ALAINA THOMAS, NICOLE MAINA, STACY CHIU,
CHRISTOPHER LEE–KWONG, & KATIE LIU

The Power of Education

Comparing implicit stigma toward mental health care in Psychology and non–Psychology students

Fewer than a third of people living with mental health problems reach out for professional help, which could be due, in part, to negative stigma toward mental health issues. Typically, stigmatization toward any issue decreases as individuals gain more familiarity and knowledge about them. In this study, we measured whether students studying psychology have less implicit negative bias toward seeking psychological care. We adapted the Implicit Association Test (IAT) to evaluate how psychology and non-psychology students react to stereotypes against seeking out psychological care. Specifically, we measured and compared how easily these students classify words related to personality traits and to activities within stereotyped categories (i.e., care-seeking activities coupled with negative traits such as counselling-antisocial) and within non-stereotyped categories (i.e., care-seeking activities coupled with positive traits such as counselling-sociable). As expected, all students were faster at classifying items within the stereotype-congruent category. However, psychology students were not as affected by the stereotype non-congruent category: pairing positive attributes to care-seeking activities did not slow psychology students as much. These results suggest that exposure to psychology courses contributes to reducing implicit biases against mental health care. It is hoped that the 2020 Covid-19 pandemic will promote awareness about mental health issues, which in turn will decrease negative stigma toward mental health care.

Global mental health concerns have risen over 13% in the last decade, with depression being the most common form of disability, and suicide, the second leading cause of death among 15- to 29-year-olds (World Health Organization, 2020); however, these concerns have reached new heights during the worldwide Covid-19 pandemic as people struggle with added financial, social, and health burdens (Douglas, 2020; "Pandemic impacting young people in Ontario," 2020). Access to psychological support is needed now more than ever; unfortunately, barriers such as stigma deter individuals from seeking out mental health care (Corrigan, 2014). As the prevalence of mental illness increases, strategies to combat stigma are crucial (World Health Organization, 2020). Exposure, in the form of contact and education, has been shown to reduce negative stereotypes and biases such as stigma (O'Brien et al., 2010; Rudman et al., 2001). The goal of the current study is to determine whether a degree in psychology influences students' implicit attitudes toward treatment seeking.

Despite evidence showing that counselling and other forms of psychotherapy help manage psychological issues, fewer than one third of people with mental illness seek treatment (Corrigan, 2014; Maranzan, 2016). Factors that have been identified as barriers to obtaining help include a lack of access to services, high cost, cultural and language differences, and stigma (Moroz et al., 2020). Stigma is defined as a negative social attitude or stereotype applied to an individual, based on a perceivable social, mental, or physical deficiency (APA Dictionary of Psychology, n.d). It is one of the most common deterrents to psychological treatment (Clement et al., 2015). Specifically, amongst men, ethnic minorities, military personnel, and health professionals, stigma is ranked as one of the top five barriers to seeking help (Corrigan, 2014). There are both private and public experiences of stigma. The private experience of stigma is expressed through stereotypes and prejudice. Stereotypes are beliefs acquired in our upbringing; for example, one may believe that, say, individuals with schizophrenia are aggressive. Prejudice is the act of agreeing with a stereotype. It provokes an evaluative and emotional response, such as being concerned about one's safety when around someone with schizophrenia. Discrimination is the public manifestation of stigma that results from stereotypes and prejudice. For example, invitations to social gatherings may not be sent as often to individuals with schizophrenia (Corrigan, 2014).

Private and public stigma both impact individuals' personal attitudes toward seeking out mental health care. Public stigma against mental health leads to label avoidance and/or internalizing (self-stigma). Label avoidance occurs when an individual perceives public discrimination against those with mental illness and avoids treatment for fear of being labelled. Self-stigma results in lowered self-esteem and self-efficacy. Accordingly, public stigma elicits a "why try effect": a person avoids seeking treatment because they believe they lack the skills or worthiness to participate (Corrigan, 2014). Although most individuals do not explicitly notice the

influence of stigma on their behaviours and judgments, their conduct may still be implicitly biased. This "implicit stigma" phenomenon is well researched and documented by Banaji and colleagues (see the Project Implicit website or Banaji and Greenwald's 2016 book for a summary). For example, a 2018 study by Chiu et al. found that university students implicitly associate care-seeking activities (e.g., therapy) with negative personal attributes (e.g., lazy).

