ABOUT PSI CHI
Psi Chi is the International Honor Society in Psychology, founded in 1929 for the purposes of encouraging, stimulating, and maintaining excellence in scholarship, and advancing the science of psychology. Membership is open to graduate and undergraduate men and women who are making the study of psychology one of their major interests and who meet the 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 1,100 senior colleges and universities in the U.S., Canada, and Ireland. 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 serves two major goals—one immediate and visibly rewarding to the individual member, the other slower and more difficult to accomplish, but offering greater rewards in the long run. The first of these is the Society’s obligation to provide academic recognition to its inductees by the mere fact of membership. The second goal is the obligation of each of the Society’s local chapters to nurture the spark of that accomplishment by offering a climate congenial to its creative development. For example, the chapters make active attempts to nourish and stimulate professional growth through programs designed to augment and enhance the regular curriculum and to provide practical experience and fellowship through affiliation with the chapter. In addition, the organization provides programs to help achieve these goals including regional and Society conventions, research award and grant competitions, certificate recognition programs, chapter awards, and Society service projects.

JOURNAL PURPOSE STATEMENT
The twofold purpose of the *Psi Chi Journal of Undergraduate Research* is to foster and reward the scholarly efforts of undergraduate psychology students as well as to provide them with a valuable learning experience. The articles published in this journal represent primarily the work of undergraduate student(s). Faculty mentors, who deserve recognition, are identified by an asterisk next to their name or on a separate byline.

Because the articles in this journal are primarily the work of undergraduate students, the reader should bear in mind that: (1) the studies are possibly less complex in design, scope, or other information; (2) that the mentor has read and critiqued the manuscript on content, method, and (3) that the planning, execution, and writing of the manuscript represent primarily the work of the undergraduate student.

Instructions for Contributors
The *Psi Chi Journal of Undergraduate Research* encourages undergraduate students to submit manuscripts for consideration. Submissions are accepted for review on an ongoing basis. Although manuscripts are limited to empirical research, they may cover any topical area in the psychological sciences.

1. The primary author of a submitted manuscript must be an undergraduate student who is a member of Psi Chi. Manuscripts from graduate students will be accepted only if the work was completed as an undergraduate student and not more than 6 months has passed since graduation. Additional authors other than the primary author may include non-Psi Chi students as well as the faculty mentor or supervisor. Membership verification information (member ID number) for the primary author must be included.

2. Only original manuscripts (not published or accepted for publication elsewhere) will be accepted.

3. All manuscripts must be prepared according to the *Publication Manual of the American Psychological Association* (6th ed.).

4. What to submit:
   a. A Microsoft® Word electronic copy of the complete manuscript with figures, tables, and charts generated in either Word or Excel. Any scanned images or illustrations must be at least 600 dpi resolution. Make sure that identifying names, affiliations, etc. appear on the title page and nowhere else on the manuscript (i.e., manuscripts should be reasonably free of clues to the identity of the authors). Footnotes that identify the author(s) should appear on a separate page.
   b. An email address so that receipt of your manuscript can be acknowledged.
   c. A sponsoring statement from the faculty mentor who attests:
      (1) that the research adhered to APA ethical standards;
      (2) that the mentor has read and critiqued the manuscript on content, method, APA style, grammar, and overall presentation; and
      (3) that the planning, execution, and writing of the manuscript represent primarily the work of the undergraduate student.

Submit all electronic files to: psichijournal@psichi.org

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When I began my stint as editor of the Psi Chi Journal of Undergraduate Research (PCJUR), I wrote an editorial (Smith, 2009) in which I laid out my philosophy and my reasons for working with PCJUR. I noted that I was supported and encouraged to engage in research as an undergraduate and graduate student. I also noted that I carried this support over to my teaching, and that I believed that students benefitted greatly from engaging in research. In this parting editorial, I want to provide some support for that statement about students benefitting from the research process.

I am not alone in the belief that research experience is important for students. Kierniesky (2005) surveyed 355 small psychology departments about the opportunities students had for research. He found that 95% of the departments reported that they had students who engaged in research—almost equally divided between a free elective and a requirement of the major. The most frequently reported source of ideas for student research was that “Students choose their own ideas to research with help from the faculty member” (p. 86), so students were primarily engaging in original research based on their ideas and interests. Perlman and McCann (2005) conducted a national survey of psychology curricula to assess the opportunities that students had for research. They studied catalogs of 500 colleges and received survey responses from 203 of those schools. They found, on average, that schools offered nearly seven courses with research opportunities for undergraduates. Further, 98% of schools offered at least one such course; 79% required such a course. Thus, research experiences for students are widely available, which indicates that psychology faculty believe in their importance.

There are numerous claims in the literature that students benefit from their research experiences. One of the standard benefits touted for undergraduate research experiences is higher acceptance rates for graduate study (Collins, 2001; Purdy, Reinehr, & Swartz, 1989). Many students are probably aware of this benefit—in fact, it may motivate many of them to pursue research experience. Not surprisingly, students report that undergraduate research improved their general research skills and professional socialization skills (Buddie & Collins, 2011). For example, in the first category, Landrum and Nelsen (2002) found that students believed that they better understood the research process and the ethics of research, as well as developing skills at generating research ideas, searching the literature, engaging in data collection and analysis, and delivering presentations. In the second category, Thiry and Laursen (2009) found that students reported feeling that they had been initiated into the world of a scientist, had experienced academic and professional socialization, and had acquired skills and knowledge necessary for scientists.

However, faculty members know that only a minority of psychology majors go on to graduate school. What about the majority of psychology majors? Can they also benefit from engaging in research? The answer to this question also appears to be yes, based primarily on self-report studies. For example, students and faculty mentors report that students show improvements in thinking analytically and logically, critical thinking, writing, and time management (e.g., Landrum & Nelsen, 2002; Thiry & Laursen, 2009), as well as in problem solving (Seymour, Hunter, Laursen, & Deantoni, 2004). Research shows that students also have positive reactions to their research experiences. Lopatto (2004) surveyed students who had participated...
in research as undergraduates. An overwhelming majority of the students (almost 90%) responded that the research experience had met or surpassed their expectations. Page, Abramson, and Jacobs-Lawson (2004) found even higher endorsement, as 95% of the students they surveyed indicated they had gotten what they wanted out of the undergraduate research program. Perhaps even more positively, over 92% of the students in Lopatto’s study indicated that they would be likely or very likely to pursue another research experience.

Although the findings of these various surveys of undergraduate research experience are all positive, they are self-report surveys and, thus, could suffer from bias on the part of the respondents. Conducting actual experimental research to assess the benefits of research experience would be difficult if not impossible. Bauer and Bennett (2003) conducted a study that, although based on self-reports, allowed for a comparison between groups. They surveyed 418 graduates of the Undergraduate Research Program (URP) at the University of Delaware (UD) and 355 alumni who had no research experience. The alumni responded to a 4-page survey about their undergraduate experiences. One question concerned skills and abilities that the alumni believed were enhanced by their undergraduate experiences. Alumni who had gone through the URP experience rated themselves significantly higher on speaking effectively, acquiring information on their own, acting as a leader, understanding scientific findings, carrying out research, analyzing literature critically, possessing clear career goals, and developing intellectual curiosity when compared to alumni without research experience. When Bauer and Bennett conducted a factor analysis of the 32 skill items, they found four groupings of skill factors: science/math/logic/problem solving, literature/language/mastery of contexts, personal initiative/communication, and personal/social skills. The alumni with research experience scored higher than the alumni without research experience on all of the factors except personal/social skills. Also, 80% of the URP alumni reported attending graduate school compared to only 59% of the alumni without research experience. Finally, the URP alumni reported higher overall satisfaction with their undergraduate experience than the alumni without research experience.

Although Bauer and Bennett (2003) also used student self-reports, they were able to make comparisons between students with and without research experience. All comparisons that were significant favored the students who gained research experience as undergraduates.

Although I doubt that readers of this journal need much convincing, I have made a brief case as to why research is important for undergraduate students. Faculty believe that many benefits accrue, which is reflected in the widespread offering and requirement of research courses in the psychology curriculum. Both student and faculty mentors report that students benefit in many ways by engaging in research, such as increasing critical thinking skills. Finally, a direct comparison study (Bauer & Bennett, 2003) has shown that students who engaged in research reported several significantly higher outcomes of their undergraduate experience than students who did not engage in research projects. For all of these reasons, Psi Chi is providing this outlet for students to showcase their research efforts. I encourage you to take full advantage of any research opportunities that your school may offer!

References


Guest Editorial

Psi Chi Journal Now Serves All Psi Chi Members

Melanie M. Domenech Rodríguez, Incoming Editor
Utah State University

The Psi Chi Journal of Undergraduate Research has undergone an exciting transformation into the Psi Chi Journal of Psychological Research, a peer-reviewed, indexed journal, that now accepts manuscripts from all Psi Chi members. This change provides an excellent opportunity to review the evolution of the Journal and submission criteria as well as the twists and turns that the life of a submitted manuscript takes potential authors through once manuscripts are entrusted to the Psi Chi Journal team.

History of the Journal

Volume 1, issues 1 and 2 of the Psi Chi Journal of Undergraduate Research were published as a joint issue with seven empirical articles and an inaugural editorial by Dr. Stephen F. Davis. In an enthusiastic beginning, Davis (1996) wrote, “The twofold purpose of this journal is to foster and reward the scholarly research efforts of undergraduate psychology students and to provide them with a valuable learning experience” (n.p.). In the editorial, Davis also listed the first 20 reviewers for the journal, a veritable Who’s Who of Psi Chi, including such names as Elizabeth Yost Hammer and R. Eric Landrum. Since then, 15 volumes have been published. Each volume since the first has included four issues per year, with five to six articles per issue, amounting to more than 300 published articles authored by undergraduate students.

We take pride in this level of scholarly productivity among our undergraduate students and selfless mentoring by our dedicated faculty. Psi Chi Journal’s intellectual integrity has been safeguarded by six editors: Drs. Davis (1995–2001), Warren H. Jones (2001–07), Christopher Koch (2007–09), Martha S. Zlokovich (2009–10), and Randolph A. Smith (2010–11). The mentoring of authors has been in the capable hands of countless reviewers who have shared their time and talents. Notably, some of the scholars in that original group continue to serve as active reviewers of the journal today.

Changes to the Journal

The Psi Chi Journal of Psychological Research builds on the strengths of its predecessor and emerges as an international, fully reviewed, quarterly journal dedicated to the publication of scholarly research authored by members of Psi Chi. In keeping with the tradition of nurturing our members toward scholarly dissemination, the journal will continue to provide supportive feedback to authors. The journal will feature work from any field of specialization within psychology and welcomes a broad range of methodologies.

In keeping with our additional tradition of showcasing substantive contributions that stand to further the science of psychology, manuscripts must be original and empirical (see Domenech Rodríguez, 2011). This stipulation means that work should be largely theoretically driven, include research questions or hypotheses, and apply systematic methods and observations to arrive at conclusions regarding the questions of interest. Manuscripts are also peer reviewed (see Domenech Rodríguez, 2011). As such, each manuscript is reviewed by content and/or methodological experts. For example, a manuscript documenting a qualitative exploration of adolescent identity in incarcerated youths may be reviewed by a faculty expert in adolescent development, a faculty expert in qualitative methods, and another faculty with expertise in incarcerated populations.

One major change in the submissions is that now all Psi Chi members can submit their work as first authors. Undergraduate students who have graduated are no longer limited by the 6-month postgraduation deadline. Graduate students and
faculty now can submit as first authors as well. Faculty authors must have a student coauthor. Additionally, reviewers are now prompted in their evaluation forms to take into account the first author’s developmental level so that a first author who is an undergraduate student will be evaluated according to the level of work expected of an undergraduate student. Furthermore, undergraduate authors will continue to receive detailed, comprehensive feedback on their manuscripts as well as narrative explanations. Graduate and faculty authors will receive mostly narrative feedback.

The Life of a Manuscript
A Psi Chi Journal manuscript comes in through our submission portal, which can be found by going to www.psichi.org and following the links to the Psi Chi Journal. Once a manuscript is received, the Editor and Managing Editor work together to ensure the basic criteria are met (i.e., author is a Psi Chi member, manuscript is empirical). The Editor then carefully selects three reviewers for each submission. The review process lasts approximately 10–12 weeks, but may take longer during holidays to accommodate reviewers.

The review process is complete when three peer reviewers have provided feedback to the Editor, who subsequently reviews the paper as well and integrates all reviewers’ comments. The Action Editor then integrates the feedback into a decision letter, notifying authors of one of the following decisions: (a) the manuscript is accepted pending minor revisions, (b) the author is invited to revise and resubmit the manuscript, or (c) the manuscript is rejected. Authors whose work has been accepted pending minor revisions or who have been asked to revise and resubmit their manuscript have approximately four weeks to complete their revisions and resubmit the manuscript. The final manuscript is then sent to the Editorial Assistant for a final review of APA style and references. Once cleared, it goes into production under the capable leadership of our Managing Editor. Accepted manuscripts are typically published in the order in which they finish the full process of review and revisions. As the final step, authors wait for the printed journal to arrive via snail mail!

