

Quantifying the Pervasive: How Widely Held Are Psychological Misconceptions Among Undergraduate Students?

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Abstract

Psychological misconceptions are widely held ideas that contradict current psychological research (Bensley et al., 2020). Belief in such myths contributes to introductory psychology students' overconfidence of their prior knowledge (Bensley et al., 2015), limiting student engagement and comprehension. The present study sought to identify the prevalence and extent of community college students' belief in psychological misconceptions in hopes of guiding educational efforts to combat these notions. Students completed an online questionnaire in a proctored environment (most typically while seated in a computer lab or classroom having Wi-Fi available), in which they were presented 14 myths and asked to label them as true or false. After rating each myth, participants were prompted to rate their confidence in their previous answer. The three main hypotheses were 1) there would be a negative correlation between the number of college psychology courses students completed and their myth belief scores, 2) psychology majors would endorse fewer myths than non-psychology majors, and 3) students who believe psychology is a science would believe in fewer myths. The first two hypotheses were not supported. However, there was a significant correlation identified for the third hypothesis. The generalizability of these findings is limited by a disproportionate number of female participants and a lack of ethnic and age diversity. Future research should replicate this study with a more diverse pool of participants. These findings suggest that instructors design interventions to target myths in the psychology courses they teach.

Keywords: misconception, introductory psychology, myth endorsement

A psychological misconception is a widely held belief that contradicts the most recent psychological research. Even those with advanced degrees in psychology are vulnerable to supporting one or more psychological myths. Misconceptions abound in various fields of psychology, but particular branches that we would like to focus on are

abnormal psychology, forensic psychology, and educational psychology.

In the realm of abnormal psychology, misconceptions can function as barriers to treatment. For instance, Basterfield et. al (2023) highlighted in their literature review that claims about the ineffectiveness of therapy and medication can deter people from seeking treatment and refilling

prescriptions. They also noted that misconceptions about mental illness can perpetuate social stigmas, such as the myth that those with mental disorders are more dangerous than the general population. Moreover, a geropsychology study by Lopez et al. (2020) highlighted that graduate psychology students hold ageist misconceptions about older adults, such as the belief that older adults are not receptive to psychotherapy and the idea that it is too late to provide care for them. This is particularly harmful, as mental illness in the elderly is likely to go unnoticed as a result of their preexisting physical health problems, and ageist biases among practitioners may further exacerbate the number of undiagnosed disorders among this population.

Psychological misconceptions are also problematic in the criminal justice system. Franklin (2022) spotlights the myth that police officers are more accurate eyewitnesses than civilians, as they are believed to possess a better memory and more reliable judgment. This notion is exceptionally flawed, as eyewitness testimony has been repeatedly discredited as unreliable and suggestible. Franklin (2022) also notes that officers may be at risk of misremembering the sources of information and when they learned specific details about a case, as they are often strained for time with investigations. This misconception can produce large errors, such as aspects of crimes remaining uninvestigated in favor of following the leads the officers claim to remember clearly. Placing overreliance in police officers' testimonies may also lead to improper convictions and acquittals. More generally, a study by Shaw and Woodworth (2013) surveying 256 students in an introductory forensic psychology course found that the endorsement of psycho-legal misconceptions is positively correlated with tough-on-crime stances and punitive sentencing decisions. Although one should be wary of generalizing this finding since the participants fell within a similar age range and were all students from the University of Columbia, it raises an important point that misconceptions about crime held by the public

may encourage or perpetuate stricter yet unwarranted policies.

Educational psychology is another branch of psychology impacted by misconceptions. One pervasive myth is that students have a predominant learning style, and that teaching to said learning style enhances learning. Newton (2015) noted that this myth is held by a majority of the teachers surveyed in various countries. This widely held belief is harmful, as it can limit student learning opportunities and potentially discourage students from subjects that they believe require a different learning style. Specifically, students may disengage from their classes if their learning style is not efficiently helping them learn the material.