Greenwald, Banaji, and colleagues' well-researched studies of how stigma influences implicit (rather than explicit) attitudes is instrumental. Explicit attitudes are deliberately believed or talked about, while an implicit attitude occurs outside conscious awareness and is non-deliberate (Stull et al., 2013). For example, a person may say, and truly believe, that depression is like any other physical illness (explicit attitude), but their openness toward treating depression may differ from how they would treat a physical ailment (implicit attitude). Detecting associations that individuals would not openly endorse or express is crucial to fully understand stigma.

Exposure, in the form of contact and education, reduces stigma and negative biases (O'Brien et al., 2010; Rudman et al., 2001). In one study, Rudman et al. (2001) examined the influence of education on non-Black college students' perceptions of African-Americans. Students from diverse ethnicities were asked to participate in a 14-week seminar on prejudice and conflict taught by a Black professor. It was found that teachings on anti-Black racism by an educated person of colour reduced non-Black students' implicit and explicit stigma toward African-Americans. These findings have been replicated in other areas of research, including research on anti-obesity prejudice (O'Brien et al., 2010).

Thus, familiarity with psychological issues and treatment may reduce individuals' associated stigma. Mental health literacy, which represents one's knowledge of mental health conditions and where to seek professional help, is correlated with positive attitudes toward help seeking (Cheng et al., 2018). University psychology courses promote mental health literacy through knowledge and exposure-based strategies (Maranzan, 2016). Given this evidence, psychology students who are educated on the realities of mental illnesses and treatment should have less negative stigma toward care seeking than other students who were not exposed to these concepts. While it makes sense that psychology students should have less *explicit* bias toward mental health-related topics, it is currently unknown whether they have a less *implicit* bias. The current study, described below, may be the first to empirically address this question. Specifically, this study aims to determine whether education in psychology reduces negative implicit attitudes toward care seeking. The implicit association between psychological care activities and personal attributes was measured and compared between psychology and non-psychology students. The Implicit Associations Test (IAT; first designed by Greenwald, McGhee and Schwartz [1998], and well established by Banaji, Greenwald, and colleagues) was used to measure the time that it takes to classify negative and positive personal attributes, as

well as care seeking and daily living activities into *stereotype-congruent* and *stereotype-incongruent* categories. The stereotype-congruent category refers to pairings of items that are in alignment with stigma; in this case, negative attributes are paired with mental health care. The stereotype-incongruent category refers to pairings of items that are not in alignment with stigma; positive attributes are thus paired with mental health care. Typically, when using the IAT, participants are faster at classifying words into the categories that fit our stigma. As such, psychology and non-psychology students' reaction time (RT) at classifying words within the stigma-congruent and incongruent categories was compared.

METHODS
Participants
Twenty-nine psychology students and 29 age- and gender-matched non-psychology students participated in the study. All students were from York University in Toronto, Canada. Psychology students needed to have at least 18 university credits in psychology to participate (equivalent to a full year of psychology education); 25 women and four men (mean age=20.35, SD=1.47) volunteered.[1] The non-psychology students were matched to those in psychology; they had at least 18 university credits (but none in the field of psychology) and the same gender distribution (25 women and four men), and were of similar age (mean age=20.41, SD=1.50). All participants provided informed consent. The study was approved by the Delegated Research Ethics Review Committee of the Psychology Department at York University's Glendon College.