Expanding Psi Chi Journal’s Potential
Building on a rich history of promoting excellent scholarship among undergraduate students, the Psi Chi Journal of Psychological Research embraces change and opens new opportunities for all members to become published authors. This shift will greatly benefit authors and readers alike, increasing submissions, the range of research published, and the likelihood of being indexed in PsycINFO and other leading indexing databases (see Domenech Rodríguez, 2011). Indexing will increase our visibility as an academic journal and will extend our reach so that the work of our authors can be more broadly disseminated.

References

Rape and sexual victimization are prevalent among college women (Fisher, Cullen, & Turner, 2000; Harned, 2000; Koss, Gidycz, & Wisniewski, 1987). Body-related disturbances, including body shame, are also common in the female student college population (Harned, 2000; McKinley, 1999; McKinley & Hyde, 1996; Tylka & Sabik, 2010). For example, researchers have found higher levels of body shame in female undergraduates than in male undergraduates and middle-aged mothers (McKinley, 1998, 1999). Researchers conceptualize body shame as feeling negatively about oneself when one’s body does not conform to a set of internalized cultural standards for the idealistic female body (McKinley & Hyde, 1996). Researchers have examined body shame in the context of childhood sexual abuse, as well as its link to adulthood abuse in noncollege populations (Andrews, 1995, 1997; Andrews & Hunter, 1997; Vidal & Petrak, 2007). Using female undergraduate samples, other researchers have reported that sexual victimization is associated with various negative outcomes, including lowered self-esteem, depression, and disordered eating (Harned, 2000; Naville, Spanierman, Heppner, & Clark, 2004; Sable, Danis, Mauzy & Gallagher, 2006). However, the link between body shame and victimization has been neglected in the undergraduate population. Thus, the purpose of the current study was to examine the relation between body shame and sexual victimization, including the role of recency and frequency in a sample of college women.

Researchers have suggested that negative body-related feelings and self-evaluations may be a risk factor for sexual victimization, given that one’s body is violated if sexually victimized (Harned, 2000; Oppenheimer, Howells, Palmer, & Challoner, 1985; Schechter, Schwartz, & Greenfield, 1987). The negative feelings regarding the victimization experience may become associated with the body in the mind of the victim. Thus, having these types of experiences may bring more negative aspects of the body into focus. If focused on negative body self-evaluations, a woman may be at increased risk for feeling body shame. Furthermore, factors that increase the salience of the victimization experience in the mind of the victim may heighten level of body shame, including recency and frequency. The more recently a victimization experience has occurred, the more salient it may be to the victim. Likewise, the more times a woman is victimized, the more strongly she may associate her body with negative victimization-related feelings.

In support of the connection between
sexual victimization and body-related disturbances, although Harned (2000) did not examine body shame, she found that concerns about body shape and eating disturbances among college women were associated with many types of sexual victimization, including gender harassment, unwanted sexual attention, sexual coercion, attempted rape and rape. Sexual abuse in childhood was also associated with greater body shame in community and clinical samples (Andrews, 1995, 1997; Andrews & Hunter, 1997). Inconsistent with these findings, Andrews (1995) did not find a relation between adulthood abuse and body shame in a sample of London college women aged from 32 to 56 years old who were at high risk for developing clinical depression. Regardless, the samples used in Andrews’s (1995, 1997) and Andrews and Hunter’s (1997) studies may not generalize to the female college population. Furthermore, abuse in Andrews’s (1995) study was defined as sexual or physical, but the majority of adulthood abuse reported in this sample was physical rather than sexual (i.e., 11% sexual; 33% physical). Thus, conclusions regarding the relation between adulthood sexual abuse and body shame could not be made clearly and need further investigation.

Vidal and Petrak (2007) found that 75% of their noncollege sample of women who were sexually assaulted reported shame, including body shame. Vidal and Petrak also reported greater body shame scores in their sample compared to Andrews, Qian, and Valentine’s (2002) sample of London college women. However, Andrews et al. did not measure sexual victimization experience in their sample of undergraduates. Thus, without knowing the victimization status of these college women, the question of whether sexual victimization after childhood is directly related to greater body shame remains.

Although body shame was common among Vidal and Petrak’s (2007) sample of sexually assaulted women, there were other characteristics of their sample that made it nongeneralizable to the college student population. First, the women ranged from 17 to 50 years old, with an average age of 29.8, which is older than the traditional college student. Second, the sample size was relatively small ($n = 25$), and of the sample, even fewer women ($n = 17$) had completed higher education. Lastly, the majority of these women ($n = 20$) were a clinical sample seeking therapy.

Other considerations from Vidal and Petrak’s (2007) study include that the surveys were completed in an uncontrolled environment. Also, there was no clear timeframe for post assault. The sexual abuse could have occurred weeks or decades before the time of the study, at any point in life from age 16 on. Thus, confounds from other life events and memory biases may have existed. It may therefore be important to have more defined and recent timeframes. Lastly, many participants had a history of previous sexual victimization, which may exacerbate negative outcomes. For instance, Naville et al. (2004) found that prior victimization was associated with lower self-esteem. Thus, it may be important to consider the number of times a woman has experienced sexual victimization.

To build on the current literature, we examined the relation between body shame and sexual victimization experience in a sample of college women because this group is at risk for sexual assault but has been neglected in this area of research. Given that victimization involves body violation, researchers have postulated that negative feelings resulting from these types of experiences may be manifested as body-related concerns. Thus, sexual victimization may be a risk factor for body shame (Andrews, 1997; Oppenheimer et al., 1985; Schechter et al., 1987). Furthermore, more recent and frequent victimization may increase the salience of these events and, thus, the risk for even greater body shame. Therefore, our first hypothesis for the current study was that female college students with victimization experience, as indicated by the Sexual Experiences Survey (SES; Koss et al., 1987), would have higher body shame scores than students with no victimization experience. Our second hypothesis was that female college students with recent victimization (in the past year) experience, as indicated by the SES, would have higher body shame than students victimized earlier. Our third hypothesis predicted that, for female college students with victimization experience, more frequent sexual victimization, as indicated by the SES, was expected to be associated with greater body shame. Lastly, our fourth hypothesis predicted that female college students with both recent and more frequent victimization, as indicated by the SES, would have the highest body shame scores.

**Method**

**Participants**
Participants were 228 undergraduate women from a pool of volunteers enrolled in an introductory psychology class at a midsize public university on
the east coast. Most women were 18–22 years old (96%; age range 18–43). To restrict the sample to traditional college-aged women, we dropped students over the age of 22 ($n = 9$). Eighty-six percent of the sample identified their race as White/European, 9% African American, 2% Hispanic, and 2% Asian. Sixty-one percent of the sample identified themselves as freshman, 17% as sophomores, 5% as juniors, and 18% as seniors.

**Measures**

The Sexual Experiences Survey (SES; Koss et al., 1987) consists of 10 yes-or-no questions that measure four types of sexual victimization experiences (sexual contact, attempted rape, sexual coercion, rape) designed to detect unacknowledged victims (Koss & Oros, 1982). Sample items include, “Have you given in to sexual intercourse when you didn’t want to because you were overwhelmed by a man’s continual arguments and pressure?,” “Have you had a man attempt sexual intercourse when you didn’t want to by using some degree of force (e.g., twisting your arm, holding you down, etc.) but intercourse did not occur?,” and “Have you had sexual intercourse when you didn’t want to because a man gave you alcohol or drugs?” Following each of the 10 questions, participants who answered “yes” also circled the number of times (0 to 5 or more) the experience occurred since age 14 and within the past year. We considered students who answered “yes” to any of the victimization questions to have victimization experience and students who answered “no” to all 10 questions to have no sexual victimization experience. The SES is a valid and reliable measure, with scores corresponding to responses in interview format and Cronbach alphas of .74 and .73 in college and community samples of women. However, answering “yes” to one victimization question does not necessarily predict experience with any other item (Koss & Gidycz, 1985). The Cronbach alpha for the SES in the current study was .67.

To measure body shame, we administered the Body Shame subscale (BSS) of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde; 1996). This scale contains eight items including, “I feel like I must be a bad person when I don’t look as good as I could,” “I would be ashamed for people to know what I really weigh,” “When I’m not the size I think I should be, I feel ashamed,” and “I feel ashamed of myself when I haven’t made the effort to look my best.” Participants rated their agreement with each item on a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). We computed mean scores, which could range from 1 to 7, with higher scores indicating greater body shame. The overall mean score in the present sample ($M = 3.51$) was similar to mean BSS scores in other samples of college women (McKinley, 1999; McKinley & Hyde, 1996). The Cronbach alpha for the BSS in the current study was .84. McKinley and Hyde (1996) reported Cronbach alphas of .75 and .70 for two samples of undergraduate women and .84 for two samples of undergraduate women and .70 for a sample of middle-aged women. They also found the expected positive relations between the BSS and the endorsement of cultural body standards, as well as body surveillance, and negative relation between the BSS and body esteem.

**Procedure**

We received approval to conduct the current study from an Institutional Review Board. We administered surveys, including demographic questions, the SES, and the BSS of the OBCS, in a classroom setting and instructed participants to sit at least every other seat apart from one another to aid in privacy. Prior to the distribution of surveys, participants signed an informed consent form, and all responses were completely anonymous.

**Results**

**Prevalence**

We dropped one person from the analyses due to missing data on the BSS. Also, one participant reported victimization experience prior to the age of 14 only and, thus, we dropped her from the analyses to avoid confounds. We categorized participants who indicated no victimization experience as the “never” group ($n = 118$). Almost half the sample ($n = 99$) indicated victimization experience (45 sexual contact, 12 attempted rape, 20 sexual coercion, and 22 rape). Of the women with victimization experience, 65% indicated that they had experienced victimization within the past year; we categorized them as the “recent” group ($n = 64$; based on participant ages, victimization could have occurred between 17 to 22 years old). We categorized all remaining participants with victimization experience (35%) as the “earlier” group ($n = 35$; indicated victimization experience since age 14 and prior to the past year). For the participants in the recent group, 25% indicated one incident, 30% indicated two incidents, 13% indicated three incidents, and the remaining 34% indicated more than three (range 4–12) incidents during the past year. For participants in the earlier
group, 31% indicated one incident, 29% indicated two incidents, 9% indicated three incidents, and the remaining 31% indicated more than three (range 4–15) incidents prior to the past year.

**ANCOVA for Body Shame Scores**

To test Hypotheses 1 and 2, we performed an ANCOVA based on the three groups on the body shame scores. Frequency, which we entered as a covariate to control for its effect, was not significant, $F(1, 216) = 1.46, p = .23$, partial $\eta^2 = .007$. There was a main effect for victimization experience, $F(2, 214) = 3.71, p = .026$, partial $\eta^2 = .034$. To examine the hypotheses more specifically, we calculated a priori pairwise comparisons using Dunn’s procedure to control for total experimentwise error, resulting in a .017 significance level requirement. The recent group ($M = 3.4, SD = 1.2, p = .003$, partial $\eta^2 = .05$) and earlier ($M = 3.2, SD = 1.0, p = .003$, partial $\eta^2 = .09$) groups. However, there was no significant difference between the never and earlier groups.

**Regression for Body Shame Scores**

We used a multiple regression analysis, with body shame as the criterion variable, to test Hypotheses 3 and 4 for all participants who indicated victimization experience on the SES ($n = 99$). Victimization as recent or earlier was dummy-coded and entered into the model first. Frequency of victimization was centered and entered into the model next as a continuous variable, followed by the interaction between these two variables. Pearson correlations among the variables appear in Table 1. The total proportion of variance accounted for by the full model was $R^2 = 10.2\%$, $F(3, 95) = 3.6, p = .016$. The interaction term was not significant, $\beta = .243, p = .66$. Thus, we examined the other two variables without the interaction term in the model. There was no main effect for frequency, $\beta = .253, p = .27$. The main effect for recent/earlier was significant, $\beta = 5.69, p = .008$, accounting for 8.8% of the variance.

### Discussion

We designed this study to measure the relation between sexual victimization and body shame in a sample of college women. Hypothesis 1 predicted that female college students with victimization experience would have higher body shame scores than students without such experience, and partial support was found. Unexpectedly, students victimized prior to the past year (i.e., earlier group) did not differ in body shame scores from students who indicated no victimization experience (i.e., never group). However, as predicted, students who reported victimization within the past year (i.e., recent group) had greater body shame scores than students in the never group. Consistent with Hypothesis 2, students who reported victimization within the past year had higher body shame scores than students who reported earlier victimization. Lastly, for students who indicated sexual victimization experience, Hypothesis 3 predicted an association between frequency of sexual victimization and body shame, and Hypothesis 4 predicted the highest body shame scores for students with both recent and frequent victimization. We did not find support for Hypotheses 3 or 4.

These findings are inconsistent with Andrews’s (1995) study, which found no link between adulthood victimization and body shame. However, the abuse examined in Andrews’ (1995) study was largely physical rather than sexual, the sample was older on average and at high risk for developing clinical depression, and Andrews used a different measure of body shame. The BSS used in the current study measures the shame an individual feels about oneself based on how well one meets idealized cultural standards of beauty. It is possible that women who are older and/or at risk for clinical depression experience less concern regarding pressures to fit ideal body standards than traditional undergraduate women. Nonetheless, given that the youngest participants in the current sample were 18 years old, reported victimization must have occurred no earlier than 17 years old in the recent group, which is consistent with age cutoffs in previous research defining adulthood experience (Andrews, 1995; Vidal & Petrak, 2007). Thus, inconsistent with Andrews (1995), these results...
show at least one population in which adulthood abuse is linked to body shame. Although Andrews (1995) found a link between childhood victimization and body shame, conclusions regarding childhood abuse from the current study cannot be made, given that the analyses included no one who reported victimization before the age of 14, including women in the earlier group.

