior, and the perceived immutable nature of genes is thought to directly predict behavior. As a result, essentialist biases are evoked when a condition, such as schizophrenia, is attributed to and explained in terms of genetic influences (Dar-Nimrod & Heine, 2011).

In the case of mental illness, the genetic essentialist bias, evoked by biogenetic explanations for the illness in question, often gives rise to negative stigmatizing attitudes (Ahmedani, 2011). For instance, the desire for *social distance*, which encompasses how comfortable people are with others entering their lives, such as marrying into the family or moving next door (Link et al., 1999), typically increases when people are presented with genetic explanations for mental illnesses (Angermeyer et al., 2015; Schomerus et al., 2014). Lebowitz and Ahn (2012) found that attributing borderline personality disorder and schizophrenia to genetic factors resulted in laypersons being less willing to work with individuals with these disorders and less agreeable to having people with these disorders become their neighbor or marry into the family. Other factors, especially perceived dangerousness (i.e., the degree to which someone feels that the target has the capacity to be violent toward others; Link et al., 1999) and prognostic pessimism (i.e., the perceived permanence of the target's symptoms; Haslam & Kvaale, 2015), are also associated with genetic explanations for disorders (Dar-Nimrod & Heine, 2011; Lebowitz & Ahn, 2012; Lebowitz & Ahn, 2015). Haslam and Kvaale's (2015) Mixed Blessings Model asserts that the perceived uncontrollability of genes causes the reduction

in blame, but the perceived essential differences between laypersons and those affected by mental illness creates the other stigmatizing attitudes such as perceived dangerousness, prognostic pessimism, and desire for social distance.

The relationship between genetic attributions of mental illness and stigma depends on the disorder in question, however. For example, Schomerus et al. (2014) found in a comparative study of genetic attributions on depression, schizophrenia, and alcohol dependence that genetic explanations were associated with greater desire for social distance in the cases of depression and schizophrenia, but were associated with decreased desire for social distance in the case of alcohol dependence. Further, Lee et al. (2014) found that genetic explanations for schizophrenia caused greater desire for social distance when compared to bipolar disorder and major depression, and that the greater desire for social distance was mediated by higher perceived dangerousness of individuals with schizophrenia. Additionally, Angermeyer et al. (2015) found that, when participants were given vignettes describing a person with a diagnosis of either schizophrenia or depression, participants were more likely to endorse biogenetic causes for schizophrenia than depression and desire more social distance from the vignette target with schizophrenia than the one with depression.

In summary, it appears that biogenetic explanations for mental illness are more common in the case of schizophrenia and have more powerful adverse effects on stigma for schizophrenia than many other mental health conditions. Thus, understanding factors that magnify stigma of individuals with schizophrenia is of particular interest and may lead to potential strategies to combat its negative effects, potentially improving quality of life and lessening struggles associated with this difficult illness.

One possible solution to the negative social stigma that comes from genetic explanations for schizophrenia is *treatability information* (McGinty et al., 2015). In some contexts, providing information about a disorder's treatability may reduce stigma (McGinty et al., 2015). This information might be especially impactful when paired alongside biogenetic explanations. For example, in a study by Lebowitz and Ahn (2012), participants received biogenetic explanations for schizophrenia and borderline personality disorder. Participants who also received information about successful ways those conditions could be treated reported less desire for social distance in comparison to those who only

received biogenetic explanations. Although this study has very promising implications for preventing some of the negative effects of biological explanations for mental illness, results from other studies have been inconsistent. For example, Gangi et al. (2016) conducted an experiment using vignettes about an individual with depression in which both treatability information and causal attribution were manipulated. The authors found that treatability information did not interact with causal attribution in impacting desire for social distance from people with depression. One possible explanation for this inconsistency may be that the studies looked at different disorders. Gangi et al. (2016) examined depression, whereas Lebowitz and Ahn (2012) looked at schizophrenia and borderline personality disorder. Gangi et al. (2016) suggested that people are much more likely to be familiar with depression than they are with schizophrenia or borderline personality disorder, and that may account for the inconsistencies in their findings when compared to Lebowitz and Ahn (2012).

The current study aimed to clarify and build off of previous studies by investigating how presenting treatability information alongside a genetic explanation of schizophrenia relates to stigmatizing attitudes that have been associated with genetic attributions. Social distance, prognostic pessimism, and dangerousness were the target dependent variables. This study was the first known study to investigate how all three of the target variables can be affected by the interaction between attribution and treatability in the case of schizophrenia. Dangerousness was of particular interest for this study because neither Lebowitz and Ahn (2012) nor Gangi et al. (2016) examined dangerousness despite previous research showing that schizophrenia tends to be seen as more dangerous than other mental health conditions such as depression (Link et al., 1999). By presenting carefully controlled vignette conditions in a 2 (causal attribution) \times 2 (treatability) design with an MTurk sample, the aim was to help clarify the conflicting research about the impact of causal attribution and treatability information on stigma in schizophrenia.