Procedure and Materials
The website TELLab (a free, online platform for designing empirical behavioural studies; Nakayama et al., 2015) was used to modify the Implicit Association Test (IAT). The IAT measures how fast (reaction time in msec) participants classify words into categories congruent with stigma (i.e., negative attributes paired with mental health care). Furthermore, the IAT compares how fast participants classify words into categories incongruent with stigma (i.e., positive attributes paired with mental health care). The IAT was accessed via the TELLab open-access website here: http://lab.tellab.org/show/paradigm/iat/5bbbcc4a71a894c407e1c756. After giving their informed consent, participants completed the test in a quiet space on campus,

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[1] The number of women is larger than that of men in our sample; this imbalance represents the psychology student population in North America. To this day, more women choose to take psychology courses than men (Trusz, 2020). To ensure that the only difference between the psychology and non-psychology students was their field of study (not gender or age difference), the group representing the non-psychology students had to be matched in age and gender distribution. This issue is addressed in the discussion section.

accompanied by the researcher so that questions or concerns could be addressed and TELLab used without difficulty.

The IAT was constructed using words representing the categories for mental health care, daily-living activities, and positive and negative personality attributes. These terms were chosen based on the literature on stigma against psychological care and on the results of a pre-test in which four authors associated each word with one category. Only words that were unanimously paired with the same category were chosen. The terms chosen to represent health care-seeking activities were: counselling, talk therapy, psychotherapy, psychiatric help, support groups, and psychological advice. The words chosen for daily living activities were: shopping, socializing, commuting, entertaining, grooming, and cooking. Words signifying positive attributes were: confident, trustworthy, sociable, cheerful, competent, and friendly. The words chosen to represent negative attributes were: nervous, undependable, antisocial, sad, powerless, and awkward. These 24 words were used to construct the IAT (see Figure 1).

Figure 1. The Implicit Association Task (IAT, Modified)
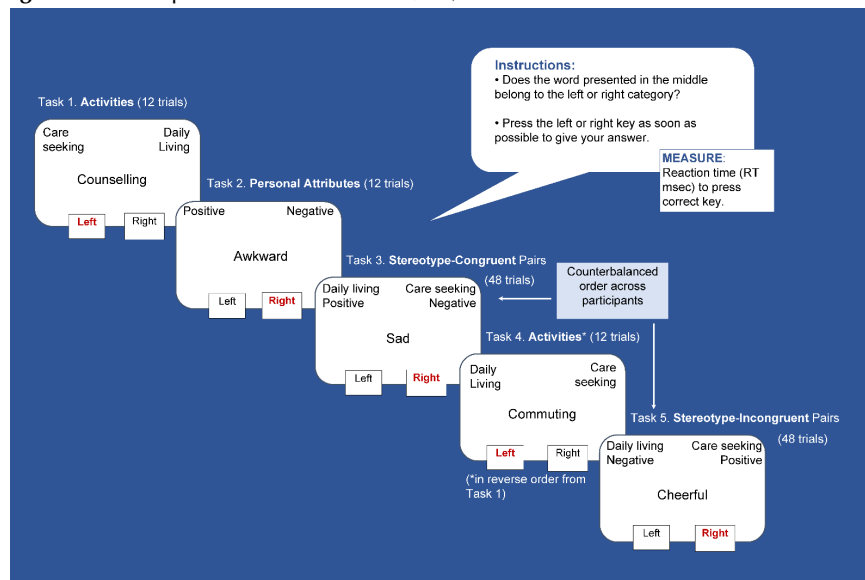
Note. Figure 1 is a schematic illustration of the modified IAT. Tasks 3 and 5 included a total of 48 trials: each word in all categories was presented twice (six words related to negative attributes and six to positive attributes, as well as six words related to care-seeking activities and six to daily-living activities).

The IAT includes five tasks in total—three tasks ensure that each word chosen is easily classified as either a negative or positive attribute, or as either a daily-living or a mental health care activity (tasks 1, 2, and 4 in Figure 1), while two tasks (tasks 3

and 5 in Figure 1) are the crucial tasks in which words are classified into the stereotype-congruent or incongruent categories. The instructions and measures are the same for each task: participants must choose whether a word presented in the centre of the display belongs to the category depicted on the top left or right. They must press the designated left or right computer key as fast and as accurately as possible. The time it takes to classify each word is recorded (reaction time [RT] in msec).