As for the contributions of the current study, results showed that recent sexual victimization experience was associated with greater body shame than earlier or no victimization in female college students. Sexual aggression of any kind may be interpreted as an intrusive violation of the body, making one more conscious of the body and at risk for negative body-related feelings and self-evaluations, including body shame. However, more recent sexual victimization may be more salient so that its impact on body shame is greater. It is also possible that women who reported earlier victimization had more time than those in the recent group to cope with the body violation and overcome any related body shame or other negative self-evaluations.

Also, given that sexual victimization is prevalent among college women and that they have been neglected in research examining body shame and sexual victimization, the current study fills an important gap in this literature. However, our sample also limits our findings from being generalized beyond the female college population. The majority of participants in our sample were freshman. Freshman in the recent group (n = 38) may have been reporting on victimization experience that occurred in college or within the past year prior to the start of college, whereas freshman in the earlier group (n = 20) were likely reporting on experience that occurred prior to college. On the other hand, sophomores, juniors and seniors in the recent group (n = 26) were likely reporting victimization experience that had taken place since starting college, whereas those in the earlier group (n = 15) may have been reporting on victimization experience that occurred in college or prior to the start of college. Thus, although our sample contained college women, caution should be taken to consider that victimization experience during college may be different than victimization occurring prior to college. Future researchers could investigate this possibility and continue to examine the association between sexual abuse and body-related self-evaluations with different types of samples (i.e., college, noncollege, clinical), victims (i.e., adult, child, men), and sexual victimization definitions (i.e., recency, frequency, severity). Future researchers could also investigate how the recency of a sexual assault may impact treatment programs for victims suffering from body shame and other body-related problems. Finally, our results suggest that clinicians working with victimized women may benefit from considering the recency of the victimization and understanding that body shame is a risk factor.

References
The Relations of Cynical Hostility and Depression to Sleep

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Salisbury University

ABSTRACT. Cynical hostility is related to various sleep problems and depression; however, it is not known if hostility relates to sleep independent of depression. We hypothesized that hostility would negatively relate to fatigue, as well as sleep quality and duration, but not independently of depressive symptoms. Participants (62 men, ages 18-30; 55% White) completed measures of depression (Beck Depression Inventory; Beck, 1987), cynical hostility (Cook-Medley Hostility Scale; Cook & Medley, 1954), and sleep. Hostility correlated with fatigue, $r(60) = .33$, $p < .01$, but this association did not remain after controlling for the effect of depression, $\Delta R^2 = .24$, $p < .001$, in a hierarchical linear regression analysis. The finding that depression statistically accounted for the association between hostility and fatigue suggests that depression is important to consider as a potential mediator in prospective studies of hostility and sleep.

Cynical hostility is a personality trait consisting of a negative attitude, mistrustfulness, and ill will toward others (Smith, 1992, 1994). This construct has been associated with a range of negative health behaviors, including elevated rates of smoking, drinking, and caloric intake (Scherwitz et al., 1992), and poorer psychosocial and emotional health outcomes, including depression (Siegler et al., 2003). The health implications of cynical hostility are therefore wide ranging.

Considering that sleep is an important factor in physical and emotional health, it is important to fully understand if and how cynical hostility may be related to sleep outcomes. Several studies have examined a variety of hostility measures in relation to sleep problems. Using a measure of hostility derived from the Cook-Medley Hostility Scale (CMHS; Cook & Medley, 1954), Brissette and Cohen (2002) found that higher levels of cynical hostility were associated with greater difficulty with sleep onset and wakefulness. Other investigators have operationalized hostility differently. For example, a propensity to experience anger as measured by the Finnish Twin Study Hostility scale (FTSH) was associated with greater sleep disturbances and sleep that was not refreshing (Granö, Vahtera, Virtanen, Keltikangas-Järvinen, & Kivimäki, 2008).

In a study of prison inmates, the hostility subscale of the Aggression Questionnaire (AQ; Buss & Perry, 1992) that measures cognitive and ruminative characteristics of hostility was associated with shorter sleep duration and greater problems with sleep quality as measured by the Sleep Complaints Scale (SCS; Asplund, 1995; Ireland & Culpin, 2006). Although these findings suggest that various dimensions of hostility are related to poor sleep, the relation of cynical hostility to sleep problems has not been sufficiently examined. Cynical hostility is particularly important to examine given that it is widely associated with poor health behaviors (Smith, 1992). In addition, investigators thus far have not examined whether depressive symptoms could act as a potential third variable that might account for the associations between hostility and sleep reported in the literature. Previous research has indicated that depression is statistically and conceptually related to various aspects of hostility (Beck, Lester, & Albert, 1973; Brooks, Girgenti, & Mills, 2009; Maier et al., 2009) and sleep (Sbarra & Allen, 2009). Clinically, sleep problems are a common symptom of depression (American Psychiatric Association, Diagnostic and Statistical Manual of
Cynical Hostility, Depression, and Sleep | Gastelle and Maier

Mental Disorders, 1994), and greater hopelessness and worthlessness as measured by the Beck Depression Inventory (BDI) are associated with fewer hours of average sleep duration (Brooks, Garrison, LaLonde, Quijiones, & Bathija, 2003). Cynical hostility also loaded with depressive symptoms in at least one factor-analytic study of anger, hostility, and depression measures (Maier et al., 2009). Greater cynical hostility scores have also been related to increased negative affect in response to reported interpersonal conflicts (Brissette & Cohen, 2002) and greater reactivity to interpersonal conflict (Räikkönen, Matthews, Flory, & Owens, 1999). In turn, greater cynical hostility predicts greater reported sleep disruption in proximity to the occurrence of interpersonal stressors (Brissette & Cohen, 2002).

Although the potential causal nature of these associations is not clear, it is nevertheless important to determine if the relations of hostility and sleep are independent of depression. The present study therefore extends the literature by using the most common measure of cynical hostility in the health literature and by controlling for the potential effects of depression on sleep. We hypothesized that hostility would predict poorer sleep as indicated by greater daytime fatigue, lower perceived sleep adequacy, and fewer average hours spent sleeping. However, because hostility is related to both depression and sleep and the fact that sleep problems are closely related to clinical manifestations of depression, we expected that depressive symptoms would account for variability in sleep measures better than hostility.

**Method**

**Participants**

Men (n = 62) from 18–30 years of age (M = 19.65; SD = 2.33) completed questionnaires at the end of a related psychophysiology protocol (Maier, Waldstein, & Synowski, 2003). The racial composition of the sample consisted of White (55%), Black (20%), Asian American (21%), and “other” (4%). Participants were recruited from introductory psychology courses. Each received $10 as well as extra course credit for participating. All participants reviewed and signed a consent form explaining the study and had an opportunity to pose any questions they had about participating.

**Measures**

We used the Cook-Medley Hostility Scale (CMHS; Cook & Medley, 1954) to measure cynical hostility. The scale has been validated to assess general mistrust and cynicism (Smith & Frohm, 1985). The CMHS is the most widely used hostility measure in the health psychology literature; it has been associated with a range of poor health outcomes (Miller, Smith, Turner, Guijarro, & Hallet, 1996). The CMHS consists of 50 items in true/false format. In tests of reliability, the CMHS has shown an internal consistency (alpha) as high as .85 (Barefoot, Dahlstrom, & Williams, 1983; Shekelle, Gale, Ostfeld, & Paul, 1983).

For sleep, participants rated how often they felt fatigue during the day and how often they perceived their sleep as adequate, using a 5-point scale (1 = never, 2 = rarely, 3 = occasionally, 4 = most of the time, 5 = always). Participants also listed their average duration of sleep on weekdays and weekends using an open-ended response format. Sleep duration is typically assessed in validated sleep measures such as the Pittsburgh Sleep Quality Index (PSQI) by measuring average hours of sleep over the past month (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989); however, we split our measure of sleep duration into two parts to better capture the potential variability between weekday and weekend sleep patterns reported among college students. We assessed perceived adequacy of sleep because of the conceptual usefulness of examining differences in how individuals may qualitatively experience their sleep. Although investigators had not examined fatigue in the sleep literature we reviewed, we believed that this measure could be useful to examine in relation to cynical hostility because of a prior finding between a different form of hostility and poor sleep quality (Granö et al., 2008).

We measured depressive symptoms with the BDI (Beck, 1987). The BDI assesses a range of mild to severe depressive symptoms by asking respondents to rate the degree to which they are experiencing various aspects of depression. The BDI is a highly reliable instrument with an internal consistency of .92 for men and .91 for women in one analysis (Osman, Kopper, Barrios, Gutierrez, & Bagge, 2004). Additionally, past investigations have used the BDI as a means of measuring depression in relation to sleep and cynical hostility (Brooks et al., 2003; Maier et al., 2009).

**Data Analysis Approach**

After dropping one subject with an unrealistic response for hours of sleep, we analyzed 62 subject responses. We first examined the relations among sleep measures, the CMHS, and the BDI.
using Pearson correlations. Because of the close association of depressive symptoms with sleep, we then controlled for depression scores. Using each sleep measure as the outcome variable in separate hierarchical linear regression models, we entered BDI scores in the first step and CMHS scores in the second step.

Results
Means for all measures appear in Table 1. Prior to regression testing, Pearson correlations indicated that hostility and depression were positively associated with fatigue, $r(60) = .33$ and $.49$, respectively, $p < .01$, but not other sleep measures (see Table 2). After entering depression in the first step of the regression model to control for its effects on fatigue, the association between hostility and fatigue was not significant, $p > .05$; see Table 3. Depression scores did, however, account for a significant proportion of variance on fatigue, $\Delta R^2 = .24, p < .001$. Although the model predicting weekend sleep from hostility and depression was not significant, $p = .08$, hostility accounted for unique variance in sleep duration on weekends, with greater hostility associated with fewer hours of sleep, $\Delta R^2 = .07, p < .05$. Results yielded no other significant relations prior to or following hierarchical linear regression pertaining to the hypotheses, $p > .05$.

### Table 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>$M$</th>
<th>$SD$</th>
<th>range</th>
<th>$\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMHS</td>
<td>23.66</td>
<td>7.52</td>
<td>(8-39)</td>
<td>.82</td>
</tr>
<tr>
<td>BDI</td>
<td>7.31</td>
<td>5.52</td>
<td>(0-23)</td>
<td>.82</td>
</tr>
<tr>
<td>Fatigue</td>
<td>2.48</td>
<td>.91</td>
<td>(1-4)</td>
<td></td>
</tr>
<tr>
<td>Sleep Adequacy</td>
<td>3.16</td>
<td>.88</td>
<td>(1-5)</td>
<td></td>
</tr>
<tr>
<td>Sleep duration on weekdays (hrs)</td>
<td>6.50</td>
<td>1.17</td>
<td>(3-9)</td>
<td></td>
</tr>
<tr>
<td>Sleep duration on weekends (hrs)</td>
<td>7.92</td>
<td>1.43</td>
<td>(4-10.5)</td>
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</tr>
</tbody>
</table>

Note. CMHS = Cook Medley Hostility Scale; BDI = Beck Depression Inventory. $\alpha$ = Cronbach's Alpha.

### Table 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>CMHS</th>
<th>BDI</th>
<th>Fatigue</th>
<th>Sleep Adequacy</th>
<th>Hrs Weekdays</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI</td>
<td>.50***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>.33**</td>
<td>.49***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep Adequacy</td>
<td>-.21</td>
<td>-.15</td>
<td>-.27*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hrs Weekdays</td>
<td>-.13</td>
<td>-.05</td>
<td>-.07</td>
<td>.72***</td>
<td></td>
</tr>
<tr>
<td>Hrs Weekends</td>
<td>-.16</td>
<td>.12</td>
<td>.23</td>
<td>.24</td>
<td>.24</td>
</tr>
</tbody>
</table>

Note. BDI = Beck Depression Inventory; CMHS = Cook Medley Hostility Scale; Hrs = average hours slept. $p < .05$, **$p < .01$, ***$p < .001$.

### Table 3

<table>
<thead>
<tr>
<th>Full Model</th>
<th>Predictor Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
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<tr>
<td>Daytime Fatigue</td>
<td>9.60</td>
</tr>
<tr>
<td>CMHS</td>
<td>.01</td>
</tr>
<tr>
<td>Sleep Adequacy</td>
<td>1.46</td>
</tr>
<tr>
<td>CMHS</td>
<td>.03</td>
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<tr>
<td>Hrs Weekdays</td>
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<tr>
<td>CMHS</td>
<td>.02</td>
</tr>
<tr>
<td>Hrs Weekends</td>
<td>2.68</td>
</tr>
<tr>
<td>CMHS</td>
<td>.07</td>
</tr>
</tbody>
</table>

Note. Hrs = average hours slept. BDI = Beck Depression Inventory scores entered in first step of the regression model; CMHS = Cook Medley Hostility Scale scores entered in last step of the regression model. $B$ = Unstandardized regression coefficients at last step of model with all variables included. $\beta$ = Standardized regression coefficients at last step of model with all variables included. $\Delta R^2$ = Proportion of variance accounted for by variable at the step entered (BDI first, CMHS second).
Cynical Hostility, Depression, and Sleep | Gastelle and Maier

Discussion

Neither depression nor hostility significantly predicted perceived adequacy of sleep, average sleep on weekdays, or average sleep on weekends. Although both cynical hostility and depression related to greater fatigue, depression was more strongly associated. This finding is consistent with the fact that fatigue is one of several possible symptoms of clinical depression (DSM-IV, 1994). We note, however, that our entirely male sample limits the generalizability of these findings to women, especially given that there are gender differences in both hostility (Maier et al., 2009) and depression (DSM-IV, 1994).