We hypothesized that there would be a main effect for causal attribution such that participants who received the genetic explanation for schizophrenia would score significantly higher on the dependent variables (desire for social distance, prognostic pessimism, and perceived dangerousness) than participants who received the environmental explanation. Based on the results of

Lebowitz and Ahn (2012), no main effect for treatability on the dependent variables was expected. Finally, an interaction effect was expected between causal attribution and treatability, such that the presence of treatability information would not have a significant impact in the environmental condition, but participants in the genetic condition who received treatability information would score significantly lower on all dependent variables (less stigmatizing attitudes) than those who did not receive treatability information.

Method

Participants

After obtaining approval from the University of Indianapolis institutional review board, participants were recruited through Amazon's Mechanical Turk (MTurk), a database where people can sign up to complete online tasks, called "HITS" (Human Intelligence Tasks) for compensation. Two-hundred eighty-seven participants completed at least part of the study. Nineteen individuals were excluded from analyses due to a failure to complete or pass attention checks, yielding a final sample of 268 (mean age 39.15 years, $SD = 12.38$). The sample encompassed a broad range of ages, from 20 to 72 years old. There were 139 women, 128 men, and one person who reported being "Agender / Gender non-conforming / Androgynous." Consistent with other MTurk research (Buhrmester et al., 2011), the composition of the sample was primarily European American (85.8%), followed by African (5.6%), Hispanic/Latino (4.9%), East Asian (4.5%), Native American/Alaskan Native (2.2%), South Asian (1.1%), Middle Eastern (0.7%), Pacific Islander (0.4%), and other (0.4%), and close to an even split between men and women. Although not representative of the general population (Berinsky et al., 2012), MTurk samples tend to be more diverse than convenience samples, such as university populations (Buhrmester et al., 2011).

Only "Turkers" ages 18 and older within the United States who had more than one thousand HITS and a 97% or higher approval rating were permitted to participate, (i.e., participants had to have completed one thousand or more tasks and successfully completed at least 97% of them to the specifications of the entities who posted the HITS to qualify for the study). These criteria have been shown to increase the quality of data obtained from MTurk (Buhrmester et al., 2011). Assuming a small main effect and a small interaction effect (Cohen's $f = .18$), $\alpha = .05$, a minimum sample size of 245 was

required to achieve .80 power; as such, the study was well-powered to address the research questions.

Participants were offered 50 cents as incentive for completing the study. After clicking on the HIT, participants were directed to the study materials on Qualtrics, where they provided their consent to participate. After completion of the survey, participants were thanked for participation. A code was given to them to redeem their reward on MTurk. Additionally, a link to the National Institute of Mental Health's "Help for Mental Illnesses" page was provided in case participants questioned their own mental health after the study or simply wanted to learn more about schizophrenia and other mental illnesses. The entire procedure took 5 to 10 minutes.

Design and Measures

Each participant began the study by reading a vignette about John, a man with schizophrenia. They received the same description of his symptoms, including disorganized behavior (e.g., muttering to himself), paranoia, and hearing voices. These are all key symptoms of the most updated diagnostic criteria recognized in the *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition* (American Psychiatric Association, 2013). Participants were randomly assigned to receive either a genetic ("In John's case, his condition is predominantly caused by genetics; that is to say, John's DNA is largely responsible for his condition.") or nongenetic, that is, environmental ("In John's case, his condition is predominantly caused by environmental factors; that is to say, John's environment is largely responsible for his condition.") causal attribution. Participants were also randomly assigned to receive treatability information ("People with schizophrenia are able to achieve significant improvement in their symptoms with therapy and medication. Research shows that these methods are effective in helping people like John recover.") or no such information. To help ensure that participants paid attention to these manipulations, participants were not allowed to progress past the vignettes until 25 seconds had elapsed. The structure of this vignette manipulation is analogous to the methods used by Lebowitz and Ahn (2012), which increased the comparability of their results to the results from this study.¹

Social Distance

Participants first completed Link et al.'s (1999) Social Distance Scale, where participants were asked

¹Please contact the first author for supplemental information regarding the methods, including the vignettes used and the full measures.

from 1 (*definitely*) to 4 (*definitely not*) how willing they would be to engage in various social behaviors with John, such as working closely with him, having him move next door, becoming friends, etc. This scale has been used to measure social distance in multiple studies (see, e.g., Link et al., 1999; Pescosolido et al., 2010). The items were averaged to create a single social distance score; internal consistency was high in our sample ($\alpha = .93$).

Perceived Dangerousness

Perceived dangerousness was assessed by asking participants how likely they believed John to be capable of doing something violent toward other people from 1 (*definitely*) to 4 (*definitely not*; Link et al., 1999). This item was modeled from the question in the General Social Survey that inquires about perceptions of likelihood that individuals with mental health issues will cause harm to others. The General Social Survey is a representative sample of adults in the United States, and some of the key studies documenting stereotypes that individuals with mental health issues are dangerous have utilized this survey (Link et al., 1999; Pescosolido et al., 2010); as such, we chose the same item for the current study. This item was reverse-scored for all analyses so that, consistent with the other dependent variables, lower scores would indicate less stigma.