The pervasive impact of misconceptions on various psychological fields leads to the discussion of two correlates to holding these misconceptions. The first variable is the strength of one's critical thinking skills, though there is conflicting research on this subject. In their study of introductory psychology students, Kowalski and Taylor (2004) found that critical thinking skills are not correlated with students' pre-existing belief in psychological misconceptions at the beginning of the semester. However, improving critical thinking skills successfully predicted change in these beliefs over the course of the semester. In contrast, Basterfield et al. (2023) found that introductory psychology students who believed in greater numbers of psychological myths also had weaker critical thinking skills. Basterfield et al. (2023) do not note at which point in the semester the survey was administered, so it is possible that an interaction effect occurred between the students' critical thinking skills and the course material.

Another variable in question is whether the number of psychology courses taken affects one's belief in these myths. Redifer and Jackola's (2022) study on misconceptions about neuroscience found that even students who had taken eight or more psychology courses were susceptible to such myths. While there were some myths that this group endorsed less, there were others that they

endorsed more strongly. However, since this study exclusively focused on neuroscience, it is possible that the number of psychology courses taken is more impactful on dispelling myths in other branches of psychology.

Given the pervasiveness of such myths, we sought to investigate how widely held psychological misconceptions are among undergraduate students by administering an online questionnaire. There were three main hypotheses: there would be a negative correlation between the number of psychology courses taken and myth belief scores, psychology majors would endorse fewer myths than non-psychology majors, students who believe psychology is a science would believe in fewer myths.

Method

Participants

All participants were part of the annual Psi Beta National Research Study, which aggregated participants from various chapters of Psi Beta, a psychology honors society for community college students, into a single database. After cleaning the data, there were 974 participants recruited through participating Psi Beta chapters, with a mean age of 22 and a mode age of 18. The majority of participants fell between the ages of 18 to 30, with the age groups 18, 19, and 20 having the highest frequency of participants. Three hundred and thirty-two participants identified as male, 588 participants as female, and 42 participants identified as non-binary, transgender, or genderfluid. Most participants identified as middle class or working class, though many participants chose not to respond to this question or selected “other.” Finally, 41.5% of participants identified as White/European American, 26% identified as Hispanic/Latino, and 11.8% identified as Asian/Asian American.

Materials

The online questionnaire assessed the extent of students’ beliefs in psychological misconceptions and looked for correlations with such beliefs. Participants were exposed to 14 misconceptions drawn from Bensley and Lilienfield (2015), Furnham and Hughes (2014), and Gaze (2014),

along with two distractor items. They were asked to identify whether they thought a particular statement was true or false and then rate their confidence in their previous answer on a 7-point Likert scale. Students also responded to the Psychology as Science Scale, a 20-item assessment that measured whether participants consider psychology a science, as chemistry is. For instance, participants were assessed on the importance of experimentation in psychology and whether the field deserves funding for research (Friedrich, 1996). Finally, students were asked to report how many college psychology courses they had completed, their major, gender, age, ethnicity, and other information such as their religiosity and whether they were members of an honors program.

Along with measuring the number of misconceptions participants believed in, a myth confidence scale was computed, which measured participants’ accuracy in judging the 14 myths. If participants correctly labeled a myth as false, they received a 1, which was then multiplied by how confident they felt in their answer on a 7-point Likert scale. If they labeled a myth as true, they received a 0. Their confidence in each accurate answer was then summed for all 14 misconceptions to form the myth confidence measure.

Procedure

Upon receiving IRB approval, the questionnaire was administered in-person to Irvine Valley College psychology students and students from other participating Psi Beta chapters. Participants were recruited through psychology courses and incentivized with extra credit to complete the questionnaire. The research questionnaire was administered during multiple sessions from November 9th, 2022, to January 15th, 2023. When signing up for the study, participants were able to select from several different days to complete the questionnaire in the designated lab room. The Irvine Valley College students were also asked to provide their name, student ID, student email, phone number, Discord user tag if applicable, the name of their professor, and the section ID of their course. Their contact

information was required so they could receive reminders about the session they selected, which they were informed about on the sign-up form. The section ID of their course was requested so that professors could more efficiently give extra credit to students in different sections who participated in the study. Participants completed the questionnaire on a computer in a controlled space to maintain participant focus and prevent participants from looking up answers to questions online. When participants arrived at the survey setting, they were checked in and emailed the questionnaire. Checking in students was necessary to ensure that they could receive extra credit for their participation, as the questionnaire itself did not ask for information such as student IDs or course information. Otherwise, participant data would remain confidential. Before the questionnaire began, each participant read and completed an informed consent statement. They were told that they have the right to skip questions, that they may withdraw from the experiment at any point, and that their confidentiality would be maintained. At the end of data collection, a debrief email was sent to each participant. The debriefing email described the purpose of the study, how psychological myths impact daily lives, and the list of myths the participants were exposed to, as well as explanations for why each misconception is inaccurate. Contact information for the principal investigator was included in case any participant had questions. Lastly, participants were provided with links to scholarly articles in case they were interested in learning more about the topic.