Although depression accounted for greater variability in fatigue than did hostility, it is still possible that hostility is an important construct to examine with regard to other aspects of sleep. For example, the magnitude of associations between sleep amount and adequacy appeared greater for hostility than for depression. Although we did not conduct statistical tests between these sets of correlations, this pattern of findings suggests that the associations of hostility and depression with sleep may differ depending on the domain of sleep being examined.

In addition, the sample size of this study may have limited the statistical significance of the findings. A power analysis (Faul, Erdfelder, Buchner, & Lang, 2009) using the average of the observed correlations in this study (r = .16) estimated that a sample of 220 subjects would be needed to detect a significant effect at the power level observed for fatigue in this study (.77). The select nature of the sample may also have limited the results, considering that the average CMHS score of this sample (M = 23.66, SD = 7.52) appeared lower than normative data for young men (M = 25.81, SD = 7.80) reported elsewhere (Maier et al., 2009). It is possible that levels of hostility may have been too low to sufficiently impact the sleep domains that we measured. Although the correlations between hostility and sleep were not statistically significant, the directions of effects are consistent with theoretical expectations of poorer health behaviors associated with hostility. The size of the correlations (ranging from -.13 to -.21) could potentially have clinical significance, should these effects be replicated in future research.

Future research in this area may benefit from some measurement considerations. First, we rationally derived the sleep measures used here and, although some were similar to those used in validated measures such as the PSQI (Buysse et al., 1989), they have not been used in prior research. The PSQI is a self-report questionnaire designed to gauge sleep quality and disturbances over a one-month interval. Because the PSQI has been widely used and validated in sleep research and clinical applications, the domains measured by it, such as sleep latency and interruptions of sleep, may prove to be an effective tool in measuring a range of sleep problems in future research. Finally, it is possible that any disruption in sleep due to cynical hostility may vary over time and circumstances in a way that our measures did not capture (Brissette & Cohen, 2002; Smith, Glazer, Ruiz, & Gallo, 2004). For example, because a high degree of cynical hostility is associated with interpersonal stress (Smith, 1992), any effect of hostility on sleep may be better measured by a question such as, “How many times a week do you feel you lose sleep after having conflict with other people?” Similarly, assessing participants over time may allow for periodic assessment of conflict-related sleep loss.

This study adds to the literature by taking into account the role of depression in the relation between cynical hostility and sleep. Often hostility and depression are examined separately; however, there is growing evidence that they are related (Maier et al., 2009). Although causal associations are not clear thus far in the literature, it is possible that hostility plays a causal role in depression. In one recent study, hostility temporally preceded depressive symptoms in an adult sample (Stewart, Fitzgerald, & Kamarck, 2010). This finding, along with our results, suggests that future investigators may consider examining depression as a mediating factor in the association between hostility and sleep problems. Even though hostility is considered a dispositional construct, and thus would precede depression, it is also possible that depression has a causal influence on aspects of cynical hostility. Likewise, it is reasonable to suggest that sleep difficulties could affect the experience of depressive symptoms, particularly fatigue. Nevertheless, the finding that depression statistically accounted for the association between hostility and fatigue in this study suggests that depression is important to consider as a potential mediator in prospective studies of hostility and sleep.

References


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Altruism is a well established concept. Batson (1991) defined it as a motivational state with the ultimate goal of promoting another's welfare. An important element of altruism is that the helper is not motivated by self interest, but is instead motivated to meet the needs of another person. A recent meta-analysis of research in this domain supports Batson’s (1991) definition, as Haski-Leventhal (2009) found that practically every definition of altruism emphasizes helpful actions toward an abstract or visible “other.” Although researchers agree on a definition of altruism, there is disagreement about whether individuals ever behave in a truly altruistic fashion or whether self interest is always involved (Cialdini et al., 1987; Simmons, 1991). Some researchers argue that true altruistic behavior may occur as a result of empathy. Empathy is defined as the ability to feel what others feel (Ginot, 2009; Krebs, 1975) and may create a sincere desire to relieve the suffering of another person (Haski-Leventhal, 2009). It is also possible that empathy promotes self-interested helping (known as egoism), if the individual identifies with “the other,” feels secondary distress, and helps as a way to alleviate his or her own distress (Ginot, 2009; Haski-Leventhal, 2009). In other words, an action that appears to be altruistic might not be if the underlying motive is self serving in any way.

This question of underlying motivation has fueled the debate as to whether people are capable of altruism or whether all helping behavior is actually self serving (Simmons, 1991). For example, Smith (1981) claimed that positive mood maintenance, negative state relief, or even padding one’s résumé may be the underlying motivation for behaviors that appear to be altruistic. Similarly, Cialdini et al. (1987) argued that almost all helping behaviors reflect egoism, even if the motive is only to increase the helper’s self esteem. Cialdini et al. further claimed that these self-serving motives are subtle and potentially unconscious. The idea that humans always operate with selfish motives is the most pervasive argument against selfless, or true, altruism (which we refer to as altruism throughout our paper). The controversy is difficult to resolve because motives are challenging to identify, sometimes even for the helpers themselves.

Research tends to focus on antecedents or predictors of helping behavior, without being able to establish whether the helping behavior is altruism or egoism. One such predictor of helping behavior is family socialization. Berkowitz and Connor
(1966) found that authoritative parents who modeled helping behavior in the home environment had children who exhibited the social responsibility norm, which is the attitude that individuals should help others who need help, regardless of future returns. The children of parents who modeled low levels of frustration with victims and attributed victims’ dependence to external factors (rather than placing blame on victims) were more likely to believe in altruism and to help others (Berkowitz & Connor, 1966).

Geographic region emerges as another variable linked to helping behavior. Lay, Allen, and Kassirer (1974) found through a retrospective study that individuals reared in rural settings helped more than individuals reared in urban environments. The researchers suggested that perhaps the greater diffusion of responsibility present in crowded urban areas may explain this difference (Lay et al., 1974).

Other literature indicates that sex of the helper is an important variable. Although women offer more help than men overall, men offer more help in emergency situations that involve an immediate threat to the victim and bystanders (Eagly & Crowley, 1986; Lay et al., 1974; Levine & Crowther, 2008). Women provide more help in long-term care relationships such as caring for children or aging parents (Eagly & Crowley, 1986; Levine & Crowther, 2008).

Religion also predicts helping behavior. Cnaan (2002) found that greater religiosity predicted greater volunteerism. Specifically, individuals who practice helping behavior within the religious institution are more likely to exhibit helping behavior in other contexts. Cnaan argued that one explanation for the link between religiosity and volunteerism may be that almost all religions teach the importance of helping others. Haski-Levanthal’s meta-analysis (2009) found that individuals are more likely to help if the helping behavior matches the norms of their affiliation group, especially if the individuals have internalized those norms.

Research has also indicated age as a positive correlate of perceptions and beliefs associated with altruism. Poulin and Silver (2008) conducted a longitudinal study of over 2,000 participants and found, after controlling for demographics, prior stressful life events, and other potentially confounding variables, that positive perceptions of altruism increased with age. Peterson (1983) similarly noted that ability to help and internalization of prosocial values such as altruism typically increase with age.

Zahn-Waxler, Radke-Yarrow, and King (1979) identified several attitudes related to exhibiting helping behavior. Their study of mother-child interaction demonstrated that attitudes such as valuing social connectedness, justice, and equality predicted greater helping behavior. In addition, mothers who modeled empathy for others in distress had children who were more likely to exhibit willingness to help other children (Zahn-Waxler et al., 1979).

Garcia, Weaver, Moskowitz, and Darley (2002) examined willingness to help as a function of personal accountability. The researchers found that participants primed with the thought of being alone versus with a group pledged significantly more money on a charity giving measure. Participants primed with the thought of being alone also preferred words associated with “accountable” rather than “unaccountable” on a word choice decision task. These findings illustrate that accountability is a predictor of helping behavior and demonstrate the relevancy of unconscious priming in behavior choices. Primes influence individuals’ thought processes and behavior, regardless of whether they are consciously aware of the influence. The potential manipulation of human behavior as the result of a simple prime holds implications for the current research study as well as psychology in general.

Purpose and Hypotheses
The first goal of our study was to examine whether participants believed in altruism (versus egoism) and to identify variables associated with this belief. We hypothesized that a majority of participants would report believing in altruism. We based this expectation on the fact that most of our participants were from a region of the country that is relatively high in religiosity and that is largely rural. Because both of these variables are linked with greater helping behavior, it follows that attitudes about altruism may be relatively positive for the majority of our participants.

The second goal of our study was to determine whether priming participants with past experiences related to helping would impact both beliefs about altruism and willingness to help. We hypothesized that participants primed with positive memories of altruism (i.e., giving or receiving help) would be more likely to report believing in altruism and would be more likely to exhibit willingness to help than participants primed with negative memories of altruism (i.e., being denied help) or the control
Predictors of Beliefs About Altruism | Howard, Nelson, and Sleigh

The third goal was to examine how beliefs about altruism differed between participants willing to help and those participants unwilling to help. We hypothesized that participants who exhibited helping behavior when no personal benefits were offered would be more likely to believe in altruism compared to participants who did not help. Previous research had not combined a measurement of beliefs in altruism with a measurement of willingness to help.

Method

Participants
The sample for this exploratory study was composed of 95 undergraduates (33 men, 62 women) recruited from courses at a mid-sized southern university. The majority of participants (58%) were Caucasian, 26% were African American, and 16% identified themselves as “other.” The mean age was 20.75 (SD = 5.47), with a range of 18 to 43. Forty-one percent of the participants were freshmen, 21% were sophomores, 15% were juniors, and 20% were seniors. The mean GPA was 3.06 (SD = 0.56), with a range of 1.0 to 4.0. Participants ranked religion as somewhat important in their everyday lives, M = 3.64 (SD = 1.33), on a 5-point scale (1 = strongly disagree and 5 = strongly agree). Participants received a small amount of extra course credit in exchange for their participation.

Materials
We created four versions of the survey. Three versions contained priming conditions and one version served as a control condition. The three priming conditions involved a short reflective writing exercise. We asked participants to reflect on a time in their lives and then write about it. We modeled the priming procedure after previous research that employed written primes (Garcia et al. 2002); however, we developed the specific wording to match the focus of our study. We designed Condition 1 to prime participants to think of a time when they had exhibited altruism (giving help condition). Condition 2 primed participants to think of a time when they had received the benefits of an altruistic act (receiving help condition). Condition 3 primed participants to think of a time when they were either ignored or denied help (denied help condition). The control condition contained no prime.

We asked participants to also respond to a 34-item survey. Based on previous research on altruism, we developed 19 items designed to tap beliefs and perceptions about altruism. For example, Haski-Leventhal (2009) found that the ability to help others without expecting anything in return related to altruism. Thus, we developed an item asking participants for their level of agreement with the statement, “An individual can help someone without expecting anything in return.” These statements included perceptions about the importance of helping strangers, perceptions about whether human nature is inherently selfish, and beliefs about whether altruism exists. Participants responded on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

We designed one question to assess perceptions about the mechanisms underlying altruistic actions. Participants ranked five possible motives for why people “do good things”: individuals’ personality, determination, experience, God, or peer pressure. We used Robins, Hendin, and Trzesniewski’s (2001) single item self-esteem measure. We asked participants how easily they are able to “feel what others are feeling,” a measure intended to assess empathy as Ginot (2009) described. Twelve items assessed demographic variables, including questions about gender, age, the extent to which religion was important in participants’ lives, and levels of volunteer involvement.

At the end of the survey, participants read a set of instructions asking them if they would like to volunteer to participate in an additional aspect of the research study. The instructions stated that no additional extra credit would be offered and participants were instructed to ask the researcher for the room number where the researcher was holding the additional research study if the participants decided to volunteer. We created this behavioral measure to test whether participants were willing to offer additional help to the experimenter without receiving personal benefits, to exhibit altruism (helping behavior).

Procedure
The study took place in undergraduate classrooms. Participants received at random a survey that contained one of the three priming conditions or the control condition (Condition 1: n = 24; Condition 2: n = 24; Condition 3: n = 24; Control condition: n = 23). We gave participants 3 min for the written prime and then instructed them to continue the survey. If participants chose to help with the optional second part of the survey (helping behavior), the researcher made a check mark on the survey and instructed the participant to...
see a confederate down the hall. The confederate handed the participant the debriefing form and explained that there was no second part to the research. The researcher kept count of the number of participants who volunteered to help, and the confederate kept count of the participants who approached him or her in order to ensure that all the participants who volunteered followed through with the commitment to help. If participants chose not to participate, the researcher handed the participants the debriefing form in the original classroom.

