

Acknowledging Impostor Phenomenon:

How Does It Affect an Individual's Likeability?

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Abstract

The impostor phenomenon (IP) is the feeling of being an intellectual fraud regardless of any external evidence of incompetency. Research on the effects of IP on mental health is important in understanding how to nurture positive experiences through the duration of undergraduate life. However, the social interactions of individuals who experience IP are not well understood. We surveyed Rice undergraduates to understand how the disclosure of feelings of impostor might affect how an participant might perceive the individual. We analyzed how a hypothetical individual's disclosure (N=148) or non-disclosure (N=144) of feelings of IP and participant's own feelings of IP affect how participants rate the individual in likeability. Results indicated no strong effect of participant's own IP on the likeability rating of the hypothetical individual. However, additional findings suggest that many Rice students experience some level of IP. These findings suggest that IP is an issue that deserves attention on how it affects the undergraduate life and research on methods for reducing the level of IP that students experience.

A Look into the Impostor Phenomenon

Across the United States, many undergraduates of various disciplines and majors experience impostor phenomenon (IP) which is the feeling of being an intellectual fraud regardless of any external evidence of incompetency (Clance & Imes, 1978). Examples of IP exists across Rice University and are reflected in Facebook groups such as “Rice University Places I’ve Cried.” Members of the Rice community have stepped up to share their insecurities, frustrations, and hardships. Students have expressed that they feel intimidated by their peers’ achievements and have also expressed feelings of doubt about how they got into Rice. Revealing one’s vulnerability in such groups has encouraged others to share their experiences and has provided a large support network for these students. We sought to understand how an individual’s own feelings of impostor phenomenon affects how they might perceive others in similar situations.

Online platforms may be a place that undergraduate students are comfortable with sharing their feelings and insecurities. Places like Facebook allow individuals to share their experience. There are possible benefits in sharing experiences in a group setting. When in a group setting, individuals with feelings of IP may realize that they are not alone and may reevaluate their belief systems when learning of another individual’s experience. (Clance & Imes, 1978). It is important to note that individuals who experience feelings of impostor are more likely to be introverts and will be less likely to feel comfortable sharing their experiences and feelings with a large virtual audience (Clance & Imes, 1978).

The support from Rice University's community for individuals that share their experiences and feelings of impostor suggest that revealing insecurities may benefit the individual in gathering a support network. Previous studies have shown that disclosing one's vulnerabilities can benefit the individual in reciprocity and likeability (Archer & Burleson, 1980; Hebl & Skorinko, 2005). In addition, individuals with similar experiences tend to have higher likeability ratings (Youyou et al., 2017) and would be more willing to be a source of support for individuals who experience feelings of impostor. This may help with developing methods for universities and counselors to help reduce the level of IP that individuals may feel throughout their experience at university.

Based on previous research, we developed a study that would focus on understanding the relationship between likeability, the disclosure of IP, and the participant's own levels of IP. We predict that the likeability of an individual who discloses feelings of the impostor phenomenon in a provided scenario will depend on the participant's own level of IP. We will examine the interactions between the participant's impostor phenomenon level and their perception of an individual who has disclosed or not disclosed feelings of impostor.

The impostor phenomenon is correlated with anxiety, depression, neuroticisms, and have shown to be a predictor of student's mental health (Parkman, 2016). Students of minority groups are more likely to experience feelings of impostor in university (Cokely et al., 2017). This demonstrates the importance of addressing the issue of impostor phenomenon among university students. Continued research on programming methods to change an individual's perception of their constructed belief system will benefit high-education institutions in providing a welcoming environment for students.

Methods

Participants

A total of 382 participants were recruited via Experimentrix and through social media posts on Facebook groups and direct message. The survey opened on October 22nd, 2018 at 11:00 a.m. and closed on November 12th, 2018 at 12:00 p.m. Participants were undergraduate Rice students. Students taking psychology classes were compensated with 0.5 class credits. A total of 381 participants took the survey. Of these participants, 95 had to be excluded for either failing to complete the survey, having too much time elapsed between reading the scenario and answering the questionnaires, or having outlying scores on the IP scale. A total of 286 participants were used for data analysis. Of the final 286 participants, 181 were female, 104 were male, and 1 preferred not to respond.

Materials

The survey was conducted through Qualtrics and data was recorded on the Qualtrics platform. Participants accessed the survey link through Experimentrix, Facebook groups, and direct Facebook messages. At the end of the survey collection period, the results from the survey were downloaded onto Microsoft Excel for data cleaning and then analyzed in SPSS. Students were randomly assigned to a scenario using Qualtrics' "randomizer" feature in survey flow. This feature evenly presents the scenario so that each scenario has a similar number of participants. In addition, all questions were forced responses so participants could not proceed

without answering all the questions. Participant's grade-point-average (GPA) was not a forced response.

In the non-disclosure scenario, where the individual in the scenario does not disclose any feelings of impostor phenomenon, participants were given a passage to read that described an individual. The passage was written in first person and embodied the average Rice student.

