An Investigation into the Effects of Bias on Graduate Students and Novice Clinicians

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Abstract

The purpose of this manuscript was to identify the effects of bias on graduate students and novice clinicians. Understanding bias requires knowledge of cognitive psychology as bias can affect decision making and problem-solving. The research indicates that bias also appears in many areas of psychological research, education, and practice. The prevalence of bias can have negative consequences on both clinicians and clients. It is particularly harmful to marginalized populations. Reducing the consequences of bias requires both education and self-awareness. Future research should focus on diversifying the field to generalize the pre-existing research and ensure all minority groups are included.

An Investigation into the Effects of Bias on Graduate Students and Novice Clinicians

Consider the statement, "Scientific research should be unbiased." Now ask yourself, are you inclined to agree or disagree with the statement? What thoughts or feelings arise as you read this? Do specific experiences or memories come to mind? Whatever your answers to these questions are, they are subject to bias. From errors in assessing intelligence to potentially erroneous beliefs about vaccinations, the bias in the forming of judgments and the making of decisions affects both novices and experts in many areas, including education, medicine, law, business and psychology (Joe, 2020; Morewedge & Kahneman, 2010; Morewedge et al., 2015). Within psychology, in particular, bias can affect all areas from assessment to intervention (Ibanez & Toffel, 2020; Kuckertz & Amir, 2017; Leighton, 2010; Salkind, 2008; Shiffler, 2020).

The effects of bias are varied and complex, as are the consequences of its existence. Cognitive biases have been related to many mental disorders, including anxiety, depression, and addiction (Vrijsen et al., 2017). Bias also has the potential to lead to discrimination and stereotyping in the workforce and academic settings (Dunham, 2017; Huang, 2008; Milkman, 2015). Less biased individuals have increased decision-making competence leading to reduced chances of alcohol and drug use, decreased childhood delinquency rates, less fractured social environments, and superior problem-solving and planning abilities (Bruine de Bruin et al., 2020; Parker & Fischhoff, 2005). While these examples support the minimization of bias, this paper will also present instances where bias may be beneficial.

The purpose of this research project is to develop a better understanding of bias. In particular, there will be a focus on how bias affects novice psychologists. The hope is that through developing an improved understanding of bias, new connections may be drawn in the

literature. These may guide students, instructors, supervisors, and clinicians as they attempt to mitigate bias in psychology.

How bias affects psychology is the overarching question guiding this research. More specifically, I want to know how bias in research, academia, and clinical practice affects graduate-level psychology students and novice clinicians. I am curious how bias is present in research and course material, in students' interactions with professors, and as they take their first steps into professional and clinical practice. Ultimately, this research aims to determine how bias in these settings can be identified and mitigated to ensure clients receive the best care.

This manuscript begins with a self-positioning statement, which is particularly relevant to the topic of interest before presenting the literature review. To provide a literature review that is as comprehensive as possible, I present a brief history of cognitive psychology and conceptualization of bias from a cognitive standpoint. This is followed by a review of the literature on the role of bias in academia.

As I mentioned above, I also examined research on the potential benefits of bias, which will lead to a discussion of the numerous ways that bias can affect counselling psychology. The discussion of these effects will be expanded to therapy and practice, focusing on novice clinicians' professional development. The manuscript will conclude with strategies for reducing bias as well as fundamental next steps for research.

Self-Positioning Statement

I initially struggled when selecting a topic. I found that the idea of selecting just one area of research to focus on for the next year was both daunting and overwhelming. I jumped from idea to idea, trying to find something that was interesting, but not too close to my heart. I knew that my success depended on finding a topic I was passionate about but not triggered by.

In a fit of exasperation, I decided to write about procrastination in graduate students. I am interested in cognition, and I have always been fascinated by how humans and animals experience and understand their world. In addition, I am a lifelong procrastinator, and I secretly hoped that through the process, I would learn how to 'fix' my procrastinating ways.

I began to research the topic, even going as far as to write my initial prospectus. While I found the literature interesting and still believe that it may be useful to understand how procrastination relates to accessing resources, I did not have the thirst for knowledge that I had hoped for. When describing my project, I would laugh it off and justify my choice by saying that I wanted to do something easy and how I was hoping it would stop me from procrastinating. While it would be remiss to say that this was not true, my greatest fear was that the topic I selected would not be interesting to my reader.

I spend a great deal of time reading and learning about a number of disciplines, including economics, history, and the natural, physical, and social sciences. I am aware of how critical it is for information to be presented in an enticing and accessible way. Of course, I recognized that as a graduate student, not a researcher or science educator, I needed to adapt some of my expectations. Still, I aspired to create something that could capture the interest of my reader, the way I had been captured so many times before.

My Isolated Microcosm in a Tumultuous Macrocosm

To understand my position on this topic, it is important to understand my world's current state. It is this macrocosm that is reflected in the microcosm of my own experience. Over the past few decades, advances in technology have made information more accessible than ever, but this does not necessarily translate to understanding what is presented. While I am Canadian, I cannot deny that the United States' political climate has affected my life. The past four years

have seen continued divisions and political polarization, and a sense of mistrust in the government and science. It seems as though calling something 'fake news' is all that is needed to discredit it.