Prognostic Pessimism

Prognostic pessimism was measured by asking participants to rate how permanent they believed John's symptoms would be from 1 (*not at all*) to 5 (*extremely so*). This item was modeled from the question assessing perceptions of the likelihood that mental health symptoms will be permanent outlined in Lebowitz and Ahn (2015).

In the current study, the three dependent variable measures were modestly correlated with each other ($\alpha = .59$), consistent with research demonstrating relationships between different stigma facets.

Attention and Manipulation Checks

Attention checks were used to identify participants who might have engaged in random responding or failed to pay attention to the vignettes. Midway through the survey, each participant was given multiple-choice questions asking which mental illness the person in the vignette was experiencing (the correct answer was "schizophrenia" across all conditions) and other details about the vignette. Additionally, participants were asked to mark

“45” on a sliding scale of 0 to 50. Participants were also asked an open-ended question to test their attentiveness and understanding of English. These measures helped identify participants who do not care about the quality of their responses, or “spammers,” people who may not comprehend English, or programs meant to fill out surveys automatically, also called “bots” (Mason & Suri, 2012). Researchers such as Berinsky et al. (2013) suggested that multiple attention check items are better at testing for comprehension and attentiveness than singular screeners.

For a manipulation check, participants endorsed how much they believed genetics and environmental factors influenced John’s condition from 1 (*not at all*) to 5 (*extremely so*). If the manipulation was successful, participants in the genetic condition should have endorsed genetics significantly more, whereas participants in the environmental condition should have endorsed environmental factors significantly more. The treatability manipulation was checked by asking, “On a scale of 1 (*very ineffective*) to 5 (*very effective*), to what extent does research show that medication and/or therapy are effective for treating John’s condition?” Participants who received treatability information should have endorsed therapy and medication as significantly more effective than those who did not receive any treatability information.

Demographics

Finally, participants were asked several demographic questions. They were asked to report their age, ethnicity, gender, marital status, income, self-perceived economic class, and level of education attained. Additionally, participants were asked if a close friend or family member had been diagnosed with a serious mental health condition.

Data Analyses

The primary aim of this study was to learn whether treatability information reduced the negative attitudes associated with genetic explanations for schizophrenia. First, to verify the manipulation checks, *t* tests were conducted for both causal attribution and treatability. These were put in place to help ensure that the manipulations created group-level differences. A separate factorial analysis of variance was then conducted for each dependent variable (social distance, prognostic pessimism, and perceived dangerousness) to test the main effects of the manipulations and the interaction effect.

Results

Two-hundred sixty-eight individuals were randomly assigned to the four experimental conditions and provided responses for the measures of the dependent variables. For a complete summary of the demographic information collected on the participants, please see Table 1. Demographic characteristics for each of the four conditions were compared through one-way analyses of variance and Chi-square analyses; all p s > .05, suggesting that randomization was successful.

Participants who received a genetic causal attribution ($M = 4.73$, $SD = 0.57$) endorsed genetics as a cause of John’s schizophrenia significantly more, $t(266) = 19.58$, $p < .001$, $d = 2.37$, than participants in the environmental condition ($M = 2.50$; $SD = 1.20$). Participants who received treatability information endorsed therapy and medication as effective treatments for schizophrenia ($M = 4.20$; $SD = 0.76$) significantly more, $t(266) = 7.66$, $p < .001$, $d = .93$, than those who did not receive such information ($M = 3.41$; $SD = 0.92$). These results suggest that the manipulations were successful in creating distinct groups by altering people’s beliefs about the causal attribution and treatability of John’s schizophrenia.

For each dependent variable, a separate 2 (causal attribution) x 2 (treatability information) factorial analysis of variance was conducted to test the main effect of condition, namely attribution and treatability information, as well as the interaction between these variables. Please see Table 2 for cell means.

Social Distance

There was no main effect of attribution on social distance, $F(1, 264) = 0.32$, $p = .57$, $\eta_p^2 = .001$. There was a significant main effect of treatability information on social distance, $F(1, 264) = 5.38$, $p = .02$, $\eta_p^2 = .02$. Participants who received treatability information desired less social distance from John than those who received no such information. The interaction between attribution and treatability information was not significant for social distance, $F(1, 264) = 0.57$, $p = .45$, $\eta_p^2 = .002$ (see Table 2).

Dangerousness

The main effect of attribution on dangerousness was not significant, $F(1, 264) = 2.98$, $p = .08$, $\eta_p^2 = .01$. There was no main effect of treatability information on dangerousness, $F(1, 264) = 0.90$, $p = .34$, $\eta_p^2 = .003$. There was no significant interaction effect between attribution and treatability information for perceived dangerousness, $F(1, 264) = 1.93$, $p = .17$, $\eta_p^2 = .007$ (see Table 2).