Tasks 1, 2, and 4 ensure that the chosen words are easily paired with their related category. In task 1, participants must classify words representing activities as belonging to the category of care seeking or daily living (12 words in total) by pressing the left or right computer key (for example, in Figure 1, task 1, the word "counselling" is paired with "care seeking" so participants would press "left"). In task 2, participants must sort attributes into negative or positive categories (12 words in total) by pressing the left or right computer key (for example, in Figure 1, task 2, the word "awkward" is paired with "negative" so participants would press "right"). The purpose of task 4 was to reinforce classifying words related to the care-seeking and daily living activities (while reversing their left-right position from task 1).

Tasks 3 and 5 are crucial conditions in which reaction time (RT) was compared between the categories congruent and incongruent with stigma. In task 3, participants must classify words (related to either activities or to attributes) in a way that is congruent with stigma—care seeking is paired with negative, and daily living, with positive (labelled *stereotype-congruent pairs* in Figure 1). In task 3, the word "sad" is paired with "care seeking/negative," and so participants would click on the right arrow key). In task 5, participants must classify the chosen words (related to either activities or to attributes) in a way that is incongruent with the stigma—care seeking paired with positive, and daily living, with negative (labelled *stereotype-incongruent pairs* in Figure 1). In task 5, the word "cheerful" is paired with "care seeking/positive" and so participants would click on the right arrow key. The order of tasks 3 and 5 is counterbalanced across participants. It was expected that participants would be faster (and make fewer errors) when categorizing words in categories congruent with stigma (i.e., task 3 illustrating the stereotype-congruent pairs).

RESULTS

Reaction times (in msec) and the number of errors made in the IAT's congruent and incongruent pairs (tasks 3 and 5) were measured and compared between psychology and non-psychology students separately.

The average RTs are illustrated in Figure 2. These data were statistically analysed as it is essential to compare means and draw conclusions which have a good probability of being reliable and replicable. All differences reported here are

statistically significant and thus are deemed replicable (details about the analysis can be found in footnotes[2]).

Figure 2. Psychology and Non-Psychology Students' Reaction Times in Congruent and Incongruent Pairs
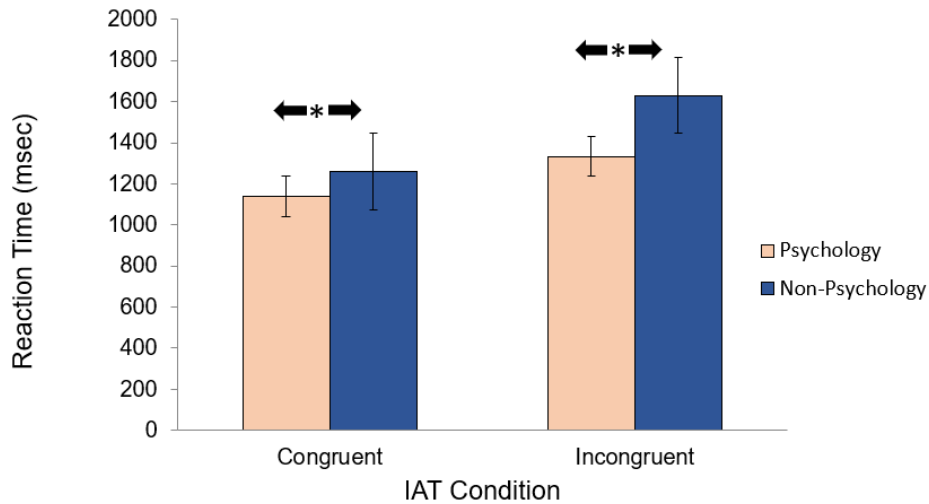
Note. Psychology and non-psychology students' mean reaction times (msec; one error bar represents one standard deviation) in the stereotype-congruent and incongruent pairs. The asterisk signifies statistical significance.