Even my experience in writing this manuscript is somewhat a-typical. Writing during the midst of a global pandemic is an odd and, at times, surreal experience. I, too, have fallen prey to the 24-hours news cycle and the never-ending stream of information that is at our fingertips. This has been further complicated by the varying, and at times outright contradictory, information available. However, I have again relied on the science educators that have previously directed my learning to navigate this influx of information on the COVID-19 pandemic.

While writing my second portion of this manuscript, the murder of George Floyd sparked a fire in the hearts of millions. His death, and those preceding, refuelled the Black Lives Matter movement and once again made the prevalence of racism and discrimination undeniable. My selection of this topic preceded the global developments and those that occur in my social groups. My understanding of and beliefs about bias has grown from this work and the media I consume.

Even amongst all this turbulence, I sit at my desk, drinking my coffee, separated from the chaos. Advised to social distance, I have respected the word of the researchers, health care providers, and government officials. At times I have suffered from 'white fatigue' and had the privilege to take a break from my research and the media. Nonetheless, I have taken active steps to develop my knowledge of social justice and continue down a career path that supports these views. I take pride in the integrity and conviction this has required, but I realize how privileged I am just to have the option of social distancing and practicing self-care in a safe and chaos free home.

My "Aha" Moment

For weeks I had been struggling over my chosen topic. Wanting to change it, but feeling stuck. I had brainstormed ideas on personality disorders and technology, diagnosis and lexical analysis, but none of them lit the spark I was striving for. During the writing of my prospectus, I began to research how to mitigate bias in my writing. This led me down a path of discrimination in research and publication. I began questioning my own beliefs about the importance of peer review and using research as a basis for clinical practice.

At the same time, I was reading the book *Range: Why Generalists Triumph in a Specialized World* by David Epstein (2019). A section of this book discusses the consequences that expertise can have on decision-making—describing how those with expertise can become more biased. Findings supported by Kahan et al.'s (2016) research that those with a greater level of scientific knowledge can have more polarized views.

In the following weeks, I continued to reflect on these findings. One of the most talked-about concepts throughout my master's degree has been identifying and mitigating bias. I had begun to question the accuracy of what I had been taught and its effects on my future practice. My attempts to address these concerns were leading to more and more questions. David Epstein (2019) also speaks about curiosity and how it can increase an individual's range of knowledge, thus decreasing bias. As someone who views themselves as being a bit of a 'Jane of all trades,' I identified with this concept and recognized that I had discovered what was to be the tip of a very large iceberg.

All of this culminated with me waking with a start in the middle of the night. I had dreamed that I was presenting the elevator pitch for my research. Instead of procrastination, I was speaking of bias in research, academia, and clinical practice. I quickly wrote down all that I

could remember from my talk, but unable to slow the cogs of my mind, I did not return to sleep. This was the spark, the thirst, the passion that I had hoped for.

Assessing My Stance

I am an academic and a future clinician, researching a topic that is fraught with emotion, discrimination, and contradiction. Researching bias is inherently 'meta' and a self-referential topic. I have been constantly reminded of my own bias and its presence in every aspect of my life. It has made me even more aware of how attempting to write a bias-free review of the concept of bias is simply not possible. Each article I have read or rejected has been determined by my bias and the biases of those before me.

I brought a number of biases when beginning my research, some supported by what I have found, others less so. First, I believe that formal education is vital for developing well-rounded and knowledgeable individuals. I believe that the educational system has done a good job of preparing me for the outside world. Second, I believe that the scientific method is critical for conducting research. My educational background has focused mainly on quantitative research. This research is governed by strict rules that emphasize objectivity, measurability, and replicability. Third, I believe that bias is rampant in society, academia, and clinical practice. Fourth, I believe that most of this bias is harmful and leads to the stigmatization and discrimination of marginalized groups. Finally, relating to my first bias, I believe that research and education have the capacity to mitigate these effects.

My political and social values should also be considered. I believe strongly in social justice and activism. I tend to lean, if not dive headfirst, into the liberal left-wing. My personal beliefs extend past this manuscript and affect every aspect of my daily life. While this blending of personal and academic life has been challenging, it has proven to be useful in my journey to

becoming an ally. It has made me hypercritical of myself, my work, and my community. I have become increasingly aware of the prevalence and impacts of bias in my work and all areas of my own life. These beliefs contributed to my selection of the topic and have dictated the direction it has taken.

In general, I take an optimistic stance. I aspire to find new connections between the literature. I hope that I can draw conclusions to develop my competencies and provide guidance for others. I hope that the products of my final project will inspire the flame of curiosity that was ignited within me.

An Introduction to Cognitive Psychology and Bias

The term cognitive bias is a general term that describes the patterns of systematic errors that occur in thinking or reasoning (Cooper & Meterko, 2019; Leighton, 2010; McGuire et al., 2017). Cognitive biases are present in nearly all forms of thinking and reasoning, including "quantitative judgment, decision analysis, moral thinking, and social dilemmas" (Leighton, 2010, Conceptual Overview and Discussion). They are the systematic deviation from two concepts considered to be the basis for rationality: the rules of logic and probability (Lieder et al., 2018). The interaction between bias and cognition may be one reason that many disciplines, including psychology, law, political science, and education, have contributed to the literature in this area (Anderson, 2012; Cutler, 2008; Leighton, 2010; Pearse, 2017).