Participants who received the disclosure-scenario read the following passage:

"I am a 19 year old sophomore student living on-campus studying Biochemistry and Cell Biology. The Biochem major is definitely a challenging path, but I have had a lot of fun with my classes and I find them mentally stimulating. I am currently taking 18 credit hours of mainly STEM classes and I spend about 4 hours a day doing class work. Most of the time I think that I am able to stay on top of my work enough to hang out with friends. In addition, I am also looking forward to participating in research with my professor at the BRC next year. I was the editor in chief of my high school newspaper, so I applied and was selected to be an op-ed editor for the Rice Thresher newspaper. I really love my residential college, and I express my spirit for my college through biking for the beer bike team. I was also selected to be an advisor this past O-Week, and I really love my freshmen. During my free time, I really enjoy hanging out with my friends. Usually, my friends and I go off campus to eat dinner on Saturday nights, and sometimes go to publics on the weekends. Other than that, I just enjoy spending time with my friends, whether that be in our suite or watching our favorite TV shows together."

In the disclosure scenario, where the individual in the scenario discloses feelings of impostor phenomenon, participants were given a similar passage as the non-disclosure scenario to read that described an individual. The passage was written in first person and embodied the

average Rice student but also included four sentences that hint at feelings of impostor.

Participants who received the disclosure-scenario had the addition of the following sentences:

“However, sometimes I feel that I am not performing up to the Rice standard because everyone around me seems to be super relaxed while I stress about my next midterm.”

“Even with this work load, I still question whether I am doing enough to be seen as on the same level as other Rice students.”

“...but I’m still not sure why I was chosen for such an important position.”

“...however, sometimes, I feel like I can’t contribute to their conversation.”

Across both scenarios, the basic profile description of the individual remained the same.

The individual had the same age, major, course credit load, and the same extracurricular activities. Presentation across each scenario was the same.

Design

For this study, the independent variables were the presented scenario and the participant’s personal IP level. There are two levels in the presented scenario; the first is the non-disclosure of feelings of IP, and the second is the disclosure of feelings of IP. Participant’s personal IP level has three levels (Clance, 1985). The first is “low” levels of IP; the second is “moderate” levels of IP; and the third is “high” levels of IP. An initial univariate 2x3 between-subjects factorial ANOVA was conducted on disclosure/non-disclosure and personal IP levels; the “absence” IP level was excluded from analysis due to insufficient data. The dependent variable is the likeability rating of the individual in the presented scenario using the Reysen Likability Scale (Reysen, 2005). Additional independent t-tests were conducted to determine the relationship between gender and both IP level and likeability score.

Procedure

Once participants accessed the link, they read an informed consent form that briefed them on the purpose of the study. Participants had to acknowledge that they were at least 18 years of age before proceeding with the experiment. Participants who were not 18 years of age were immediately taken to the end of the survey. Participants took the survey on their own devices and at their own pace.

Participants were randomly assigned to read either the non-disclosure scenario or the disclosure scenario. After data cleaning, a total of 144 participants received the non-disclosure scenario, where the individual in the scenario does not disclose feelings of impostor phenomenon. A total of 148 participants received the disclosure scenario, where the individual does disclose feelings of impostor phenomenon. Participants were given 35 seconds before they could proceed to the follow questions in order to ensure that they had read the passage thoroughly.

Once participants had read the passage, they were taken to the next page to fill out a Reysen Likeability Scale (Reysen, 2005) in reference to the individual in the scenario. This measure was used to determine the perceived likeability of the individual in the provided scenario. This includes 11 questions on a 7-point Likert scale, for a maximum possible score of 77.

After filling out the Reysen Likability scale, the next page asked participants to respond to a manipulation check, which asked participants “How often do [they] think this person worries about being inadequate?” Answers choices were given using a 5-point Likert scale. Participants were also asked if the individual likely identified as male or female. This question sought to

understand what gender the participant thought the individual was since the profile description was gender ambiguous.

On the next page, participants filled out the Clance Impostor Phenomenon Test (Clance, 1985) in reference to themselves. This includes 20 questions on a 5-point Likert scale, for a maximum possible score of 100. These questions sought to categorize participant's own feelings of impostor phenomenon. Results were separated into four levels: a score of 0-40 constituted the absence of IP, 41-60 was a low level of IP, 61-80 was a moderate level of IP, and 81-100 was a high level of IP. After the Clance Impostor Phenomenon Test, demographic data were collected, including gender, race, year, school of study, current credit hours, and current GPA. Upon completion of the survey, students were thanked for their participation and their responses were recorded in Qualtrics.