Prognostic Pessimism

A main effect was found for attribution on prognostic pessimism, $F(1, 264) = 21.01, p < .01, \eta_p^2 = .07$. Participants in the genetic condition were more likely to believe that John's condition was permanent than participants in the environmental condition. The main effect of treatability information on prognostic pessimism was not significant, $F(1, 264) = 3.60, p = .06, \eta_p^2 = .01$. The main effect of attribution was qualified by a significant interaction between attribution and treatability information for prognostic pessimism, $F(1, 264) = 4.11, p = .04, \eta_p^2 = .01$. Analyses of simple effects revealed that the presence of treatability information negated the effect of genetic attributions increasing prognostic pessimism, resulting in no significant differences between the environmental and genetic conditions when treatability information was present (see Figure 1). In other words, the prognostic pessimism scores were not affected by the type of attribution if the information was paired with treatability information; however, when no treatability information was given, prognostic pessimism scores were significantly higher (indicating greater pessimism about recovery), $F(1, 132) = 24.25, p < .001, \eta_p^2 = .15$, when genetic attributions were given.

Discussion

In the current study, we investigated the impact of attributions of schizophrenia's etiology (genetic versus environment) and treatability information on three important stigma variables: desire for social distance, perceived dangerousness, and prognostic pessimism. Hypothesis 1 stated that there would be a main effect of attribution on all dependent variables. This was partially supported by a significant effect of attribution on prognostic pessimism. Hypothesis 2 stated that there would be no significant effect of treatment on the dependent variables. This hypothesis was only partially supported, as there was a significant effect of treatability on social distance. Hypothesis 3 stated that there would be an interaction between attribution and treatability on the dependent variables. This hypothesis was partially supported by a significant interaction between attribution and treatability on prognostic pessimism. Providing treatability information removed the negative consequence of increasing prognostic pessimism that stemmed from a genetic attribution of schizophrenia.

The analyses of the main effect of attribution type were generally consistent with the literature demonstrating that genetic attributions

of mental illness can have adverse effects on stigma. Consistent with the Mixed Blessings Model (Haslam & Kvaale's, 2015), when given genetic explanations, participants were more likely to view John's disorder

TABLE 1

Descriptive Statistics of Demographic Characteristics of Participants

Age	<i>M</i>	<i>SD</i>
	39.15	12.38
Gender identity	<i>n</i>	%
Female	139	51.9
Male	128	47.8
Agender / Gender nonconforming / Androgynous	1	0.4
Ethnicity	<i>n</i>	%
African	15	5.6
European American	230	85.8
East Asian	12	4.5
Hispanic / Latino	13	4.9
Middle Eastern	2	0.7
Native American / Alaskan Native	6	2.2
Pacific Islander	1	0.4
South Asian	3	1.1
Other	1	0.4
Marital status	<i>n</i>	%
Single	102	38.1
Cohabiting	32	11.9
Married	133	49.6
Separated	1	0.4
Household income	<i>n</i>	%
Less than \$5,000	5	1.9
\$5,000–\$11,999	13	4.9
\$12,000–\$15,999	9	3.4
\$16,000–\$24,999	22	8.2
\$25,000–\$34,999	33	12.3
\$35,000–\$49,999	44	16.4
\$50,000–\$74,999	66	24.6
\$75,000–\$99,999	37	13.8
\$100,000 and greater	37	13.8
Missing	2	0.7
Socioeconomic class	<i>n</i>	%
Working class	112	41.8
Middle class	152	56.7
Upper class	4	1.5

Note. For ethnicity above, participants could report more than one category. Table continued on the next page.

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

TABLE 1, CONTINUED.

Descriptive Statistics of Demographic Characteristics of Participants

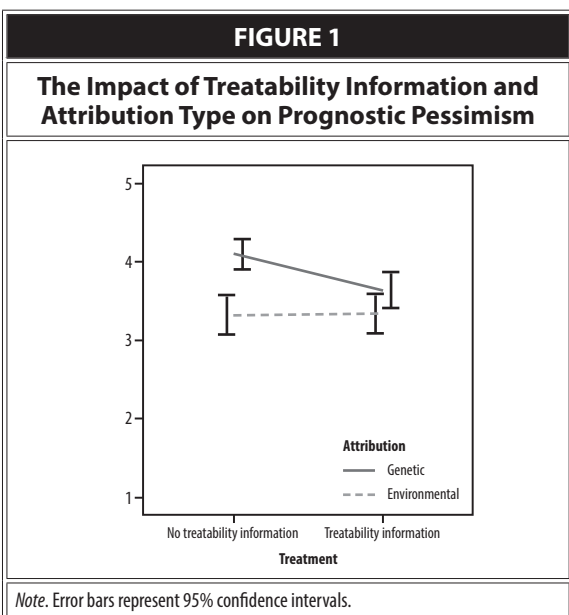
Degree Earned	<i>n</i>	%
High school diploma or GED	72	26.9
Associate's degree or junior college	48	17.9
Bachelor's degree	116	43.3
Master's degree	23	8.6
Doctorate	3	1.1
Professional degree	4	1.5
Other	2	0.7
Proximity to Mental Illness		
Close friend or family	112	41.8
Neither	156	58.2

TABLE 2

Means and Standard Deviations of Dependent Variables, Across Experimental Conditions and the Full Sample