Within psychology, bias has been identified and researched in nearly all divisions of the field. The domains that are most apparently relevant may be within cognitive psychology, statistics, and research methodology. However, the concept is also applicable to assessment, educational, abnormal, and clinical psychology (Boehmke, 2004; Ibanez & Toffel, 2020; Kuckertz & Amir, 2017; Leighton, 2010; Salkind, 2008).

An introduction to the concept of bias requires an understanding of several concepts. These include the history of cognition as well as research on problem-solving and decision making. Understanding bias is a complicated process that requires an understanding of greater concepts that guide how individuals think. The origins of cognitive psychology and the literature that followed its development set the stage for conceptualizing bias.

An Early History of Cognitive Psychology

Cognitive psychology's origin story does not begin in the 20th or even 19th century; instead, it dates back more than twenty-three centuries to the classical Greek philosophers. The Greek philosopher Aristotle (384 – 322 BC) theorized about perception, memory, and how individuals gain knowledge. This early interest in the mind has led to thousands of years of work peaking in what would come to be known as the cognitive revolution.

The birth of cognitive psychology occurred in the 1950s and '60s (Gjerdingen, 2013; Mandler, 2011). During this time, there were many vital researchers, psychologists, and theories that developed, including Chomsky's theory of language, Newell and Simon's general problem-solving model, and the comparison of human and artificial intelligence (Brown, 2007). This period is referred to as the cognitive revolution and transformed the preexisting methodologies, approaches, and attitudes (Brown, 2007; Griffiths, 2015; Maitlin, 2009).

Following the cognitive revolution, behavioural scientists became increasingly aware of the effects of emotions on several perceptual and cognitive processes, including attention, thinking, problem-solving, and decision making (Scherer, 2001). This knowledge, combined with research on pattern recognition and object perception, provides a natural transition to research on bias (Smith et al., 2006). However, this long history of research on cognitive psychology has left many questions unanswered when it comes to the topic of bias.

Conceptualizing Bias

Conceptualizing bias has proven to be no easy task. Bias is so pervasive in academia and research that there are numerous perspectives on it. It is difficult to find an overarching theory or principle that can explain all forms of bias and the nuances between it and various other concepts, including stereotypes and heuristics. I have chosen to discuss the ubiquitous concepts of decision making and problem-solving as a basis for the conceptualization of bias. These two cognitive processes are critical in the professional development of clinicians. Their susceptibility to bias and the potential consequences can have critical consequences for both clients and clinicians alike.

Decision Making and Problem Solving

Every day we are presented with problems that must be solved and decisions that must be made. For counsellors, these may be as small as deciding what to wear or as large as breaking confidentiality. While writing this manuscript, I have encountered countless problems and decided how they may be solved. Perhaps I have chosen to consult with a supervisor, reflected on the project and my goals, or brainstormed new strategies. I have chosen which directions to follow and what information to exclude. These actions have been affected by bias. As a researcher, it is my ethical responsibility to provide an unbiased presentation of the literature. It is my awareness of this that has led me to include these topics.

Problem-solving is used to achieve a particular goal when the pathway to achievement is not immediately apparent (Hesse et al., 2015). Problem-solving is a complex process affected by many aspects of cognition, one being bias. In this context, three pieces of problem-solving should be considered: (1) understanding the problem, (2) selecting problem-solving strategies, and (3) factors that affect problem-solving (Maitlin, 2009; Siswono et al., 2016). Each of these

aspects of problem-solving is subject to bias and can then lead to biased decision making (Liedtka, 2015).

In research on problem-solving, understanding is related to developing a systematic mental representation of a problem and learning (Cornoldi et al., 2015; Schack & Frank, 2020). This structured representation is built by using information presented in the problem as well as the individual's previous knowledge (Robertson, 2001; Fragkiadaki & Konstantinos, 2015). Using knowledge presented in a problem requires that an individual focus on the most relevant information; this is also affected by attention, memory, and decision making. All of which are intertwined and susceptible to bias (Mailtin, 2009).

Some psychologists believe in the situated-cognition theory of learning (Gomez & Lee, 2015; Roth & Jornet, 2013). This theory proposes that learning occurs in complex, real-life situations and not in isolation. It is the interactions that learners have with certain situations that "influences their ability to develop a meaningful understanding of new concepts and skills and to transfer new skills to other relevant situations" (Sullivan, 2009, para. 1).

This theory provides one manner of conceptualizing why bias may appear during problem-solving. It also suggests why, when studying cognition, it is critical to use ecological validity (Dawson & Marcotte, 2017; Maitlin, 2009; Risko et al., 2012; van der Ham et al., 2015). As humans, it appears that our previous experience profoundly influences us. Not only in our understanding of the world around us but also in our ability to recognize that we have the skills and knowledge to solve a problem successfully. While a student may understand a concept like bias in class, this may not transfer to their practice. It is possible that while a student may be able to identify and reflect on their bias while writing a paper, they may not be able to do so while sitting in front of a client.

As students progress through their careers, they must learn how to solve problems and make decisions efficiently and effectively (Holmes et al., 2020). Making a decision requires assessing many options and making a final selection. Different approaches and strategies may be used, all of which are affected by bias (Abrahamyam, 2016). Students must learn how they can transfer the material they have learned in class to their practice.

As I progress throughout this literature and manuscript, I have asked myself whether I am falling prey to this bias; I have also considered whether the information I have provided is biased. I have used my problem solving and decision-making skills while being critical of the biases discussed above. However, many other biases appear to be rampant in many research areas, regardless of the discipline. These biases will affect my understanding of the topic.