**Results**

To test participants’ beliefs about altruism, we computed an “Altruism Beliefs” score (AB) for each participant by calculating the mean of the responses to the 19 relevant questions. The mean AB score across all four conditions was 3.85 (SD = .41), indicating that participants had positive beliefs about altruism.

To test the prediction that being primed with previous experiences with altruism would impact beliefs about altruism, we examined AB scores as a function of the four priming conditions using ANOVA. Contrary to predictions, the priming conditions did not lead to different AB scores, F(3, 90) = .014, p = .998, ns.

The priming exercise significantly influenced a pattern of responses linked to the motivations underlying altruistic behavior. Participants in the “giving help” condition rated peer pressure as a weaker motivation for altruistic behavior than participants in the “receiving help” condition, F(3, 90) = 2.74, p = .048, r² = .08. Participants in the “giving help” condition rated personality as a stronger motivation for altruistic behavior than participants in the “receiving help” condition or in the “denied help” condition, F(3, 90) = 4.28, p = .007, r² = .12. Post hoc analyses revealed no other significant group differences, as shown in Table 1.

We explored whether the priming conditions impacted helping behavior. Contrary to predictions, priming did not have a significant effect on participants’ willingness to help, F(3, 91) = .449, p = .719, ns. Fifty percent of participants in the receiving help priming condition exhibited helping behavior. Thirty-eight percent of participants in the giving help condition, 38% of participants in the denied help condition, and 35% of participants in the control condition exhibited helping behavior.

Because our priming exercise did not affect participants’ responses to the questions connected to their overall AB score, we were able to examine the data set as a whole as we explored our other hypotheses. We compared participants who exhibited helping behavior and participants who did not on multiple variables using an independent t test. As expected, participants who exhibited helping behavior were more likely to report positive beliefs regarding altruism as indicated by their higher AB scores, t(92) = 2.65, p = .010, d = .54 (helped mean = 3.99, did not help mean = 3.76); this finding is a moderate effect size. Participants who exhibited helping behavior also rated religion as less important in their everyday lives than those participants who did not help, t(90) = -2.59, p = .011, d = .59 (helped mean = 3.22, did not help mean = 3.93), also indicating a moderate effect size. Participants who exhibited helping behavior also agreed more that they find it easy to feel what others are feeling, t(93) = 1.97, p = .05, d = .42 (helped mean = 4.11, did not help mean = 3.81), a small effect size.

We also ran a series of exploratory analyses to examine relations among demographic and individual difference variables, scores on the AB, and willingness to help. Pearson’s correlations revealed that the higher the AB score, the more often participants reported volunteering their time, r(94) = .32, p < .05, r² = .10; the higher participants’ self-esteem, r(94) = .31, p = .002, r² = .10; the more participants agreed that it is easy for them to feel what others are feeling, r(94) = .25, p = .015, r² = .06; and the older the participant, r(94) = .22, p < .05, r² = .05.

To explore gender differences, we compared men and women on several variables using a series of independent t tests. We found no significant differences on AB or helping behavior. To explore racial ethnic differences, we compared African American and Caucasian participants on several variables using a series of independent t tests. Again, there were no significant differences on AB or helping behavior.

**Table 1**

<table>
<thead>
<tr>
<th>Priming Condition</th>
<th>Peer Pressure</th>
<th>Individual’s personality</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Giving help”</td>
<td>4.43</td>
<td>1.83</td>
</tr>
<tr>
<td>“Receiving help”</td>
<td>3.33</td>
<td>2.96</td>
</tr>
<tr>
<td>“Denied help”</td>
<td>N/A</td>
<td>2.26</td>
</tr>
</tbody>
</table>

Note: Higher numbers indicate weaker reported influence.
Predictors of Beliefs About Altruism

We hypothesized that participants would have positive beliefs about altruism, and this hypothesis was supported. Our findings provide a different perspective from recent literature that suggests today’s young adults may be more focused on wealth and personal comfort and see altruism as less important than previous generations (McCrindle, 2011; Ragusa, 2008). For example, Ragusa (2008) asked a group of young adults how they would spend a hypothetical gift of $1,000 and found that participants ranked saving and buying clothes significantly higher than altruistic endeavors. Even if priorities have shifted across generations, our data indicate that young adults still believe that people will unselfishly help others.

We hypothesized that participants primed with altruistic memories associated with giving or receiving help would have more positive beliefs about altruism. This hypothesis was not supported. None of our priming conditions impacted altruism beliefs. However, the priming exercise did influence the motives that participants attributed to altruistic behaviors, an effect that had not been explored in previous research. Participants primed to think of a time when they behaved altruistically credited personality as a motivation for helping others and minimized the influence of peer pressure. In contrast, participants primed to think about receiving help from another person rated peer pressure as a stronger motive and personality as a weaker motive. These findings may be the result of participants crediting the altruistic action to themselves rather than the situation. Participants taking credit for their actions is consistent with self-serving biases whereby individuals tend to attribute desirable behavior to personal rather than situational factors.

We also hypothesized that people primed with positive altruistic memories would be more likely to offer help; however, this hypothesis was not supported. We found that priming did not significantly affect participants’ willingness to help. One possible explanation is that participants’ beliefs and behaviors tied to altruism may be stable tendencies that are not easily influenced by brief interventions such as our priming task. To support this notion, we found that gender, race, religious involvement, and past experience with need did not predict participants’ beliefs about altruism or exhibition of willingness to help. Similarly, Kartner, Keller, and Chaudhary (2010) demonstrated that prosocial attitudes predicted positive attitudes toward altruism and social connectedness predicted helping behavior across cultures and concluded that the likelihood of exhibiting helping behavior may be more stable than previously believed.

A second possibility is that the priming manipulation used in this study was not powerful enough to impact beliefs and actions tied to altruism. One issue that may have weakened our manipulation is that some of the participants wrote about more significant events than others (receiving a new car vs. being given shelter when homeless), and this difference may have lowered the impact of the prime for some participants.

We compared the participants who chose to behave altruistically in the study to participants who did not. We hypothesized that participants with positive beliefs about altruism would be more likely to exhibit helping behavior. This hypothesis was supported. One explanation for this finding is that altruistic beliefs and behaviors truly match. A second possibility is that the pressure of being publicly asked to help with the second part of the study unconsciously shifted participants’ behavior to align with the attitudes they had just expressed.

We also found that participants who exhibited helping behavior were less religiously involved than participants who did not help. This finding contradicts Cnaan’s (2002) research, which showed that religious involvement and the altruistic values taught by most religions tended to predict helping behavior. One possible explanation is that participants in previous research were asked to provide assistance to others who clearly were in need of help, provoking the helping norm taught by most religions. In our study, the request for help was not urgent and did not convey a sense of strong need on the part of the researcher, thus perhaps failing to evoke the helping norm.

Another possible reason for this contradiction between our study and previous research is that previous researchers measured religion differently than we did. We measured how much religion was an integrated part of participants’ everyday lives. Past researchers tended to focus on religious service attendance and religious affiliation, not necessarily the impact of participants’ religion on their everyday lives (e.g., Bain, 1936; Richards, 1991). Dudycha (1933) found that college students practiced religious observance less frequently than most other age groups. If religion is measured by church attendance as in previous research, college students may score low on a religious measure. In our study, the same college students may have...
scored high on our measure of religion if they believed themselves to be living out their beliefs in nontraditional ways.

Participants who exhibited helping behavior also had higher empathy scores than participants who did not help. To further support the connection between empathy and willingness to exhibit helping behavior, we also found a positive correlation between empathy and AB. This finding is consistent with research on the positive relationship between empathy and altruistic behavior, (e.g., Simmons, 1991; Zahn-Waxler et al., 1979). Previous research focused on helping in standard emergency situations, whereas we demonstrated the same finding in a neutral, nonurgent scenario. These combined findings (from our and previous research) suggest that people in need and feeling empathy may lead to altruistic behavior in a variety of contexts.

We also found that increased volunteerism related to positive beliefs about altruism. One possible explanation for this finding is that individuals who positively view helping people in need donate their time in order to help those individuals. It is also possible that individuals who donate their time to charity may want to perceive their motivations as altruistic, engaging in self-serving bias. In other words, individuals may feel the need to believe altruism exists in order to feel good about their behaviors.

We found that older age related to positive beliefs about altruism, a finding supported by Poulin and Silver’s (2008) recent study. One possible explanation for this finding is that older individuals may have had more life experiences that exposed them to altruistic behaviors. Another possibility comes from Peterson (1983), who found that the ability to help increases with age, through increased resources such as time and money. Being able to engage in altruism may be an important component of believing in altruism.

Gender did not predict helping behavior in our study. Limitations in sample size for men may explain this lack of significant findings. The particular context in which we examined helping behavior may also account for the nonsignificant findings. As previous researchers reported, men tend to exhibit willingness to help when the individual is in immediate distress, whereas women tend to exhibit willingness to help in long-term care relationships (Eagly & Crowley, 1986; Lay et al., 1974; Levine & Crowther, 2008). In our study, the request for help was not urgent and the participants did not know the researcher. It is possible, therefore, that because our study did not exemplify either of the situations in which gender roles are most often elicited, gender did not emerge as a significant predictor of exhibiting willingness to help. Race also did not emerge as a significant predictor of helping behavior in our study. This finding is consistent with previous research that has not been able to demonstrate consistent differences between races on willingness to exhibit helping behavior (Dovidio & Gaertner, 1981). It is also possible that demographic factors other than the items surveyed, such as home environment as suggested by Berkowitz and Connor (1966) and parental modeling of consistent altruistic values as suggested by Zahn-Waxler et al. (1979), may have a stronger influence on participants’ willingness to help.

Another remaining question for future researchers is whether altruism can be taught as Zahn-Waxler et al. (1979) have argued. In addition, comparing the effects of visual priming versus written priming should be considered in future research. Visual priming may evoke stronger emotions than written priming, and these stronger emotions could potentially impact participants’ beliefs about altruism. Finally, future research may also want to address how the measurement of religion may impact the relation between religiosity and beliefs in altruism.

The results of our study showed that in general, young adults believed that altruism exists, even after some had been primed to think about a time in their lives when others behaved selfishly towards them. Priming did, however, change the way participants viewed motivations behind helping behavior. In other words, overall perceptions of altruism may be stable, whereas ideas about the mechanisms may be malleable. In addition, positive beliefs about altruism corresponded with participants’ willingness to exhibit helping behavior in a nonurgent situation. These results contribute to the growing understanding of this complex debated concept.

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Cialdini, R. B., Schaller, M., Houlihan, D., Arps, K., Fultz, J., & Beaman, A. L.
Predictors of Beliefs About Altruism | Howard, Nelson, and Sleigh


A placebo is often used in clinical trials to test the effectiveness of a new type of drug or treatment (Friedman & Dubinsky, 2008). Individuals presented with a placebo, and the instruction that it has the ability to alter symptoms, expect that the inert treatment will relieve their ailments. When this expectation causes an individual to experience a change in symptoms, the phenomenon is known as the placebo effect.

Research on the placebo effect emphasizes the importance of the expectation element. It is not the inert treatment, such as a pill or cream that results in a change in symptoms; the change occurs because of the patient’s expectation that the treatment will result in altered symptoms (Benedetti, 2008). Without the expectation, the inert treatments would have no effect on individuals, either physiologically or psychologically. A variety of methods have been used to study the placebo expectation, such as sham caffeine pills or modified acupuncture (Geers, Wellman, Fowler, Rasinski, & Helfer, 2011; Wasan et al., 2010). These methods alone have shown no effect on individuals; however, when paired with the expectation that energy will be increased or pain will be relieved, individuals experienced effects consistent with their expectation.

In placebo research and literature, the placebo effect does not always occur as expected (Benedetti, 2008). In some cases, individuals presented with a placebo expectation experienced no change in symptoms. Geers, Weiland, Kosbab, Landry, and Hefler (2005) discussed the search for a “placebo-responder” personality, but personality alone does not predict placebo responding. The goal of our research was to determine if a physiological characteristic, rather than personality, can determine how individuals respond to a placebo expectation.

The placebo effect has been used to treat many types of ailments, including both chronic and acute pain. Typically, chronic pain, such as migraines or back pain, tends to be long lasting. In contrast, acute pain tends to be sharp in feeling and lasts only a short period (Speciali, Peres, & Bigal, 2010). A recent study (Whalley, Hyland, & Kirsch, 2008) examined the relation between the placebo

**ABSTRACT.** The goal of this study was to explore the relation between blood pressure and pain sensitivity and examine how the presentation of a placebo expectation affected this relation. We hypothesized that participants given an expectation that a cream would reduce pain would report less pain than participants not given this expectation. The results indicated that the hypothesis was correct; participants given the placebo expectation experienced less pain than participants in the control condition. We found negative correlations between blood pressure and pain, such that participants with lower blood pressure experienced the greatest pain. The introduction of the placebo expectation did not affect this relation. Similarly, the introduction of the placebo had no effect on blood pressure. This research contributes to the understanding of responses to acute pain.
Placebo Effect, Blood Pressure, and Pain | Kamody, Woltja, Bugeja, Jackson, and Helfer

expectation and acute pain. To induce acute pain, participants received pricks on both hands. One hand received a placebo cream with the participant given the expectation that the cream would reduce pain, whereas the other hand remained untreated. Participants rated the hand treated with the cream as being less painful than the hand left untreated; that is, the expectation of pain relief resulted in participants experiencing less pain.