Results

There was no significant correlation between the number of psychology courses taken and the number of myths endorsed, $r(955) = -.01, p = .765$. There was also no statistically significant difference between psychology majors, non-psychology majors, and social and behavioral science majors as determined by a one-way ANOVA, $F(2,970) = 2.13, p = .119$. Lastly, there was a negative correlation between belief in psychology as a science and myth endorsement, $r(971) = -.16, p < .001$.

There was also a positive correlation between the number of psychology courses taken and belief in psychology as a science, $r(955) = .085, p = .008$ and a negative correlation between membership in an honors society and myth endorsement $r(971) = -.101, p = .002$. There was no significant correlation between myth endorsement and age, or between confidence in myth belief and age.

Discussion

The first hypothesis, that there would be a negative correlation between the number of college psychology courses taken and myth endorsement, was not supported. The second hypothesis, that psychology majors would endorse fewer myths than students with different majors, was also not supported. However, the third hypothesis, that there would be a negative correlation between belief in psychology as a science and myth endorsement, was supported.

The absence of a significant correlation between higher-level education and low myth endorsement has been supported in past research. As noted by Newton (2015), teachers endorse the myth that matching one's teaching style to students' learning styles improves academic outcome. Given that teachers have more experience and education than undergraduate students, it was interesting to find that many supported such a myth. Although the present study surveyed a different population, these findings reveal that continued education alone cannot prevent belief in psychological myths. The weak correlation between psychology courses taken and myth endorsement aligns with the findings of Redifer and Jackola (2022). The present study focused on a larger general population of psychology students rather than teachers or students of specific subcategories of the psychology major.

The failure to find a significant negative correlation between the number of psychology courses taken and myth belief scores, or a significant difference between psychology majors and others in their myth endorsement, highlights that psychology students also struggle to identify myths.

Students may have learned these myths earlier in their education (Redifer & Jackola, 2022), which can explain why many accept such claims as factual. A solution would be to actively point out misconceptions in college psychology courses and refute them with scholarly articles and other credible media sources.

This negative correlation between belief in psychology as a science and myth endorsement is encouraging as it points to possible ways to counter the issues that belief in psychological myths can cause. In addition, because the p value was so small, the likelihood that this result is a matter of chance is lower than 1%. Psychology curriculum often saves the teaching of significant results for statistics courses, despite how fundamental such knowledge is for determining the soundness and implications of psychological research. Accordingly, emphasis on the more technical and statistical nature of psychology, both in a classroom environment and even in media sources, may help to strengthen the belief that psychology is a science. Although no direct causal element was found in this study, if the correlation holds, this action could be helpful in reducing belief in these psychology myths.

Psychologists can also create methods for ensuring that educators, both in psychology and in other disciplines, stay informed. For instance, it is vital to collaborate with teacher certification programs to add current psychological research to teacher-training curriculum. Another possibility is to introduce psychologist-led nationwide K-12 teachers in-services that highlight the latest research and dispel educational myths. Finally, it would be helpful to create an APA committee to look for and refute psychological misinformation in current media and popular educational texts. Given the harmful effects of believing psychological myths, it is beneficial for educators to have increased accessibility to the latest research. Through the awareness of educators, students will avoid engaging in behaviors and ideas that hinder success

and improved well-being (Redifer & Jackola, 2022).

For future research, a more diverse sample would provide greater insight on the factors that affect myth endorsement, given the study's limited generalizability due to the lack of ethnic diversity, socioeconomic diversity, and the disproportionate number of female participants. Finally, we encourage future research to investigate the precise factors that characterize honors students and their lower myth endorsement. It is possible that honors students may have stronger critical thinking skills, as honors courses are often research-based.

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