Bias in Academia

Bias in academia can affect both students and instructors. It is closely tied with discrimination and stereotyping and may affect students at any level of education (Berg et al., 2020; Finn et al., 2020; Menegatti et al., 2017; Wang et al., 2020). My primary focus here will be on those completing or teaching undergraduate and graduate degrees. I have chosen to focus here as I believe these education levels are closely linked to the role of bias in clinical practice. Bias can occur in many stages of a student or novice clinician's career. Students' bias towards instructors and vice versa can alter both parties' experience and the very literature and material that curriculums are based upon.

Instructor Bias Towards Students

When reviewing the literature on instructor bias, it appears that it primarily focuses on the grading and feedback students receive. It seems likely that this is because this data is the

easiest to quantify and compare. In addition to this, the research I located focuses mainly on gender, disability, and culture or native language.

Bias towards women and minorities may be particularly susceptible to contextual factors (Kahn & Davies, 2017; Rohrbach et al., 2017). Research by Milkman et al. (2012) found an increased likelihood of discrimination against women and minorities when faculty members made decisions about distant future versus immediate events. Another study by Milkman et al. (2015) found similar responsiveness patterns with female and minority groups being more likely to experience adverse effects from bias in business, human services, engineering, education, computer sciences, and mathematics programs.

Research on grading, gender, race, and disability does not consistently show the presence or absence of bias (Malouff & Thorsteinsson, 2016; Mastergeorge & Martinez, 2010; Read et al., 2005). Yet, there may be subjectivity in the grading process (Quinn, 2020; Read et al., 2005). Interestingly it appears that even though the views of some markers may appear to be influenced by stereotypes, it is not always reflected in their marking. However, this does not mean that teachers are unaffected by the knowledge of a disability, causing increased disagreement amongst scorers (Mastergeorge & Martinez, 2010).

Student Bias Towards Instructors and Feedback

In the United States, there is a perception that colleges and universities are liberally biased and improperly include this bias in course content. This bias towards liberalism is present in many disciplines, including psychology (Gross & Simmons, 2007; Silander et al., 2020). Counterintuitively, it appears that, in actuality, there may be a small bias towards conservative students (Kemmelmeier et al., 2005). While those working in higher education and research may be liberal, it should also be noted that this is not proof of a liberal bias (Larregue, 2018). There

may not be a correlation between the gender or race of a professor and perceptions of a class having a political bias or agenda. Instead, it may be the students' demographic characteristics that increase the likelihood of perceiving the course content as biased (Anderson & Smith, 2005).

Students will also respond to feedback differently depending on the language it is presented in. Research by van Hugten (2018) found an increased level of self-serving bias when feedback was presented in a non-native language. This bias was reduced when presented in their native language. This means that students are more likely to attribute their negative feedback to external factors when it is not presented in their native language. When feedback is presented in their native tongue, they are more likely to believe that it was reflective of their abilities.

Students are not immune to bias, and how they view instructors can have serious ramifications. In many universities, student evaluations are factored into decisions about tenure, compensation, and other employment areas (Mitchell & Martin, 2015). Research shows significant differences in the ratings of male and female professors (Graves et al., 2017). Female professors are more likely to receive comments about their personality and appearance. Women are also more likely to be referred to as a teacher, not a professor, indicating students may not have the same amount of professional respect for women. Overall, student evaluations appear to show a favourable bias toward men (Boring et al., 2016; MacNell et al., 2014; Morgan et al., 2016). The use of these biased evaluations may result in employment decisions that discriminate against women (Mitchell & Martin, 2018).

Student Bias in Research and Literature

It is important to note that bias may appear in nearly all areas of a student's educational experience. From the material that they are taught to their interactions with instructors, bias will impact what and how they learn. Students begin their career learning concepts and theories that

are intended to be accurate and objective. However, the research that supports this information may be biased. Before a student ever sits in front of a client, they may be impacted by clinicians' and researchers' biases before them. Bias in research can appear in any of the research stages: trial planning, trial implementation, and data analysis and publication (Althubaiti, 2016; Harrison et al., 2017; Helmer et al., 2017; Panucci & Wilkins, 2011; Stec, 2008; Waterfield, 2018).

In recent years there has been an increased discussion on publication bias. Bias in publication is the systematic rejection of research findings based on their small magnitude, statistical significance, or contradiction to previous findings or theories (Harrison et al., 2017). It can affect what studies are published, how quickly they are published, and where they are published. Most researchers work in what Shapiro (2014) describes as "dense scientific communities" which are "well-established scientific communities in which the different members attend the same meetings, publish in the same journals, cite each other's papers and often collaborate and compete with each other" (p. 2). These communities and their bias have great control over what literature is published and made available for students to learn from.

This awareness of publication bias may have led to reduced trust in the validity of research and graduate students having less trust in research (Kepes & McDaniel, 2013; Mullins et al., 2015). While students do not generally criticize the researcher or authors, they are more critical of the publishing process itself (Schmidt & Oh, 2016). This distrust of publication may factor into students' tendency to focus more on the descriptive aspects of a study over its methodology. Mullins et al. (2015) were optimistic about their findings that 43.5% of students indicated that they would use current research as a guide throughout their careers. Nevertheless, this lack of trust in research may have potential consequences for future generations leading to a decrease in the perceived importance of research on best practices.