Results

A 2x3 ANOVA revealed that there was no significant main effect of disclosure, $F(1, 292)=.508, p=.477, \eta^2=.002$. The individual's disclosure ($M=50.95$) or non-disclosure ($M=52.74$) of IP did not impact their likeability. There was no significant main effect of the participant's IP level, $F(2, 292)=2.335, p=.074, \eta^2=.024$. As shown in Figure 1, the individual's likeability was not significantly different across low ($M=51.52$), medium ($M=51.36$), and high ($M=53.91$) levels of IP. The interaction between disclosure and IP level was not significant, $F(2, 292)=.311, p=.817, \eta^2=.003$. The effect of disclosure on likeability was not dependent on personal IP level.

Two independent t-tests showed that gender has a significant effect on both personal IP level and likeability score given. Women had significantly higher IP scores ($M=70.07$) than men ($M=62.68$), $t(283)=4.63, p<.01, 95\% \text{ CI } [4.25, 10.54]$. Women also gave significantly higher likeability scores ($M=52.88$) than men ($M=50.3$), $t(283)=2.96, p<.01, 95\% \text{ CI } [.86, 4.3]$.

Another notable finding, although difficult to statistically analyze, was that women were much more likely to assume the individual in the scenario is female. Of the participants, 76.2% of women said the individual was female, compared to 57.7% of men. In total, only 30.5% of participants said the individual was male. Finally, a bell curve distribution was found in the responses to our manipulation check, "How often do you think this person worries about being inadequate," in the non-disclosure condition. In the disclosure condition, 87.1% of participants said "almost always" or "often;" however, in the non-disclosure condition, only 24.1% of participants said "rarely" or "almost never."

Discussion

We developed a study that would focus on understanding the relationship between likeability, the disclosure of IP, and the participant's own levels of IP. Although there was no significant effect of participant's level of IP on the likability rating of an individual, our additional findings provide insight to the narrative of IP for Rice University undergraduates.

Findings

From our analysis, we found that females on average gave higher likability ratings to the individuals than males did in both disclosure and non-disclosure scenario. This finding highlights how women are more agreeable and are socially more courteous and community-oriented than their male counterparts (Weisberg et al., 2011). Along with the fact that women are more likely to exhibit feelings of IP, this demonstrates how women are more likely to support others who are also experiencing feelings of IP (Clance & Imes, 1978; Youyou et al., 2017). Women at Rice are more likely to step up and express their feelings of impostor as well as support others. We also found that most of the participants assumed female as the gender of the individual in the both disclosure and non-disclosure scenario. This can be attributed to the fact that majority of the participants were female, but may also suggest that there were issues with our independent variable when we were constructing the profile for the hypothetical average Rice student. When cleaning the data, only five participants rated as having no levels of IP. It is important to note that all of the participants who had no levels of IP were male. This is contrary to some studies that suggest men experience greater feelings of IP (Badawy et al. 2018). However, since we were not able to include these in our analysis, further research is necessary. In addition, most of our

participants fell into either low, medium, or high levels of feelings of IP. This suggest that undergraduates at Rice tend to experience some level of IP. This is also demonstrated in the manipulation check for the non-disclosure scenario. Despite not having any indication of feelings of IP in the non-disclosure scenario, many participants indicated that the hypothetical Rice individual experiences some degree of IP. This could either mean that many students perceive that the “average Rice undergraduate” experiences IP or that the profile that we constructed was not robust enough.

Limitations

Although we sought to discover a relationship between likeability and feelings IP for undergraduates at Rice, we were unable to identify the mechanism in which IP influences likeability. Additionally, majority of the analyzed data were from female participants (N=181) compared to male (N=104). This may affect the likeability ratings and the participant’s own rating of IP. While we sought to create a profile of an average Rice student so that participant’s could formulate an opinion on likability, this method is insufficient as people do not form opinions of others in real-life through reading a description. There is usually a face to match the description, as in online profile, and there is usually some form of interaction for individuals to determine if they “like” someone. In the future, we would like to further develop the scenarios to make it personable and interactive. We would also like to take time to analyze other demographic information that was collected at the end of the survey to see how these variables interact with feelings of impostor and likeability.

Strengths

Our major strengths include our sample size during data collection. This gives our study some degree of power and validity when performing data analysis and drawing conclusions. In addition, we think that this study has strong external validity for the Rice community as students do appear to experience feelings of IP. Understanding Rice undergraduates' feeling of IP can help Rice develop the programs and gather the necessary resources to address this prevalent undergraduate issue.

Conclusion

We studied how the disclosure of IP and the participant's own levels of IP affect an individual's likeability. Although we did not find any significant relationships within these variables, we discovered other interesting findings that contribute to the narrative of IP here for Rice University undergraduates. Females tend to provide higher likability ratings, females were the assumed gender of the individual in the non-disclosure and disclosure scenario, and respondents rated the hypothetical average Rice undergraduate in the non-disclosure scenario as having some level of feelings of insecurity. As research on IP continues, we hope that our research is the start of exploring the effects of IP on social interactions and how that might play into developing programs to combat the prevalence of feelings of IP among undergraduates.

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Appendix

Figure 1. Mean of likeability ratings for individual in disclosed and non-disclosure scenario based on participant's impostor phenomenon level.