Although these results (Whalley et al., 2008) show that the introduction of a placebo analgesic can effectively reduce laboratory induced pain, research indicates that the introduction of a placebo can have various effects, depending on the context in which it is presented. For example, if the expectation presented is that the placebo will cause negative symptoms, such as headache or nausea, individuals will often believe that the placebo is making them ill (Geers, Helfer, Weiland, & Koshab, 2006).

Thus, although the placebo expectation can both induce negative symptoms and relieve ailments, our study focused only on the latter. The purpose of this study was to determine whether the introduction of a placebo reduced pain. Before it is possible to use a placebo to reduce pain, it is first necessary to induce a state of acute pain. The use of the cold pressor task to study the relation between pain and the placebo effect is common practice (Bennett & Boehm, 1997) and involves participants placing their hand in a container with ice water and then rating their pain.

In addition to being used to study the placebo effect, the cold pressor task is also commonly used to study the relation between pain and physiological responses, such as blood pressure (Streff, Kuehl, Michaux, & Anton, 2010). Important for the present research is the relation between resting blood pressure and pain sensitivity. Individuals differ in their resting blood pressure levels, and individuals with low resting blood pressure tend to have greater pain sensitivity than individuals with high resting blood pressure (Duschek, Schwarzkopf, & Schandry, 2008). For example, using the cold pressor task, Helfer and McCubbin (2001) studied the relations among sex, pain sensitivity, and blood pressure. In this study a significant negative correlation was found between resting systolic blood pressure and sensitivity to pain; this result did not differ for men and women.

The Present Research
In the current experiment, participants performed the cold pressor task with or without the expectation that a hand cream would reduce the pain caused by the task. Based on the findings of Montgomery and Kirsch (1996), we hypothesized that participants given the expectation that the cream would reduce pain would report less pain than participants not given this expectation. Additionally, we hypothesized that women would be more sensitive to pain and have lower blood pressure, as supported by previous research (Helfer & McCubbin, 2001). Furthermore, we assessed whether the relation between blood pressure and pain sensitivity would differ based on whether participants received given a pain relief expectation. Research has indicated that a relation exists between blood pressure and pain sensitivity (Duschek et al., 2008). Because the introduction of a placebo expectation should have an effect on pain (Whalley et al., 2008), we reasoned that the introduction of a placebo would also have an effect on the relation between blood pressure and pain sensitivity. The possibility that a placebo expectation would alter the association between blood pressure and pain sensitivity has not been examined in previous research.

Method

Participants
Participants consisted of 80 undergraduate students who earned partial course credit in their general psychology classes for their participation. Our inclusion criteria consisted of nonsmokers and individuals who were not taking medication causing cardiovascular effects. Due to these criteria, we excluded five participants. Of the 75 remaining participants (33 men, 42 women, M age = 18.93 years, age range: 18–24), 57 identified themselves as being White/Caucasian, seven as Black/African American, two as Asian American, one as American Indian/Alaskan Native, one as Hispanic American, and seven as multiethnic. We randomly assigned participants to either the placebo condition or the control condition, with 37 participants in the placebo condition and 38 in the control condition.

Materials
Participants completed a health history form, a demographic questionnaire, and the short form of the McGill Pain Questionnaire (MPQ; Melzack, 1987). The MPQ includes three subscales: a present pain intensity scale, a visual analogue scale, and a list of pain descriptors. The present pain intensity scale ranges from 0 (no pain) to 5 (excruciating). The visual analogue scale measures pain severity
with the anchors: no pain and worst possible pain. Between the two anchors of the visual analogue scale is a 100-mm line on which the participants make a vertical mark to indicate their pain rating. The third component of the short-form MPQ is a list of pain descriptors. These 15 pain descriptors divide into two subscales: four affective (e.g., fearful, punishing) and 11 sensory (e.g., throbbing, shooting). Each descriptor is given a rating from 1 (none) through 4 (severe) to indicate how accurately each word described the pain experienced.

The experimenter applied the same hand cream to all participants; the cream has been used in prior studies focusing on the placebo effect and pain. It consists of a moisturizing cream with the addition of iodine and oil of thyme (Montgomery & Kirsch, 1996). Although participants in the placebo condition were given the expectation that it would reduce their pain, the cream used in this study was inactive.

**Apparatus**

Systolic blood pressure (SBP), diastolic blood pressure (DBP), and mean arterial pressure (MAP) were measured in millimeters of mercury (mmHg) using a GE Dinamap monitor (Carescape V100, 2008).

**Procedure**

All procedures were reviewed for ethical consideration and approved in advance by the Adrian College Research Committee. Participants completed the study individually. After obtaining informed consent, the experimenter attached a blood pressure cuff to the participant’s nondominant arm. Participants then completed the health history and demographic questionnaire. While answering the questions, they had a 10-min resting period. During this time SBP, DBP, and MAP were measured every 2 min.

To give the researchers the appearance of medical professionals, the experimenter entered the room in a lab coat and used gloves to apply the cream to the participant’s entire dominant hand. The experimenter told participants in the placebo group that the cream was a drug called Trivaricane, stating that “Most people would find this task painful. But your pain will be reduced because of the Trivaricane.” The experimenter told participants in the control group that the cream was a hand cleanser: “I need to make sure your hand is free of dirt and oils. To do this, I need to apply this hand cleanser,” After applying the cream, participants immersed their dominant hand in a container filled with ice and water at 4°C for a maximum of 2 min. The methodology for the cold pressor task was based on its successful use in previous studies (e.g., Bennet & Boehm, 1997; Helfer & McCubbin, 2001). SBP, DBP, and MAP were measured once per minute for the duration of the cold pressor task. If participants asked to withdraw their hand early, the time was recorded. After the cold pressor task, participants completed the MPQ. After completing this questionnaire, the experimenter debriefed participants and thanked them for their participation.

**Results**

Scores for the MPQ present pain intensity scale were the participants’ ratings (0 to 5). Scores for the MPQ visual analogue scales were the measurement of the location of the vertical mark made by the participant on the 100-mm line. For example, a mark at the 55-mm spot on the line would indicate a score of 55. Scores for the sensory subscale were calculated by adding the ratings (1 to 4) assigned to each sensory descriptor by the participant. Scores for the affective subscale were calculated in the same manner. Mean pretask and task readings were calculated for SBP, DBP, and MAP separately. The mean resting readings were the averages of all five pretask measurements. The mean task readings were the averages of two measurements. All participants left their hand in the ice long enough to obtain at least two readings. To determine reactivity, the mean resting measurement was subtracted from the mean task reading for each of the three blood pressure measures (Jennings, Kamarck, Stewart, Eddy, & Johnson, 1992).

Separate 2 (condition: control, placebo) x 2 (sex: male, female) ANOVAs were performed for responses to both subscales of the MPQ; resting SBP, DBP, and MAP; and SBP, DBP, and MAP reactivity. Analyses revealed a main effect of condition on responses to the MPQ sensory subscale, $F(1, 71) = 4.29$, $p = .042$, $\eta^2_p = .06$, with participants in the control group experiencing significantly more severe pain than those in the placebo group (see Table 1 for means). A main effect also existed for sex on resting SBP, $F(1, 71) = 31.98$, $p < .001$, $\eta^2_p = .31$, with men having significantly higher SBP than women during the pretask readings. A main effect of sex on resting MAP also occurred, $F(1, 71) = 9.24$, $p = .003$, $\eta^2_p = .12$, with men having significantly higher MAP than women during the pretask readings. Reactivity to the task (as measured by...
change from baseline) did not differ based on sex or condition.

Correlation analyses were performed between SBP, DBP, MAP, and subscales of the MPQ. Present pain intensity scores were found to be negatively correlated with resting SBP, $r(74) = -.27$, $p = .02$, and with resting MAP, $r(74) = -.25$, $p = .028$. Pain severity was negatively correlated with resting SBP, $r(74) = -.31$, $p = .008$; resting DBP, $r(74) = -.25$, $p = .031$; and resting MAP, $r(74) = -.30$, $p = .010$. The MPQ sensory subscale negatively correlated with resting SBP, $r(74) = -.30$, $p = .008$, and with resting MAP, $r(74) = -.29$, $p = .013$.

The sample was separated into the control condition and the placebo conditions to test whether the relations between SBP, DBP, MAP, and pain persisted in the presence of a placebo expectation. In the control condition, there were negative correlations between pain severity scores and resting SBP, $r(37) = -.32$, $p = .049$; between MPQ sensory scores and resting SBP, $r(37) = -.36$, $p = .025$; and between MPQ and resting MAP, $r(38) = -.40$, $p = .012$. In the placebo condition there were negative correlations between present pain intensity score and resting SBP, $r(36) = -.34$, $p = .041$; between pain severity and resting DBP, $r(36) = -.34$, $p = .041$; and between pain severity and resting MAP, $r(36) = -.35$, $p = .041$.

Fisher’s $z$ test was performed to test for differences between correlations in the two conditions. All $z$s were nonsignificant, $p > .05$—providing evidence that the relation between pain sensitivity and resting SBP, DBP, and MAP was not altered by a placebo expectation.

### Discussion

Consistent with past research (Duschek et al., 2008), the results of this study indicated that individuals with high resting blood pressure were less sensitive to pain than individuals with low resting blood pressure. The results also showed that placebo expectation had an effect on individuals’ perception of pain, using the common laboratory pain task, the cold pressor. When presented with the expectation of pain relief, participants experienced less pain than the participants not given this placebo expectation. Finally, the presentation of a placebo expectation did not affect the relation between individuals’ blood pressure and their pain sensitivity.

Our initial hypothesis was supported; that is, the presentation of a placebo cream, accompanied by an expectation of pain relief, led to reduced pain sensitivity in individuals. The use of a placebo expectation to reduce pain has been successfully demonstrated by numerous previous studies (Wasan et al., 2010; Whalley et al., 2008). In addition, based on both prior research (Helfer & McCubbin, 2001) and the results of our study, there is a distinct negative relation between blood pressure and pain sensitivity. We chose to extend our research to another area of interest: resting blood pressure and pain sensitivity by combining these two areas of research (placebo effect and pain sensitivity; blood pressure and pain sensitivity) to explore a relatively unknown area of study. In this way, we determined that the relation between blood pressure and pain sensitivity is independent of the effects of a placebo expectation.

Based on these results, a variety of inferences can be made about the relation between blood pressure and pain sensitivity. For example, individuals who are hypotensive are extremely
sensitive to pain. In contrast, individuals who are hypertensive are much less sensitive to pain. These results coincide with the research of both Helfer and McCubbin (2001) and Duschek et al. (2008). Despite differences in resting blood pressure, the relation we found between blood pressure and pain sensitivity was not subject to gender differences—the relation was the same for both women and men.

With regard to the relation between the placebo effect and pain sensitivity, the implications are not limited to acute pain. We found that the presentation of a placebo expectation can be an effective means of reducing pain sensitivity in acute pain, but how does the introduction of a placebo analgesic affect chronic pain? Research shows that, similar to acute pain, the introduction of a placebo expectation can effectively reduce chronic pain, such as lower back pain (Charron, Rainville, & Marchand, 2006).

Our findings pertaining to the relations between blood pressure, pain sensitivity, and the placebo effect are central to determining what qualities make individuals placebo responders. However, our data suggest that the presentation of a placebo expectation had no effect on the relation between blood pressure and pain. From these findings, it can be inferred that physiological characteristics, such as blood pressure, are not a component in determining how an individual responds to the presentation of a placebo. The explanation for why some individuals respond to a placebo and others do not is still unknown. In addition, we determined that the relation between blood pressure and pain sensitivity was not altered by situational variables (e.g., experimental setting) or cognitive variables (e.g., expectations).

Although the results of the current study are promising in the area of placebo and pain research, a major procedural limitation did exist. Participation was limited to healthy, undergraduate students enduring temporary acute pain; we were not able to examine the effects on other populations. However, prior research has found that the placebo effect can be an effective means of reducing pain sensitivity in clinical settings involving other demographic groups, including the elderly (Bingel, Colloca & Vase, 2011) and individuals with Parkinson’s (Lidstone et al., 2010).

The results of this study support the hypothesis that participants given the expectation that a cream would reduce pain report less pain than the participants not given this expectation. In the analysis of the relation between blood pressure and pain, we found that the greatest pain was experienced by individuals with lower blood pressure. Furthermore, results indicate that the placebo effect does not change the relation between resting blood pressure and pain. The individual differences between participants in the magnitude of effect caused by the introduction of the placebo expectation are an aspect to be investigated in future research in this area.