It is particularly concerning that even when students can identify different sources' quality, they do not always apply this (Stapleton, 2003). When students completed a written assignment, they did not demonstrate their knowledge consistently. Students were biased towards literature that appeared in print and sources produced by professionals, except for the government. These findings indicate that while students may have knowledge of what makes a reliable source, they can be biased by other factors.

In addition to the above biases, there are differences in the susceptibility to bias in self-directed learners. Self-directed learning provides an opportunity for individuals to test their hypotheses. However, research indicates that self-directed learners may have difficulty overcoming bias when generating hypotheses. This difficulty limits the effectiveness of self-directed learning approaches. It is not that individuals are incapable of testing their hypotheses. Instead, the problem may come from biased thought that prevents the generation of the correct hypothesis in the first place (Markant, 2019).

Bias in Qualitative Research

As I have mentioned, this manuscript is biased mainly towards quantitative research on bias. Qualitative research often differs in its research methodologies and allows for a more open-ended exploration of a topic (Choy, 2014; Mohajan, 2018). While there has historically been a bias towards quantitative methods, qualitative research may have its strengths when addressing bias (Queirós, 2017; Roulston & Shelton, 2015). While quantitative research is based upon a positivist paradigm that explains behaviour by understanding objective facts, qualitative research is based upon a phenomenological paradigm that acknowledges the possibility of multiple socially defined realities (Firestone, 2020).

Quantitative research typically uses experiential or correlational designs to reduce error and bias. Ideally, quantitative researchers are detached from their research to remain objective. Alternatively, qualitative studies immerse the researchers into a topic acknowledging their own bias (Firestone et al., 2020; Bansal et al., 2018). This axiological approach promotes the researchers acknowledging their values and biases, leading to an open discussion of their existence. This approach also allows the research to present both the researchers interpretations of the topic and those of the participants (Biedenback & Jacobsson, 2016; Creswell, 2007).

Students who are new to qualitative research often assume that bias is associated with poorly conducted research, unethical behaviours, and inaccurate findings (Roulston & Shelton, 2015). Many believe that objectivity and subjectivity are opposite sides of a spectrum; however, this is not necessarily true (Latour, 2000). In fact, qualitative research requires the awareness that preconceived perspectives and tendencies are inseparable from the research (Ogden, 2008).

Often bias in research is viewed as something that should be irradicated, but qualitative approaches use the idea of reflexivity and strategies to examine subjectivity. Rather than attempting to remove bias, qualitative researchers seek to understand how their subjectivity shapes the research process. This perspective draws parallels with some of the research presented in this manuscript. When framing bias, using a qualitative mindset allows for a multi-faceted discussion of its role in novice clinicians' experience.

Anthony Paré (2010) argues that one aspect of a doctoral student's education is learning about currently debated topics in ways that acknowledge how they developed conceptually and chronologically. This manuscript has provided the reader with this opportunity. In the following sections, the reader will benefit from using both quantitative and qualitative perspectives on the topic by considering all the many implications of bias in counselling psychology.

Implications for Counselling Psychology

Throughout this manuscript, implications for counselling psychology have been presented in a primarily indirect manner. It is more challenging to isolate bias in a strictly clinical sense. As can be seen, bias may alter clinicians' training and education, but it is less apparent how this arises in session.

The reader may assume that bias has no positive attributes, but this is not a certainty. The potential benefits of bias must first be acknowledged before a more in-depth discussion of additional ramifications. Following this is a discussion of the many instances where bias may impact the clients' experience and clinicians' practices.

Benefits of Bias

Bias can have a number of negative connotations and the majority of the literature reviewed details the adverse effects of bias. Throughout this review, I have presented information detailing the potential consequences of bias, and I found that the research typically focuses on this. However, a smaller body of research proposes the benefits of and even the need for biased thought. Much of these findings come from evolutionary psychology (Haselton et al., 2015). Excluding this research would go against the very nature of this topic. Thus, I must present forms of bias that are adaptive and beneficial to those who use them.

Positive bias is associated with many positive outcomes, and it is possible that having a positive bias towards clients could lead to improved client outcomes (Bateson, 2016). By believing in a client and seeing their strengths rather than weaknesses, a clinician may inspire hope. A clinician who is biased towards believing the best of people may better provide a less-judgmental and more accepting environment for their clients.

The most apparent forms of bias that appear to be beneficial are positive biases. While research on attentional biases has historically focused on the negative, more recent research is beginning to include positive attentional biases (Pool et al., 2016). A meta-analysis conducted by Pool et al. (2016) found a small tendency to attend positive stimuli over neutral. Other findings indicate that biases like the subjective age bias and weight bias may positively affect health, leading to increased beliefs about the effectiveness of treatment and improved cognitive health (Kotter-Gruhn et al., 2016; Montepare, 2009; Stephan et al., 2015; Stephan et al., 2016; Stephan et al., 2017; Stewart and Ogden, 2019; Zee et al., 2019).

The Role of Bias in Client Experience and Treatment

Individuals in psychological distress are more likely to seek experienced clinical psychologists, demonstrating the general publics' bias for expertise (Tracey et al., 2014). While it would be difficult to argue that clinicians who have worked longer have not gained more experience, this does not necessarily equate to increased competency in all areas (Hill et al., 2017). Categorizing mental disorders into diagnostic categories is one area that appears to be particularly challenging (Brailey et al., 2001; Schulte-Mecklenbeck et al., 2015). Both novices and experts appear to make diagnostic decisions that are surprisingly similar (Agisdottir et al., 2006; Skvortsova et al., 2016).