	Full Sample (<i>N</i> = 268)	Genetic, Attribution, Treatability Information (<i>n</i> = 67)	Genetic Attribution, No Treatability Information (<i>n</i> = 70)	Environmental Attribution, Treatability Information (<i>n</i> = 67)	Environmental Attribution, No Treatability Information (<i>n</i> = 64)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Perceived dangerousness	2.57 (0.72)	2.54 (0.70)	2.74 (0.76)	2.51 (0.73)	2.47 (0.69)
Desire for social distance	2.77 (0.76)	2.65 (0.78)	2.94 (0.73)	2.67 (0.75)	2.82 (0.76)
Prognostic pessimism	3.61 (1.00)	3.64 (0.95)	4.10 (0.82)	3.34 (1.05)	3.33 (0.99)

Note. Desire for social distance and perceived dangerousness ranged from 1 to 4 and prognostic pessimism ranged from 1 to 5, with lower scores indicating less stigmatizing attitudes (dangerousness reverse scored).



as permanent. However, we did not replicate the results of prior studies showing that genetic explanations increase desire for social distance (Angermeyer et al., 2015; Lebowitz & Ahn, 2012; Schomerus et al., 2014). With respect to the main effect of treatability information, unlike Lebowitz and Ahn (2012), the results indicated a significant effect on social distance. Although Lebowitz and Ahn (2012) did not find this relationship, other more recent research by McGinty et al. (2015) suggested that people do view those with mental illnesses more positively when their symptoms are successfully treated.

With respect to the interaction between social distance and treatability information, results were inconsistent with Lebowitz and Ahn (2012), as there was not a significant interaction for social distance. However, there was an interaction between attribution and treatability for prognostic pessimism such that the presence of treatability information cancelled out the increase in prognostic pessimism seen in the genetic/no treatability condition. Notably, Lebowitz and Ahn (2012) did not explicitly measure prognostic pessimism, but postulated that it would be impacted by the interaction between treatability information and causal attribution.

There are several reasons why some of these results might not have been as expected. With regard to the lack of significant effects on perceived dangerousness, it could be that people's judgments of danger may be more durable than other social perceptions, making it more difficult to sway their perceptions of dangerousness with manipulations of causal attribution. Additionally, the measures of prognostic pessimism and perceived dangerousness in this study were limited to a single item each, increasing risk of measurement error. More robust measures should be developed for these constructs to strengthen research conducted on them in the future. For instance, measures of prognostic pessimism should disentangle the perception of symptom permanence from the perceptions of long-term need for treatment and enduring social and occupational impact. With respect to the lack of interaction between treatability information and attribution in impacting social distance, it could be that the vignettes in the current study affected attitudes in a slightly different way than Lebowitz and Ahn's (2012). We characterized the vignette target as a young male college student, which could cause discrepancies in people's attitudes between our vignette target and Lebowitz and Ahn's

(2012) if they characterized theirs differently or omitted such information. These inconsistencies may account for lack of similar findings for social distance.

The presence of an interaction between attribution and treatability information in impacting prognostic pessimism indicates that an important adverse consequence of genetic attributions may be negated when paired with information about treatment. This highlights that how people teach and talk about mental illnesses may have significant effects on attitudes toward those affected by mental illnesses. Based on these results, it seems that learning how to constructively explain mental illnesses to the public is a very important struggle that can alter how people living with mental illness are treated. This is especially true in the case of schizophrenia, which is heavily stigmatized (Dickerson et al., 2002). Although the exact genetic mechanisms that contribute to schizophrenia are not thoroughly understood, large amounts of research are being focused on this topic, which will lead to further understanding of this illness in terms of genetics (U.S. National Library of Medicine, 2018). As genetic explanations proliferate, it is extremely important to understand how they may negatively impact people living with schizophrenia. Based on these results and the conclusions of Lebowitz and Ahn (2012), the emphasis on treatability and subsequent reduction of prognostic pessimism can help combat stigma. In other words, when doctors, mental health professionals, family members, etc. provide genetic explanations for schizophrenia, they should also include information about how the condition can be treated to prevent the genetic attribution from increasing prognostic pessimism. When surrounded by people with more optimistic outlooks on their condition, people with schizophrenia may feel more supported and motivated to adhere to treatment plans to keep their symptoms under control.

Limitations and Strengths

This study had several limitations. First, we explored only one mental illness: schizophrenia. Although this condition was specifically selected due to its severity, it prevents the generalization of these findings to mental illnesses as a whole. Future research should seek to replicate studies like this with a variety of mental health conditions to see if there is consistency and/or contrast the differences. It would also be interesting to see if these findings hold true for real-world interactions, instead of

simply people's attitudes toward a hypothetical vignette. For instance, the attitudes of people in the mental health field working with patients who have real-life conditions like schizophrenia could be measured to see if these findings generalize to real-life settings that could affect patient outcomes. Further, although we extended the investigation of Lebowitz and Ahn (2012) by measuring dangerousness and prognostic pessimism, future research should attempt to include additional dependent variables related to mental health stigma. Possible variables might include help-seeking stigma, strength of social support networks, other facets of dangerousness (such as perceived likelihood of harm to self), and for studies of individuals with serious mental health issues, self-stigma. Future research should also examine how manipulations involving different types of treatability information (e.g., medications versus therapies) impact the results. Finally, although we utilized the vignette manipulations of genetic versus environmental to be consistent with past literature, it is important to note that participants might have had varied interpretations of environmental, and future investigations should explore the impact of different environmental explanations (e.g., childhood trauma, social relationships).