As expected, *all* participants were faster at classifying words into categories representing stigma toward care seeking; the average RT of psychology and non-

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[2] The analysis was conducted on data from 55 participants (three participants were outliers: they obtained a reaction time [RT] z-score greater than 2.5 standard deviations from the mean). A 2x2 mixed analysis of variance was conducted on the RT (msec) with Areas of Study (levels: psychology & non-psychology students) as the between-subject variable, and with Pairings (levels: congruent & incongruent) as the within-subject variable. The main effect Areas of Study was significant [$F(1, 53)=12.22$, $p=0.001$; $\eta2=.19$; Power=.93]: RT mean was longer for the non-psychology (M=1444.11, SD=324.48) than for the psychology (M=1235.28, SD=260.96) students. The main effect of Pairings was significant [$F(1, 53)=66.84$, $p < .000$; $\eta2=.56$; Power=1.00]. For both psychology and non-psychology students, the mean RT was longer in the stereotype-incongruent (M=484.15, SD=317.04) than in the stereotype-congruent pairs (M=1199.04, SD=233.16). There was a significant interaction between Areas of Study and Pairings [$F(1, 53)=6.37$, $p=.015$; $\eta2=.11$; Power=.70]. Non-psychology students were slowest in the incongruent [$t(53)=3.91$, $p=.0001$] and congruent pairs [$t(53)=1.98$, $p=.03$; smaller difference].

psychology students was shorter in the stereotype-congruent (M=1199.04, SD=233.16) than in the stereotype-incongruent (M=1484.15, SD=317.04) pairs; however, psychology students were comparatively faster when dealing with stereotype-congruent pairs. Psychology students were also faster at categorizing words into the stereotype-incongruent pairs (M=1258.59, SD=215.42) than non-psychology students (M=1629.64, SD=310.94). (As mentioned, this difference was also true for the stereotype-congruent pairs, but to a lesser extent.) These results show that psychology students were less slowed down by the stereotype-incongruent pairs.

Not only were psychology students' RT less affected by the stereotype pairing, but their errors were as well. In the stereotype-incongruent pairs, psychology students made fewer errors (M=5.7, SD=4.1) than did non-psychology students (M=8.8, SD=4.8).[3] See Figure 3.

Figure 3. Psychology and Non-Psychology Students' Errors in Congruent and Incongruent Pairs
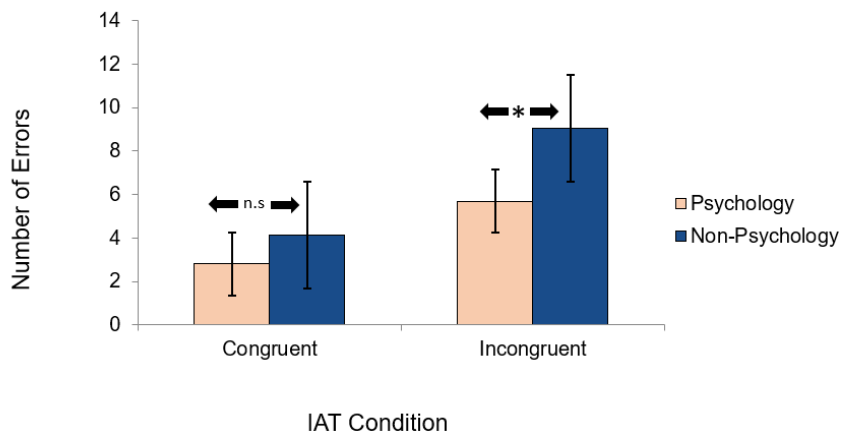
Note. Figure 3 shows the mean number of errors made over 48 trials (one error bar represents one standard deviation) for the psychology and non-psychology students in the stereotype-congruent and incongruent pairs. The asterisk signifies statistical significance.