Further complicating the influence of thinking styles on diagnostic accuracy are the findings of Aarts et al. (2012) that increased rationality led to reduced diagnostic accuracy. Clinicians who thought more about an archetype, a general picture of the client, or attempted to interpret or explain a client's complaints were less accurate. More rational thinkers may be more influenced by contextual information (Corbin et al., 2010; Kreiner & Gamliel, 2017). This may

indicate that what we would consider being less biased is, in actuality, more biased. This lack of open-mindedness may also result in considering fewer potential possibilities for diagnosis.

In the American Psychiatric Association's (2013) *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5), disorders have criteria related to individuals' cognition. Research indicates that many of these disorders, including anxiety, depression, and addiction, may be affected by bias (Field & Cox, 2008; Lau & Waters, 2016; Stacy & Wiers, 2011).

Cognitive models have developed a foundation for understanding how experiencing adverse events, particularly childhood interpersonal trauma, affects psychopathology (Beck, 2008; Beck & Bredemeier, 2016; Metzler et al., 2017). Experiencing adverse or traumatic events early in life may alter how a person views themselves and their world. These views affect how information is processed, which may lead to negative cognitive biases that have been associated with psychopathology (Vrijsen et al., 2017).

Understanding the influence that bias can have on clients is useful knowledge for all clinicians. This has led to the development of treatments like cognitive bias modification for reducing the effects of bias on symptomology (Macleod & Matthers, 2012; Vaclavik & Pettit, 2017). Yet the question remains, how can students who lack experience best integrate this knowledge into practice?

Expertise and Clinical Practice

Expertise is often required by courts of law, media outlets, academic institutions and professional organizations. As experts should be more knowledgeable on a topic, conventional wisdom would suggest that experts provide benefits that novices are incapable of (Knoll & Arkes, 2017). Experts may be required to perform various tasks under the assumption that their expertise makes them more qualified. To make the right decision, an understanding of the extent

of one's knowledge, in addition to the knowledge itself, is needed (Hansson et al., 2017). This requires an individual to assess their understanding and how it relates to the degrees of understanding others may possess.

The ability to accurately assess one's knowledge while practicing psychology may be particularly challenging. A clinician needs to assess their clinical knowledge as well as their knowledge of the client. As shown throughout the manuscript, there are many opportunities for bias to affect problem-solving and decision making. One would hope that years of experience would provide the skills to mitigate bias, but this is not always the case (Knoll & Arks, 2017).

From research to practice, an inability to accurately assess a situation can have devastating consequences (Landucci & Lampeti, 2020; Zescott et al., 2016). As students progress through their careers, they develop new skills and better understand both clients and their discipline. One aspect of this is the identification and mediation of bias. This realization allows for a more in-depth examination of a situation, leading to improved client outcomes.

The above research is a brief introduction to the implications of bias on counselling, but it is clear that bias is a critical concept for ensuring client outcomes. For students and novice practitioners, the challenge becomes integrating this knowledge into their practice. The complexity of bias means that there is no simple instructional manual to guide students through this process. Instead, they must rely on self-reflection, supervision, and experience to guide them.

Reducing Bias

This research's primary purpose has been to understand better the role that cognitive bias plays in practice to reduce the consequences of bias. As a graduate student who has spent much of the last year learning about and reflecting on bias, I have chosen to focus on graduate students

and new clinicians. The reader may find the research I have presented thus far to be overwhelming. At times it can feel almost hopeless. If bias is so rampant in psychology and the world, how can we even begin to address it? Fortunately, the research indicates that while it is no easy feat, it is possible.

In order to assist students and novice professionals, we must first understand their professional journey and development of cultural competency. This will allow for a better understanding of the challenges that may arise as students reflect on and address their bias. Only then can we begin to understand the strategies that may aid students, novice professionals, instructors and supervisors in reducing bias.

The Development of Professional Identity

The overarching goal of this research is to improve the education and practice of novice or student psychologists. This research has taken just one factor that may affect clinicians' efficacy, but our roles can be complicated and nuanced. Understanding some of this complexity related to bias is useful to understand novice psychologists' professional development. In doing so, a foundation is created upon which cognitive bias may be applied and conceptualized.

From personal experience, I can speak to the stresses associated with being a novice psychologist. It has been a time fraught with fear, uncertainty, and self-doubt. Research on the topic shows that novice therapists report high anxiety levels and question their competency as a therapist (Dereix-Calonge et al., 2020; Skovholt & Ronnestad, 1995). Further complicating the experience is the human aspect of the discipline (Robinson et al., 2019). It is not uncommon for student therapists to struggle with emotional issues that emerge as they begin counselling (Frediani & Rober, 2016). These emotions can be challenging to cope with and may interfere with their counselling sessions (Bischoff et al., 2002; Hill et al., 2007). Nevertheless, these

experiences are crucial for developing their therapeutic identity, which becomes the foundation for further learning (Hill et al., 2007; Kannan & Levitt, 2017; Maruniakova et al., 2017).