This study was also somewhat limited by its sample. Despite the broad range of ages and nearly even numbers of men and women, the sample was still predominantly White with higher educational attainment than the general population. Future researchers should strive to find more ethnically and socioeconomically diverse samples. Nearly half (41.8%) of the sample also reported proximity to serious mental illness, which might have affected their attitudes toward the target of the vignette. Although the number of participants with direct proximity to schizophrenia was likely low, this is something that future researchers should be aware of when conducting similar studies because the pattern of results could vary based on familiarity with mental health stigma (Corrigan & Nieweglowski, 2019). This could be especially important when considering possible samples for future studies because convenience samples of psychology students may have a different level of familiarity with mental illnesses than laypersons.

Additionally, in the current investigation, the statistical analyses did not address more complex models for how social distance, dangerousness, and prognostic pessimism relate to each other. Future researchers could attempt to make the model of

attribution and treatability information on mental health stigma clearer. Lebowitz and Ahn (2012) suggested that attribution affects whether or not a condition is perceived as controllable, and by extension affects beliefs about blame, establishes its perceived permanence, and potentially produces prognostic pessimism. They believed that the prognostic pessimism from biogenetic attributions affects other attitudes such as the desire for social distance, and that the presence of treatability information combats these negative attitudes by challenging prognostic pessimism. The results from the current study do not completely support this explanation. A main effect of treatability information on social distance was present, suggesting that treatability information can directly affect at least some stigmatizing attitudes regardless of attribution, but more research needs to be conducted to parse out the intricacies of how attribution and treatability information affect different stigmatizing attitudes, and how those stigmatizing attitudes may intertwine with each other.

Despite these limitations, the current study also had many strengths. It was a well-controlled experiment that expanded on the current state of the literature. Schizophrenia was selected to improve comparison to Lebowitz and Ahn (2012). The vignette was consistent with common symptoms of schizophrenia as described by the DSM-V. This study also improved upon previous studies by explicitly measuring prognostic pessimism and perceived dangerousness. Additionally, these results were strengthened by verified manipulation checks and a sample more diverse than the university samples typically used for this type of research.

Conclusion

The present study extended the current literature by adding clarity as to whether providing information about ways to treat schizophrenia alongside genetic explanations for the illness can reduce stigmatizing attitudes. The primary results of this study are that condition, genetic or environmental, significantly affects prognostic pessimism, with genetic attributions resulting in high prognostic pessimism. This was qualified by an interaction effect between attribution and treatability information such that the presence of treatability information combatted the increase in prognostic pessimism associated with a genetic attribution for schizophrenia. Future researchers should extend this literature to other mental health conditions using varied samples.