References


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PSI CHI JOURNAL OF UNDERGRADUATE RESEARCH
Statistics from the Current Population Survey (CPS) indicate that 70.6% of women between the ages of 45 and 54 were employed in the civilian labor force in 2010 (U.S. Department of Labor, 2010). Over half (56.4%) of women between the ages of 55 and 64 were also employed as of 2010. These percentages may partially reflect changes in national policy regarding social security, the increasing age of retirement, and the current economic climate of the United States. Given the large proportion of women working well into their fifties and even sixties, it is important to evaluate how employment impacts the psychological well-being of women at later ages. One way in which research has studied female employment and psychological distress is through the evaluation of positive and negative spillover between home and work environments (Frone, Russell, & Cooper, 1992; Hanson, Hammer, & Colton, 2006; Pedersen, Minnotte, Kiger, & Mannon, 2009; Stevens, Minnotte, Mannon, & Kiger, 2007). Clearly, employed women often have important caregiving roles in the home in addition to their responsibilities at work. However, past research has typically evaluated positive and negative spillover independently (e.g., Kinnunen, Feldt, Geurts, & Pulkkinen, 2006; Pedersen et al., 2009). In this study, we examined positive and negative spillover simultaneously in order to determine whether these effects might interact in predicting mental health. The existing literature has also focused on women with young children because of the assumption that this population would be most vulnerable to stress from dual roles in the home and at work (e.g., Goodman & Crouter, 2009; Stevens et al., 2007). In the present study we acknowledge the unique caregiving responsibilities of older middle-aged women, some of whom are caring for both elderly parents and adult children (Grundy & Henretta, 2006).

**Overview of Past Research and Theory**

Empirical studies of work-family spillover typically distinguish between the type of spillover (positive or negative) and/or the direction of the spillover (home to work vs. work to home). Negative and positive spillover have not been found to be highly correlated. For example, Greenhaus and Powell (2006) reviewed 15 studies that measured work-family conflict (WFC) and work-family enrichment (WFE) across gender and found relatively low correlations between the two (a mean of 0.02 across
time-based, strain-based, or behavior-based conflict arose between roles. All three of these conflicts fall under the theoretical assumption that work-family conflict can be explained by a theory of role strain in which participation in one role negatively impacts participation in another. Relatedly, the scarcity hypothesis suggests that an individual has a limited amount of time and energy available to engage in roles (Hanson et al., 2006). Schlenker (1987) similarly viewed negative spillover from family to work as a consequence of participation in two roles. The demands of home life interfere with one’s ability to maintain a desirable work-related identity. Schlenker asserted that the failure to maintain such an important identity is a potential threat to psychological well-being. Previous empirical studies have validated such theories (Frone et al., 1992; Schlenker, 1987; Stevens et al., 2007). Although Frone et al. (1992) found that both directions of spillover (home to work and work to home) were strongly associated with domain distress measures correlated with depression in a sample of men and women, negative spillover from home to work was specifically associated with job distress, which was in turn associated with depression.

The existence of positive spillover in the home to work direction is often explained with role enhancement theory. Role enhancement theory states that multiple roles have the potential to be rewarding rather than hazardous to the mental and physical health of both men and women (Barnett & Hyde, 2001). Barnett and Hyde (2001) further hypothesized that certain processes, such as social support, opportunities to experience success, and added income, contribute to the beneficial effects of participating in multiple roles as an adult. Looking at these processes as potential mediators of the relation between spillover and psychological well-being is a widely accepted means of assessing role enhancement (Thoits, 1983). Similar to role enhancement theory, Thoits (1983) hypothesized the existence of “identity accumulation.” This hypothesis suggests that multiple identities are interdependent of one another and actually allow an individual to form overlapping ties to others. Supporting this hypothesis, Thoits found that individuals who possess numerous social positions (e.g., spouse, parent, employee, student, church member) are less distressed than those individuals who are in social isolation.

Empirical research assessing positive spillover has made use of role enhancement theory (Grzywacz & Marks, 2000; Prottas & Hyland, 2011).
Grzywacz and Marks (2000) found that lower positive spillover from family to work was related to less support from spouse and other family members among both men and women. Similarly, Pederson et al. (2009) found that workplace culture and the ability for a woman’s partner to leave work early and care for children was associated with positive home to work spillover. In reviewing the literature it becomes clear that a variety of family-level factors are important determinants of positive home to work spillover (e.g., social support from a spouse) for employed women.

Although negative and positive home to work spillover have typically been evaluated separately and are explained with contrasting theories, it is clearly premature to conclude that individuals experience only one or the other. However, little research has evaluated the coexistence of both in the individual. Research from Hammer, Cullen, Neal, Sinclair, and Shafiro (2005) is one exception. These researchers assessed the simultaneous presence of work-family conflict and positive spillover on depression in a sample of dual-earner couples. They found that positive spillover had a stronger influence on depression than did work-family conflict. However, the question still remains as to whether positive spillover may buffer against the adverse effects of negative spillover on mental health. Hanson et al. (2006) hypothesized that positive spillover may act as a buffer against negative events, implying that positive spillover may buffer against negative spillover. We tested that hypothesis in the present study.

The “sandwich generation.” The phrase “sandwich generation” refers to a cohort of middle-aged adults who serve as “multigenerational caregivers.” Grundy and Henretta (2006) described this population as midlife adults who have at least one parent who is still alive and older children who are possibly still dependent on the adult. Approximately one-third of Grundy and Henretta’s sample (N = 3,543) of middle-aged adults (55–69 years old) reported providing care to both a parent and an older child. In addition, they found that providing care to one or more adult children increased the probability of also giving help to an elderly parent or parent-in-law and vice versa. These probabilities highlight the importance of examining home/family to work spillover and psychological distress in a sample of older middle-aged women who may be caring for multiple generations. Interestingly, Loomis and Booth (1995) did not find a significant association between such caregiving and well-being after controlling for number of hours worked each week. In contrast, Chassin, Macy, Seo, Presson, and Sherman (2010) found that multigenerational caregivers smoked more cigarettes and were less likely to wear a seatbelt and/or buy foods based on their nutritional value in comparison to those who cared for only children or nobody at all. Taken together, these findings imply that the effects of caregiving on well-being may be at least partially dependent on whether (and how much) the caregivers work. The “sandwich generation” is understudied in the current literature on home-work spillover, although they clearly may be particularly vulnerable to experiencing the negative effects of this type of spillover.

The Present Study
Our primary aim was to evaluate the association between positive and negative spillover from home to work in a sample of middle-aged employed women, many of whom were providing multigenerational care. Although the low correlation between positive and negative spillover has promoted their separate examination in the majority of existing research, it is unlikely that an individual experiences only one type of spillover and not the other (Grzywacz & Marks, 2000). It is more likely that some individuals experience both positive and negative spillover on a regular basis. Therefore, we assessed positive and negative spillover simultaneously in the present study. We hypothesized that high positive spillover would be negatively associated with depressive symptoms, whereas high negative spillover would be positively associated with depressive symptoms. We also predicted a significant interaction between positive and negative spillover in which high levels of positive spillover would buffer the adverse effects of negative spillover on psychological distress. Before testing our primary hypotheses, we evaluated descriptive statistics on several caregiving variables to determine if the women in our sample were indeed part of the “sandwich generation,” caring for both aging parents and adult children or were at least providing care to one or the other (and thus providing evidence for the potential explanatory value of role strain theory).

Method
Participants
Data for the present study were taken from the Wisconsin Longitudinal Study (WLS; Hauser
Measures
In order to create the “positive” and “negative” home to work spillover scales, we used a series of variables representing positive and negative home to work spillover. We first recoded variables as necessary such that higher scores indicated more spillover from home to work. The “positive” mean scale that we originally created had an extremely low internal consistency (Cronbach’s α = .28). By removing an item from the scale we were able to maximize the scale’s internal consistency (Cronbach’s α = .55) given the available data. The final “positive” mean scale included two positive spillover items measured on a Likert scale from 1 (strongly disagree) to 5 (strongly agree): “To what extent do you agree that you can do good work on the job because you are so happy at home?” and “To what extent do you agree that you can devote a lot of time to your job because of the support you get on the home front?”

We created the “negative” mean scale (Cronbach’s α = .62) from three negative spillover items addressing home to work spillover (e.g., “To what extent do you agree that family worries or problems distract you from your work?”). The “negative” mean scale items were also measured on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Higher numbers indicated more negative spillover.

These spillover scales served as our primary independent variables of interest. Our dependent variable was depressive symptomatology, which we operationally defined using a modified version of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The questions are the same used for the standard CES-D, but the scoring method differs. The standard method collapses (for each of the 20 items) the number of days respondents experienced a particular event in the past week into < 1, 1–2, 3–4, and 5–7, then codes those categories as 0–3 (respectively) and sums them into a total score from 0–60. In the WLS, respondents indicated (for each of the 20 CES-D items) the actual number of days they experienced the particular event in the past week (0–7 days; e.g., “On how many days during the past week did you feel bothered by things that usually don’t bother you?”). Therefore, the final sum score used in this study ranged from 0 to 140. This modified version of the CES-D had a Cronbach’s α of .78.

We controlled for age, education (in years), and household income by including them as covariates in our final analyses.

For descriptive purposes, we examined whether the participants were providing “instrumental” and “emotional” care separately to parents and adult children. We defined instrumental care as giving help with one, both, or all of the following during the past month: (a) babysitting or childcare; (b) housework, yard work, repairs, or other work around the house; (c) transportation, errands, or shopping. Emotional care was defined by giving help with “advice, encouragement, moral or emotional support” in the past month. After collapsing across the instrumental support categories, we then created the following four dichotomous variables, such that 0 indicated “no care was provided” or “nobody needed care,” and 1 indicated “yes, I provided such care”: (a) provided parent instrumental care; (b) provided child instrumental care; (c) provided parent emotional care; (d) provided child emotional care.

Results
Descriptive Statistics
We assessed the caregiving responsibilities of the women in our sample in order to determine whether they could be considered part of the sandwich generation and/or whether role strain could offer a valid theoretical argument for our predictions. About 91% of the women in our sample indicated that they had one or more children. A quarter (25.5%) of the women in our sample indicated that their father was still alive and more than half (55.8%) indicated that their mother was still alive at the time of data collection. Descriptive statistics revealed that 21.7% (N = 619) of women in our sample reported providing “instrumental” care
to both a parent and a child over 19 years of age. Approximately 62% of those women who reported providing a parent with instrumental care were also giving an adult child instrumental care. Similarly, 21.5% (N = 612) of women in our sample reported providing “emotional” care to both a parent and an adult child. Almost 70% (69.5) of those women who reported providing a parent with emotional care were also giving an older child emotional care. These statistics indicate that the majority of women in the sample were providing some kind of care and many were providing it to both parents and adult children. This finding implies that there was the potential for caregiving burden in our sample, such that this sample of middle-aged employed females may have been particularly vulnerable to home to work spillover. However, because the inclusion of these variables did not alter the results of our analyses, for reasons of parsimony we did not include them as controls.

Table 1 presents additional descriptive statistics. As shown in the table, there were some significant correlations among study variables. Parent instrumental care, \( r(2726) = .09, p < .01, \) and parent emotional care, \( r(2726) = .10, p < .01, \) were both positively associated with negative home to work spillover. There were also positive correlations between parent and child instrumental care, \( r(2847) = .08, p < .01, \) as well as parent and child emotional care, \( r(2847) = .12, p < .01, \) providing further evidence that when a participant in our sample is giving care, she is likely doing so for both a parent and an adult child. Positive home to work spillover was negatively associated with depressive symptoms, \( r(2749) = -0.37, p < .01, \) whereas negative home to work spillover was positively associated with depressive symptoms, \( r(2754) = .26, p < .01. \)

**Hierarchical Regression Analyses**

In order to test our primary hypotheses, we followed generally established procedures (Aiken & West, 1991) and conducted a 2-step hierarchical linear regression, with background variables (age, income, and education) and our home to work spillover (positive and negative) independent variables in the first step and the interaction between the two entered in Step 2 (the spillover variables were centered prior to creating the interaction
term). Table 2 presents our findings from this regression. Analyses indicated both a positive main effect of negative spillover, $\alpha = .17$, $p < .001$, and a negative main effect of positive spillover, $\alpha = -.32$, $p < .001$, on depressive symptomatology (CES-D), as predicted. The change in $R^2$ from Step 1 to Step 2 in our regression was significant, $\Delta R^2 = .165$, $p < .001$, implying that the addition of the interaction term added a significant amount of variance to the model. As such, the interaction between positive and negative home to work spillover on depressive symptomatology was significant, $\alpha = -.11$, $p < .001$. As seen in Figure 1, for individuals “high” on positive spillover (using a median split for illustrative purposes), the detrimental effects of negative spillover on well-being (i.e., increasing depressive symptoms) were not as great as for those individuals “low” on positive spillover. In other words, employed women with high positive, as well as high negative, spillover showed lower levels of depressive symptoms than those individuals with low positive and high negative spillover, as predicted.

**Discussion**

Consistent with our hypotheses, our analysis indicated that positive home to work spillover was associated with lower levels of depressive symptoms, whereas negative home to work spillover was associated with higher levels of depressive symptoms. Also, by examining both positive and negative spillover simultaneously, we were able to uncover a significant interaction between positive and negative home to work spillover predicting depressive symptomatology. Specifically, we found that positive spillover may buffer the detrimental mental health effects of negative spillover. In other words, employed women high on positive spillover were less negatively affected by negative spillover (in terms of depressive symptoms) than women low on positive spillover.

Our findings are in line with both existing theory and research. For instance, as role theory might predict, negative home to work spillover was positively associated with depressive symptoms. Women in our sample who demonstrated high negative spillover also demonstrated higher levels of depressive symptoms, regardless of the presence or absence of positive spillover, demonstrating that pressures from work and home roles may not be compatible with one another (Kinnunen et al., 2006). Furthermore, this finding is consistent with past research showing a correlation between work-family conflict and distress (e.g., Frone et al., 1992). In particular, research has shown that negative spillover from family to work is associated with job distress, which in turn is associated with depression (Frone et al., 1992). Although we did not examine job distress in the present study, examining this variable and other mediators of the link between home to work spillover and mental health is an important avenue for future research.