Several theories have been used to explain the professional identity of therapists. Ranging from Fleming's psychoanalytic learning model (1953) to the developmental model proposed by Loganbill et al. (1982). Ronnestad and Skovholt (2012) synthesized these theories, along with their research, into a five-stage model of therapist development (Skovholt & Ronnestad, 1992). These stages are Novice Student Phase, Advanced Student Phase, Novice Professional Phase, Experienced Professional Phase, and the Senior Professional Phase. Each of these stages has specific attributes and objectives, but general themes apply to bias.

Throughout these stages, students and novice professionals work to both learn and apply knowledge. They are expected to understand more and more information and conceptualize this when assessing actual cases. Simultaneously, they must weed through this information as they develop their theory of practice. This requires that they balance openness to new information while also narrowing down their focus to a specific orientation.

While novice clinicians are expected to develop a greater degree of sophistication in their understanding, they are also expected to apply this to practice. They must demonstrate competency in areas like assessment and therapeutic skills while moving past unrealistic, perfectionist perspectives on psychotherapy. All of this requires students to become increasingly comfortable with the complexity, ambiguity and uncertainty of therapy.

Interestingly, the two final tasks of the Advanced Student phase involve the identification and mitigation of bias. Identifying that students' perceptions of psychotherapy are inaccurate may require a reflection on the origin of these views. While bias can have the potential to encourage black and white thinking, students completing the last task must learn to function

within the grey area. They must learn to cope with their confusion as their understanding of therapy and social existence shifts.

Cormier et al. (2017) use a sea snail metaphor to understand novice professionals' growth. As the snail grows, it creates larger and larger compartments, comparable to the stages discussed above, spiralling out from the center. Each time the snail grows, it seals off the previous, now too small chamber but does not discard it; similarly, students cannot regress to a previous stage. Instead, they must continue to move forward using their current and previous "compartments" as the foundation to further their never-ending growth. However, students are not alone in this process; instead, they have the guidance and support of instructors and supervisors.

Developing Cultural Competency through an Awareness of Bias

For mental health practitioners, cultural competency is "the ability to have awareness, understanding, and knowledge of themselves and their clients as cultural beings and the skills to provide effective, culturally appropriate interventions" (Kim & Devine, 2017, para. 1). While there is no consensus on the conceptualization of cultural competency, its importance cannot be denied. The three broadly agreed-upon dimensions required of cultural competency are: (a) the therapist must have an awareness of their beliefs, values, and biases; (b) the therapist should know the world views of the clients; and (c) the therapists should provide culturally sensitive interventions (Kim & Devine, 2017). Of particular importance here are the interactions between bias and cultural competency.

The awareness approach to cultural competency states that by developing an awareness of their own culture and how this may affect the therapeutic relationship, therapists can increase their cultural awareness and improve cross-cultural therapeutic relationships (Chu et al., 2017).

Awareness can be further broken up into an awareness of the influence that culture has on behaviour and cognition, the client's social environment, and the clinician's biases. Approaching cultural competency using awareness of bias can increase empathy and understanding between the client and therapist (Chu et al., 2017).

Regardless of the therapeutic approach, educational background, or organization that a clinician works in, they are likely to come across various clients to whom they or their institution may be biased against (Ungar et al., 2020). Some of these clients may come from backgrounds similar to the therapist, and others may not. Some clients may have had experiences triggering or values that oppose the clinicians and bring up both positive and negative biases. Bias has the potential to limit a counsellor's ability to provide both culturally competent and effective care.

Strategies to Reduce Bias in Academic Settings

Bias is complex and inescapable; thus, strategies to address it should equal this. There is no quick fix to bias, but including many teaching modalities may benefit students. Developing awareness can be challenging for educators and may require them to be flexible and meet their students' individual needs. Students and educators agree that this awareness is critical in developing cultural competency and should be an explicit part of course work (Davis et al., 2018; Monture, 2009; Sue & Sue, 2013).

Didactic strategies are those that are designed to educate students (Torino, 2015). These techniques may include lectures, discussions, videos, and readings. It is critical to provide students with an initial foundation of knowledge upon which they may build awareness. However, didactic lessons should include material that teaches students about themselves and others (Torino, 2015). As part of this, instructors need to facilitate discussions on the information

provided. Educators must assist students in addressing the negative emotions that may arise during this process.

Experiential techniques can complement didactic techniques. These learning strategies focus on individuals "personally and affectively examining their reactions, assumptions, beliefs, attitudes, values, standards of normality, prejudices, stereotypes, biases, privileges, and goals" (Torino, 2015, p. 299). Again, merely knowing about bias does not equate to a full understanding. Experiential learning may provide the necessary skills required for students to develop professional skills and expand their cultural competency outside of the classroom (Knapp et al., 2017).

Sukhera and Waitling (2018) developed a framework for integrating the recognition of implicit bias into health professionals' education. Their framework includes six key features: creating a safe and non-threatening learning context, increasing knowledge about the science of implicit bias, emphasizing how implicit bias influences behaviours and patient outcomes, increasing self-awareness of existing implicit biases, improving conscious efforts to overcome implicit bias, and enhancing awareness of how implicit bias influences others.

It appears that an essential step for reducing bias is developing an awareness that it exists, followed by an awareness of its pervasiveness. While the discipline of psychology may be resistant to the acknowledgement of bias, particularly in quantitative research, it maybe this very refusal that leads to the existence of such rampant bias. It is critical to educate students on bias while providing a supportive space that allows them to understand its role in their lives.