References

- Ahmedani, B. K. (2011). Mental health stigma: Society, individuals, and the profession. *Journal of Social Work Values and Ethics*, 8(2), 4-1-4-16. <https://www.ncbi.nlm.nih.gov/pubmed/2221117>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Angermeyer, M. C., Daubmann, A., Wegscheider, K., Mnich, E., Schomerus, G., & Knesebeck, O. (2015). The relationship between biogenetic attributions and desire for social distance from persons with schizophrenia and depression revisited. *Epidemiology and Psychiatric Sciences*, 24(4), 335-341. <https://doi.org/10.1017/S2045796014000262>
- Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Political Analysis*, 20(3), 351-368. <https://doi.org/10.1093/pan/mpr057>
- Berinsky, A. J., Margolis, M. F., & Sances, M. (2013). Separating the shirkers from the workers? Making sure respondents pay attention on self-administered surveys. *American Journal of Political Science*, 58(3), 739-753. <https://doi.org/10.1111/ajps.12081>
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3-5. <https://doi.org/10.1177/1745691610393980>
- Cheung, B. Y., Dar-Nimrod, I., & Gonsalkorale, K. (2014). Am I my genes? Perceived genetic etiology, intrapersonal processes, and health. *Social and Personality Psychology Compass*, 8(11), 626-637. <https://doi.org/10.1111/spc3.12138>
- Corrigan, P. W. (1998). The impact of stigma on severe mental illness. *Cognitive and Behavioral Practice*, 5(2), 201-222. [https://doi.org/10.1016/S1077-7229\(98\)80006-0](https://doi.org/10.1016/S1077-7229(98)80006-0)
- Corrigan, P. W. (2000). Mental health stigma as social attribution: Implications for research methods and attitude change. *Clinical Psychology: Science and Practice*, 7(1), 48-67. <https://doi.org/10.1093/clipsy.7i.1.48>
- Corrigan, P. W., & Niewegowski, K. (2019). How does familiarity impact the stigma of mental illness? *Clinical Psychology Review*, 70, 40-50. <https://doi.org/10.1016/j.cpr.2019.02.001>
- Dar-Nimrod, I., & Heine, S. J. (2011). Genetic essentialism: On the deceptive determinism of DNA. *Psychology Bulletin*, 137(5), 800-818. <https://dx.doi.org/10.1037/a0021860>
- Desai, P. R., Lawson, K. A., Barner, J. C., & Rascati, K. L. (2013). Estimating the direct and indirect costs for community-dwelling patients with schizophrenia. *Journal of Pharmaceutical Health Services Research*, 4(4), 187-194. <https://doi.org/10.1111/jphs.12027/epdf>
- Dickerson, F. B., Sommerville, J., Origoni, A. E., Ringel, N. B., & Parente, F. (2002). Experiences of stigma among outpatients with schizophrenia. *Schizophrenia Bulletin*, 28(1), 143-155. <https://doi.org/10.1093/oxfordjournals.schbul.a006917>
- Gangi, C. E., Yuen, E. K., Levine, H., & McNally, E. (2016). Hide or seek? The effect of causal and treatability stigma information on stigma and willingness to seek psychological help. *Journal of Social and Clinical Psychology*, 35(6), 510-524. <https://doi.org/10.1521/jscp.2016.35.6.510>
- Haslam, N. (2011). Genetic essentialism, neuroessentialism, and stigma: Commentary on Dar-Nimrod and Heine (2011). *Psychological Bulletin*, 137(5), 819-824. <https://doi.org/10.1037/a0022386>
- Haslam, N., & Kvaale, E. P. (2015). Biogenetic explanations of mental disorder: The mixed-blessings model. *Current Directories in Psychological Science*, 24(5), 399-404. <https://doi.org/10.1177/0963721415588082>
- Kvaale, E. P., Haslam, N., Gottdiener, W. H. (2013). The 'side effects' of medicalization: A meta-analytic review of how biogenetic explanations affect stigma. *Clinical Psychology Review*, 33(6), 782-794. <https://doi.org/10.1016/j.cpr.2013.06.002>
- Lebowitz, M. S., & Ahn, W. K. (2015). Emphasizing malleability in the biology of depression: Durable effects on perceived agency and prognostic pessimism. *Behaviour Research and Therapy*, 71, 125-130. <https://dx.doi.org/10.1016%2Fj.brat.2015.06.005>
- Lebowitz, M. S., & Ahn, W. (2012). Combining biomedical accounts of mental disorders with treatability information to reduce mental illness stigma. *Psychiatric Services*, 63(5), 496-499. <https://doi.org/10.1176/appi.ps.201100265>
- Lee, A. A., Laurent, S. M., Wykes, T. L., Kitchen Andren, K. A., Bourassa, K. A., & McKibbin, C. L. (2014). Genetic attributions and mental illness diagnosis: Effects on perceptions of danger, social distance, and real helping decisions. *Social Psychiatry and Psychiatric Epidemiology*, 49(5), 781-789. <https://doi.org/10.1007/s00127-013-0764-1>

- Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, 27(1), 363–385. <https://doi.org/10.1146/annurev.soc.27.1.363>
- Link, B. G., Phelan, J. C., Bresnahan, M., Stueve, A., & Pescosolido, B. A. (1999). Public conceptions of mental illness, Labels, causes, dangerousness, and social distance. *American Journal of Public Health*, 89(9), 1328–1333. <https://doi.org/10.2105/ajph.89.9.1328>
- Mason, W., & Suri, S. (2012). Conducting behavioral research on Amazon's Mechanical Turk. *Behavior Research Methods*, 44(1), 1–23. <https://doi.org/10.3758/s13428-011-0124-6>
- McGinty, E. E., Goldman, H. H., Pescosolido, B., & Barry, C. L. (2015). Portraying mental illness and drug addiction as treatable health conditions: Effects of a randomized experiment on stigma and discrimination. *Social Science & Medicine*, 126, 73–85. <https://doi.org/10.1016/j.socscimed.2014.12.010>
- National Institute of Mental Health. (February, 2016). *Schizophrenia*. Retrieved from <https://www.nimh.nih.gov/health/topics/schizophrenia/index.shtml>
- Pescosolido, B. A., Martin, J. K., Long, J. S., Medina, T. R., Phelan, J. C., & Link, B. G. (2010). 'A disease like any other'? A decade of change in public reactions to schizophrenia, depression, and alcohol dependence. *American Journal of Psychiatry*, 167(11), 1321–1330. <https://dx.doi.org/10.1176%2Fappi.ajp.2010.09121743>
- Schomerus, G., Matschinger, H., & Angermeyer, M. C. (2014). Causal beliefs of the public and social acceptance of persons with mental illness: A comparative analysis of schizophrenia, depression and alcohol dependence. *Psychological Medicine*, 44(2), 303–314. <https://doi.org/10.1017/S003329171300072X>
- U.S. National Library of Medicine. (April 11, 2018). *Schizophrenia*. Retrieved from <https://ghr.nlm.nih.gov/condition/schizophrenia#inheritance>
- Vos, T., Abajobir, A. A., Abate, K. H., Abbafati, C., Abbas, K. M., Abd-Allah, F., Abdulkader, R. S., Abdulle, A. M., Abebo, T. A., Abera, S. F., Aboyans, V., Abu-Raddad, L. J., Ackerman, I. n., Adamu, A. A., Adetokunboh, Afarideh, M., Afshin, A., Agarwal, S. K., Aggarwal, R., . . . Murray, C. J. L. (2017). Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: A systematic analysis for the Global Burden of Disease Study 2016. *Lancet (London, England)*, 390(10100), 1211–1259. [https://doi.org/10.1016/S0140-6736\(17\)32154-2](https://doi.org/10.1016/S0140-6736(17)32154-2)

Author Note. This research was funded by the Ron and Laura Strain Honors College.