Our finding that positive home to work spillover was negatively associated with depressive symptoms is consistent with role enhancement...
theory. That is, multiple roles have the potential to be rewarding rather than hazardous to the mental, physical, and relationship health of individuals (Barnett & Hyde, 2001). This situation may be especially true for individuals with family members who support their careers, making positive home to work spillover more likely. Clearly, holding numerous identities does not always lead to conflict or strain (Prootas & Hyland, 2011; Thoits, 1983). Do such results indicate that the effects of positive and negative home to work spillover “cancel each other out”?

Our interaction results point to “no” as the answer to this question. That is, we found an interaction between positive and negative home to work spillover such that employed women high on positive spillover were less negatively affected by negative spillover (in terms of depressive symptoms) than women low on positive spillover. It may be that positive spillover acts as a buffer against negative events (Hanson et al., 2006), and that negative spillover is one such negative event. For instance, stressful interactions with adult children could be mitigated by a supportive spouse, such that the individual is better able to cope with daily stressors in the workplace.

Given that a percentage of women in our sample was caring for both a parent and an adult child, it is also possible that a feeling of “still being needed” gives older middle-aged women a sense of purpose and control that is positively linked with well-being despite the increased stressors and role strain associated with multigenerational caregiving. In fact, providing a child or parent with instrumental care were both positively correlated with negative home to work spillover but not with depressive symptoms (see Table 1). Providing a child and/or parent with emotional care, however, were both negatively associated with depressive symptoms. Taken together, these results imply that certain aspects of caregiving (e.g., emotional care) may provide a sense of closeness and family cohesion that buffers against the negative effects of role strain on depressive symptomatology.

**Limitations and Future Research**

The first major limitation of the present study is the inability to establish cause and effect. Although we controlled for demographic variables, an alternative explanation for our findings is of course possible. For example, it may be that depressed individuals simply report higher levels of negative spillover. The second limitation concerns our inability to measure both directions of work-family spillover (i.e., home to work and work to home). Although the WLS included negative spillover items from work to home, it did not include any items measuring positive spillover from work to home. As such, we were unable to conduct a parallel analysis of work to home spillover in the present study. In addition, the “positive” mean scale we created to assess positive home to work spillover consisted of only two items and had only a moderately high internal consistency. However, in spite of the low reliability of this scale, we still found significant effects both overall and in the interaction.

The third limitation concerns the cohort of women in the present study. Our sample was considerably older than many (perhaps most) women who are employed full-time outside of the home (who may also have young children). The work-family spillover literature is primarily aimed at better understanding this younger population that is trying to balance dual roles in the home and at work. Although the current sample was also strength of the study in that it offered unique insights about an age group that is understudied in the literature (i.e., the sandwich generation), the findings from the present study cannot necessarily be generalized to a younger population.

Future research can improve upon the present study in several ways. One fundamental improvement would be to create “positive” and “negative” mean scales from a wider variety of items that assess both directions of work-family spillover. Although we maximized the internal consistencies for our scales given the existing items in the WLS, future studies would benefit from collecting specific data about positive and negative work-family spillover in both directions. Future researchers may also want to address the number of children or elderly relatives dependent on the individual in more detail. Although including whether our participants were giving care to an older child, parent, or both in our regression analysis did not change our results, it would be interesting to test caregiving as a possible moderator of the relation between work-family spillover and depressive symptomatology in future research.

**Conclusion**

The present study analyzed the association between positive and negative spillover from home to work and depressive symptomatology in employed females by looking at both types of spillover...
simultaneously. Because it is extremely unlikely that an individual experiences only one type of spillover, we used a research approach that allowed us to assess spillover as a multifaceted entity that has complex implications for well-being. By studying the coexistence of negative and positive spillover in the individual, we were able to find that high levels of positive spillover may buffer against the detrimental effects of negative spillover when predicting depressive symptomatology. Our findings also highlight the importance of studying the association of work-family spillover with mental health in older employed women, who might be experiencing strain at home not only from caring for adult children, but also from caring for elderly parents.

References
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### Psi Chi Awards & Grants for Undergraduate Students

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</tbody>
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## Psi Chi Awards & Grants for Graduate Students

<table>
<thead>
<tr>
<th>Name of Award or Grant</th>
<th>Submission Deadline</th>
<th>Award/Grant Amount</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SuperLab Research Grants</td>
<td>October 1</td>
<td>SuperLab software Response pad</td>
<td>Two awards for conducting the best computer-based research.</td>
</tr>
<tr>
<td>Thelma Hunt Research Grants</td>
<td>October 1</td>
<td>Two grants $3,000 each</td>
<td>Enables members to complete empirical research on a question directly related to Psi Chi.</td>
</tr>
<tr>
<td>Graduate Research Grants</td>
<td>November 1</td>
<td>Up to $1,500 each (number varies)</td>
<td>Funding to defray the cost of conducting a research project. Total grant money available is $20,000.</td>
</tr>
<tr>
<td>Mamie Phipps Clark Research Grants</td>
<td>November 1</td>
<td>Up to $1,500 each (number varies)</td>
<td>Funding to defray the cost of conducting a research project focusing on ethnic minorities. Total grant money available is $10,000.</td>
</tr>
<tr>
<td>Regional Research Awards</td>
<td>Deadlines Vary,</td>
<td>$300 each (number varies)</td>
<td>Up to 78 awards presented for the best research papers submitted as Psi Chi posters for the regional conventions.</td>
</tr>
<tr>
<td>Society Annual Convention Research Awards</td>
<td>December 1</td>
<td>$500 each (number varies)</td>
<td>Up to 4 graduate awards presented for the best research papers submitted for APA/APS conventions.</td>
</tr>
<tr>
<td>Regional Travel Grants</td>
<td>Deadlines Vary,</td>
<td>Up to $300 each (number varies)</td>
<td>$3,000 is available per region to assist students with travel expenses to a regional convention.</td>
</tr>
<tr>
<td>Graduate Assistantship Grants</td>
<td>January 1</td>
<td>Eight $3,000 stipends</td>
<td>Provides a stipend to teach and/or conduct research during any semester.</td>
</tr>
<tr>
<td>FBI NCAVC Internship Grants</td>
<td>February 1, June 1</td>
<td>Two grants, up to $7,000 each</td>
<td>14-week unpaid FBI NCAVC internship to conduct research; grant covers living expenses</td>
</tr>
<tr>
<td>Bandura Graduate Research Award</td>
<td>February 1</td>
<td>Travel expense to APS + Plaque + 3 year APS Membership</td>
<td>Student submitting best overall empirical study. Cosponsored by APS.</td>
</tr>
<tr>
<td>Newman Graduate Research Award</td>
<td>February 1</td>
<td>Travel expense to APA + Plaque + 3 year Journal subscription</td>
<td>Student submitting best overall empirical study. Cosponsored by APA.</td>
</tr>
<tr>
<td>Kay Wilson Leadership Award</td>
<td>April 1</td>
<td>One $500 award + Travel to APA + Plaque</td>
<td>Award to one chapter president who demonstrates excellence in the leadership of the local chapter.</td>
</tr>
<tr>
<td>APAGS</td>
<td>Psi Chi Junior Scientist Fellowships</td>
<td>June 30</td>
<td>Four $1,000 fellowships</td>
</tr>
<tr>
<td>Diversity Article Awards</td>
<td>July 1</td>
<td>Four $300 awards</td>
<td>Awards for best Eye on Psi Chi articles published by student authors on diversity issues.</td>
</tr>
</tbody>
</table>
### Psi Chi Awards & Grants for Chapters & Faculty Advisors

<table>
<thead>
<tr>
<th>Name of Award or Grant</th>
<th>Submission Deadline</th>
<th>Who Can Apply</th>
<th>Award/Grant Amount</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thelma Hunt Research Grants</td>
<td>October 1</td>
<td>Faculty</td>
<td>Two grants $3,000 each</td>
<td>Enables members to complete empirical research on a question directly related to Psi Chi.</td>
</tr>
<tr>
<td>Undergraduate Psychology Research Conference Grants</td>
<td>October 1</td>
<td>Sponsor(s) of local and regional conference</td>
<td>Up to $1,000 each (number varies)</td>
<td>Funding to defray cost of sponsoring local/regional undergraduate psychology conferences. Total grant money available is $15,000.</td>
</tr>
<tr>
<td>Mamie Phipps Clark Research Grants</td>
<td>November 1 to February 1</td>
<td>Faculty</td>
<td>Up to $1,500 each (number varies)</td>
<td>Funding to defray the cost of conducting a research project focusing on ethnic minorities. Total grant money available is $10,000.</td>
</tr>
<tr>
<td>Denmark Faculty Advisor Award</td>
<td>December 1</td>
<td>Faculty Advisor (chapter nomination)</td>
<td>Travel expense to APA + Plaque</td>
<td>To one outstanding faculty advisor who best achieves Psi Chi's purpose. Chapter nominates.</td>
</tr>
<tr>
<td>Kay Wilson Officer Team Leadership Award</td>
<td>December 1</td>
<td>Chapter</td>
<td>$2,000 ($1,000 for chapter, $1,000 for officers)</td>
<td>To award the best chapter officer team for exceptional leadership as a group.</td>
</tr>
<tr>
<td>Regional Chapter Awards</td>
<td>December 1</td>
<td>Chapter</td>
<td>Six $500 awards + Plaque</td>
<td>Presented to one chapter in each of six regions that best achieve Psi Chi's purpose.</td>
</tr>
<tr>
<td>Regional Faculty Advisor Awards</td>
<td>December 1</td>
<td>Faculty Advisor (chapter nomination)</td>
<td>Six $500 awards + Plaque</td>
<td>To six outstanding faculty advisors (one per region) who best achieve Psi Chi’s purpose.</td>
</tr>
<tr>
<td>Collaboration Grants</td>
<td>January 20 to June 1</td>
<td>Chapter</td>
<td>Four $500 grants</td>
<td>Provides funds for a Psi Chi chapter and Psi Beta chapter to collaborate on a shared activity.</td>
</tr>
<tr>
<td>Cousins Chapter Award</td>
<td>February 1</td>
<td>Chapter</td>
<td>One $3,500 award + Travel to APA + Plaque</td>
<td>Presented to one chapter that best achieves Psi Chi’s purpose.</td>
</tr>
<tr>
<td>Building Bonds Award</td>
<td>June 1</td>
<td>Chapter</td>
<td>$100 + plaque</td>
<td>To recognize an outstanding collaborative activity hosted jointly by a Psi Chi chapter and Psi Beta chapter.</td>
</tr>
<tr>
<td>Faculty Advisor Research Grants</td>
<td>June 1</td>
<td>Faculty Advisor</td>
<td>Twelve $2,000 grants</td>
<td>Awards for up to 12 faculty advisors to conduct empirical research.</td>
</tr>
<tr>
<td>STP Assessment Resource Grant (Psi Chi faculty member)</td>
<td>June 1</td>
<td>Faculty</td>
<td>Three $2,000 grants</td>
<td>Supports projects to develop assessment tests, instruments, and processes.</td>
</tr>
<tr>
<td>Model Chapter Awards</td>
<td>June 30</td>
<td>Chapter</td>
<td>$100 each chapter</td>
<td>All chapters meeting the five criteria will receive $100.</td>
</tr>
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</table>
Psi Chi Journal of Undergraduate Research Undergoes Exciting Changes

The Psi Chi Journal of Undergraduate Research, Psi Chi’s peer-reviewed journal founded in 1995, recently underwent several changes in order to increase its viability into the future. The Board of Directors made these changes in order to better serve all Psi Chi members, and to increase submissions, readership, and ultimately prestige of the Journal.

- Submission eligibility has been expanded from undergraduate first authors only to graduate student and faculty Psi Chi members as well. Faculty first authors must also have at least one student coauthor.
- Because of this, the name will change to the Psi Chi Journal of Psychological Research.
- The Journal will continue its tradition of being peer-reviewed. Since the Journal’s founding, each submission has been professionally reviewed by doctoral-level psychology faculty.
- These peer-reviewers will judge submissions according to educational level. Undergraduate work will not compete against the work of graduate students and faculty for space in the Journal.
- Journal pages will be increased as needed to accommodate additional graduate student and faculty submissions.
- The Journal’s tradition of mentoring undergraduates through the review, revision, and publication processes will be maintained and extended to graduate students and faculty.
- The Journal will seek to expand its indexing. After a full volume of the Psi Chi Journal of Psychological Research has been printed, the Editor will submit it to PsycINFO in order to request inclusion of it in that database. It was ineligible for consideration when limited to undergraduate authors.
- Psi Chi members will soon be able to submit their manuscripts through an automated online submission and review system similar to that used by many other psychology journals.
- The Board of Directors appointed Dr. Melanie M. Domenech Rodríguez, associate professor of psychology at Utah State University, Editor.

The Psi Chi Board of Directors made these changes in order to better serve all members and to increase submissions, readership, and ultimately, prestige of the Journal.

New submission guidelines are now available on the website at http://www.psichi.org/pubs/journal/submissions.aspx. We invite ALL Psi Chi undergraduates, graduate students, and faculty to submit their research to the NEW Psi Chi Journal of Psychological Research.