In sum, the results show that psychology students are less affected by the negative stigma associated with seeking mental health care. The results also show that, like non-psychology students, psychology students were faster at categorizing items in stereotype-congruent pairs. In addition, psychology students were faster in the stereotype-incongruent pairs and made fewer errors than non-psychology students.

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[3] There was a statistically significant difference in the number of errors made in the incongruent condition, with psychology students making fewer errors [t(53)=2.74, p=0.0084].

These findings confirm that implicit biases against mental health care still exist among university students, but to a lesser degree in those studying psychology.

DISCUSSION

The results confirm that university students still hold negative implicit attitudes toward mental health care (as found by Chiu et al. in 2018). Importantly, our findings show that studying psychology potentially reduces the effect of this implicit bias. To our knowledge, this is the first time that a direct link between studying psychology and reduced stigma toward help seeking has been measured and documented.

Previous studies have shown that learning about psychology (psychoeducation) improves mental health literacy (e.g., Maranzan et al., 2016), which in turn reduces overt stigma toward mental health care and promotes positive attitudes toward help seeking (Cheng et al., 2018). Our findings show that education may help reduce the implicit negative biases that students have toward psychological care. As more people are educated about mental health issues, more individuals should feel free to express their concerns and seek out help. These results give hope that mental health literacy can be improved through other means than taking psychology courses.

Specifically, it is hoped that the 2020 Covid-19 pandemic has raised awareness about the importance of taking care of our mental health, which, in turn, will contribute to reducing its associated stigma. Given that the Covid-19 pandemic is worldwide and long-lasting, it may have a broad and durable impact which reaches a much larger population than just those who are enrolled in university psychology courses. Stigma against mental health care affects diverse demographic groups; it is a problem for different ages, civilizations, and ethnicities. It is known that it specifically impacts help-seeking behaviours amongst men, ethnic minorities, military personnel, and health professionals (Corrigan, 2014). Education that reaches far and wide is crucial; hopefully the worldwide Covid-19 pandemic will contribute to improving attitudes toward mental health care. Indeed, our results show that implicit attitudes, such as negative stereotypes toward health care, are malleable and can be reduced.

Such reduction has been reported within other areas in recent studies by Banaji and colleagues. For example, Charlesworth and Banaji (2019) published evidence showing that implicit attitudes about sexual orientation and race have become more neutral over the past decade, and that this trend appears to hold across different demographic groups.

When combined with accessible mental health services, psychological education may help combat stigma toward mental health care. In Canada, many mental health services were able to transition online during the Covid-19 pandemic, making them more attainable for the general public. However, online interventions may have also hindered individuals' ability to seek help; many students were confined to their homes and lacked the privacy necessary for psychological support (Jurcik et al.,

2020). Combatting stigma toward mental health care will hopefully encourage individuals to feel more comfortable speaking about their mental health in personal settings.

Limitations

The present study has a limited number of participants and includes more women than men enrolled in York University's bilingual Glendon College. Evidently, whether the results can be replicated with other samples remains an open question. The gender imbalance within the current sample is due to Canadian student demographics—there are more women than men enrolled in undergraduate psychology, health, and related programs within post-secondary institutions in Canada (Trusz, 2020; Varrella, 2021). This remains the case in the Psychology Departments of York University and explains our sample limitations. Accordingly, the study results can only be generalized to a population with a similar gender imbalance.

While study results cannot be generalized to the greater population (i.e., external validity), it is important to appreciate that, to isolate the effect of studying psychology (or not), comparing a group of actual students in psychology to an equivalent control group (of matched age and gender) was essential for isolating the area of study (i.e., for strong internal validity).

Finally, it is important to acknowledge that students who have fewer stereotyped beliefs toward mental health issues may be more interested in studying psychology. It is possible that having an interest in psychology is related to having less stigma toward the field itself. Nevertheless, the current results show that an individual's sensitivity to psychological issues may be further transformed through their educational background in psychology. Further questions remain, but a conclusion is clear: talking about mental health is crucial for reducing its associated negative stigma. Let's talk about it!