Special thanks to *Psi Chi Journal* editors and reviewers for their support.

Correspondence concerning this research can be directed to Noah Hinkley, Department of Psychological Sciences, University of Indianapolis, Indianapolis, IN, 46227. Email: hinkleyn@uindy.edu



BALL STATE UNIVERSITY

Teachers College
Department of Educational
Psychology

Find your **career.**

Eight graduate degree programs and four certificates in **Educational Psychology**

PhD in Educational Psychology

Engage in the science of learning. Prepare for a career where you can use your knowledge of human learning and development to help shape the school environment and public policy. Core program areas include learning, motivation, and research design.

MS or MA in Educational Psychology*

Broaden your ability to apply psychological principles to a variety of professional contexts or prepare for your future doctorate in social science.

MS in Quantitative Psychology*

Do you like numbers, statistics, and social science? Prepare for a career in research, assessment, and data analysis. Develop proficiency in advanced statistical techniques, measurement theory, and data analytics.

PhD in School Psychology (five-year program)

Prepare for a career as a licensed psychologist. Gain competencies in health service psychology to work in schools, private practice, or hospital settings. Accredited by the American Psychological Association (APA)** and approved by the National Association of School Psychologists (NASP). Scientist-practitioner model with advocacy elements. Specializations available.

MA/EdS in School Psychology (three-year program)

Be immersed in community engaged, real-world field experiences and intervention opportunities in our scientist-practitioner-advocate program. Leads to licensure as a school psychologist. Approved by NASP and the National Council for Accreditation of Teacher Education (NCATE).

MA in School Counseling (two-year program)

Be a leader and advocate for educational equity for all students in PK–12 schools. Leads to licensure as a school counselor. The program adheres to the



Council for Accreditation of Counseling and Related Educational Programs (CACREP) standards and is nationally recognized by The Education Trust as a Transforming School Counseling program.

Certificates

High Ability/Gifted Studies,* Human Development and Learning,* Identity and Leadership Development for Counselors,* Neuropsychology*

Graduate assistantships and tuition waivers are available.

bsu.edu/edpsy

*Online programs are available.

**Questions related to the PhD in school psychology's accreditation status should be directed to the Office of Program Consultation and Accreditation, American Psychological Association, 750 First St. NE, Washington, D.C. 20002; (202) 336-5979; apaaccred@apa.org; or apa.org/ed/accreditation.

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Ball State University practices equal opportunity in education and employment and is strongly and actively committed to diversity within its community. Ball State wants its programs and services to be accessible to all people. For information about access and accommodations, please call the Office of Disability Services at 765-285-5293; go through Relay Indiana for deaf or hard-of-hearing individuals (relayindiana.com or 877-446-8772); or visit bsu.edu/disabilityservices. 582418-18 mc



Alliant International University
California School
of Professional Psychology

Your Career in Psychology Starts Here

Choose your path:

- Clinical Psychologists • Marriage and Family Therapists • Clinical Counselors
- Organizational Psychologists • Organizational Behavior Psychologists • Organizational Development Psychologists • Psychopharmacologists

psichi.alliant.edu

WINTER 2020

PSI CHI
JOURNAL OF
PSYCHOLOGICAL
RESEARCH

Publish Your Research in *Psi Chi Journal*

Undergraduate, graduate, and faculty submissions are welcome year round. Only one author (either first author or coauthor) is required to be a Psi Chi member. All submissions are free. Reasons to submit include

- a unique, doctoral-level, peer-review process
- indexing in PsycINFO, EBSCO, and Crossref databases
- free access of all articles at psichi.org
- our efficient online submissions portal

View Submission Guidelines and submit your research at www.psichi.org/?page=JN_Submissions

Become a Journal Reviewer

Doctoral-level faculty in psychology and related fields who are passionate about educating others on conducting and reporting quality empirical research are invited become reviewers for *Psi Chi Journal*. Our editorial team is uniquely dedicated to mentorship and promoting professional development of our authors—Please join us!

To become a reviewer, visit www.psichi.org/page/JN_BecomeARewriter

Resources for Student Research

Looking for solid examples of student manuscripts and educational editorials about conducting psychological research? Download as many free articles to share in your classrooms as you would like.

Search past issues, or articles by subject area or author at www.psichi.org/journal_past

Add Our Journal to Your Library

Ask your librarian to store *Psi Chi Journal* issues in a database at your local institution. Librarians may also e-mail to request notifications when new issues are released.

Contact PsiChiJournal@psichi.org for more information.



Register an account:
<http://pcj.msubmit.net/cgi-bin/main.plex>