REFERENCES

American Psychological Association. (n.d.). *APA Dictionary of Psychology*. https://dictionary.apa.org

Charlesworth, T. E., & Banaji, M. R. (2019). [Website]. *Patterns of implicit and explicit attitudes II: Long-term change and stability, regardless of group membership.* http://www.people.fas.harvard.edu/~banaji/research/publications/articles/2021_Charlesworth_AP.pdf

Cheng, H.-L., Wang, C., McDermott, R. C., Kridel, M., & Rislin, J. L. (2018). Self-stigma, mental health literacy, and Attitudes Toward Seeking Psychological Help. *Journal of Counseling & Development, 96*(1), 64–74. https://doi.org/10.1002/jcad.12178

Chiu, S., Liu, K., Maina, N., Majid, H., & Thomas, A. (2019). *Stigmatization related to seeking psychological care* [Unpublished course paper]. Department of Psychology, York University.

Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., Morgan, C., Rüsch, N., Brown, J. S. L., & Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological Medicine*, *45*(1), 11–27. https://doi.org/10.1017/S0033291714000129

Corrigan, P. W., Druss, B. G., & Perlick, D. A. (2014). The impact of mental illness stigma on seeking and participating in mental health care. *Psychological Science in the Public Interest, 15*(2), 37–70. https://doi.org/10.1177/1529100614531398

Douglas, K. (2020). Mitigating the wider health effects of Covid-19 pandemic response. *BMJ*, *369*, m1557. https://doi.org/10.1136/bmj.m1557

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*(6), 1464–1480. https://doi.org/10.1037//0022-3514.74.6.1464

Jurcik, T., Jarvis, G. E., Zeleskov Doric, J., Krasavtseva, Y., Yaltonskaya, A., Ogiwara, K., Sasaki, J., Dubois, S., & Grigoryan, K. (2020). Adapting mental health services to the COVID-19 pandemic: Reflections from professionals in four countries. *Counselling Psychology Quarterly*, 1–27. https://www.tandfonline.com/doi/full/10.1080/09515070.2020.1785846

Maranzan, K. A. (2016). Addressing mental illness stigma in the psychology classroom. *Psychology Learning & Teaching,15*(3), 235–249. https://doi.org/10.1177/1475725716666804

Moroz, N., Moroz, I., & Slovinec D'Angelo, M. (2020, July 2). *Mental health services in Canada: Barriers and cost-effective solutions to increase access*. https://doi.org/10.1177/0840470420933911

O'Brien, K. S., Puhl, R. M., Latner, J. D., Mir, A. S., & Hunter, J. A. (2010). Reducing anti-fat prejudice in preservice health students: A randomized trial. *Obesity*, *18*(11), https://doi.org/10.1038/oby.2010.79

Project Implicit. (n.d.). https://www.projectimplicit.net/resources/about-the-iat/

Rudman, L. A., Ashmore, R. D., & Gary, M. L. (2001). "Unlearning" automatic biases: The malleability of implicit prejudice and stereotypes. *Journal of Personality and Social Psychology*, *81*(5), 856-868. https://doi.org/10.1037//0022-3514.81.5.856

Stull, L. G., McGrew, J. H., Salyers, M. P., & Ashburn-Nardo, L. (2013). Implicit and explicit stigma of mental illness: Attitudes in an evidence-based practice. *The Journal of Nervous and Mental Disease*, *201*(12), 1072–1079. https://doi.org/10.1097/NMD.0000000000000056

Trusz, S. (2020). Why do females choose to study humanities or social sciences, while males prefer technology or science? Some intrapersonal and interpersonal

predictors. *Social Psychology of Education: An International Journal.* https://doi.org/10.1007/s11218-020-09551-5

Varrella, S. (2021). *Number of students enrolled in postsecondary institutions in Canada in 2018/19, by gender and field of study.* Statista. https://www.statista.com/statistics/448911/enrollment-of-postsecondary-students-in-canada-by-gender-and-field-of-study/

World Health Organization. (2017). *Mental health.* https://www.who.int/health-topics/mental-health