The Challenges of Self-Reflection

In recent years mental health professionals have been required to provide more ethical mental health care to clients from numerous cultural groups (American Psychological

Association, 2003; Brown, 2012; Kapoor et al., 2013; Henderson et al., 2018). Research also supports that white individuals have internalized the difficulty of changing implicit biases and prejudices (Dovido et al., 2002; Sue, 2010; Vuletich & Payne, 2019). This belief may limit their ability to successfully address their bias and even discourage them from attempting at all. Unfortunately, the research on this topic is biased towards the experiences of 'white' students and their privilege.

It is not uncommon for feelings of fear, shame, guilt, anxiety, and anger to arise when learning about bias and white privilege (Case & Rios, 2017; Neville et al., 2010; Spanierman et al., 2008; Sue et al., 2009; Sue, 2013). Individuals may even resist learning about topics like race and racism, which are closely tied to bias (Carter, 2005). However, these negative emotions can result in affirmative action. While greater awareness of white privilege may lead to increased white guilt levels, there is also an increase in affirmative action support (Swim et al., 2010).

Many white people believe that they are not racist; thus, learning about their own biases is challenging and can threaten their self-image (Carter, 2005; Sue, 2013; Sue & Sue, 2013; Çankaya & Mepschen, 2019). Rarely have white trainees considered what it means to be white before coursework (Sue, 2010). While it may be a challenging process examining what it means to be white and addressing white privilege, it is critical to developing cultural competency and awareness of bias (Hall & Jones, 2019; Sue & Torino, 2005).

Understanding the importance of cultural competency and the training designed to reduce it does not necessarily translate to effective programs and methods. In the same way, these training programs do not necessarily transfer outside of the classroom. Merely knowing that there is a problem does not equate to a solution. Instead, educators may benefit from a careful assessment of available evidence-based strategies and resources to aid their students in this

process (Callahan & Watkins, 2018). Many students are willing to adapt their practice when working with different cultures but lack the knowledge, experience, and confidence to do so (Geerlings et al., 2017). It is clear that students benefit from training in cultural competence, particularly in self-awareness and reflection; however, there is still a need for more systematic training on the topic (McConnochie et al., 2012; O'Connor et al., 2015).

Fundamental Next Steps for Research

While research on cognitive bias is at first glance varied and thorough, there are still many areas that are lacking. Changes in societal views, research, academia, and practice have created numerous areas deserving further exploration. There is also a need for increased representation of diversity in nearly all areas of psychology. Finally, there appears to be a gap in the research that translates the role of bias in research and academia to how it presents in session.

Updating the Research

The most apparent concern is that much of the research is not current. In the past few years, there have been many cultural shifts. Whether that be two very different presidents in office in the United States or social media as a platform for discussing social justice issues, the changes have likely altered the effect of implicit bias on both the psychological and greater communities. Understanding all the many ways that bias can influence research provides several opportunities for mitigating bias in the future. Bias is present from the very beginning stages of research, whether that be reviewing the literature, developing a hypothesis, or selecting participants.

Increasing Diversity

Throughout the literature cited in this manuscript, there has been a general lack of diversity. It appears to be common for researchers to rely on university students as participants,

thus disregarding large numbers of the population. It is also common for studies to select participants from one geographical region. This, combined with the desire to find significant findings, may further bias the research to fit a western understanding of the psyche.

An essential first step in mitigating this is ensuring more diversity in those who conduct and review research. Ensuring that the perspectives of various cultures and demographic groups receive proper representation is critical for reducing implicit bias in research. These changes would ideally allow for trickle-down effects, leading to changes in novice psychologists' education and practice.

Future research needs to incorporate more perspectives in an integrative manner. While there is value in understanding the differences between groups, the similarities are also valuable. There appears to be a lack of understanding of the importance of intersectionality in the literature. Groups are routinely divided based upon one category, rather than acknowledging the varied experiences of these individuals.

Taking this one step further may require that practicing psychologists are also more diverse. The history of psychology is primarily comprised of White men. While this is changing, it seems reasonable to encourage more diversity in the profession. This may mean providing resources to individuals or groups who would otherwise not be able to attend university. It may also mean an increased acceptance of cultural norms and values that could ensure students feel like they belong in the discipline.

Transferring Knowledge to Practice

While there is research on bias in areas of practice like assessment and diagnosis, there are otherareas that lack this (Ibanez & Toffel, 2020; Kuckertz & Amir, 2017; Leighton, 2010; Salkind, 2008; Shiffler, 2020). Throughout this manuscript, I have presented research on bias in

many areas of psychology and how to mitigate it. However, there appears to be less research that assesses how this knowledge translates to actual practice.

The first step in mitigating bias appears to be identifying its existence. However, understanding bias and recognizing its presence does not necessarily mean that the adverse effects of bias are prevented in session. The very nature of implicit bias means that it occurs on a subconscious level. More research needs to be done on how and when bias appears in the counselling session.

Of particular value may developing a better understanding of how clients perceive bias. It may be useful to understand better how those receiving mental health care understand and perceive bias. From an academic standpoint, I have researched the topic thoroughly, but my knowledge will likely differ from those of the general public or marginalized groups. It seems almost foolish to believe that we can genuinely address bias without a better understanding of how it is perceived by those on the other side of the room.

It may be that researching the negative consequences of bias on clients is an ethically challenging endeavour. It may take some creative research design to assess bias's impacts without risking the clients' wellbeing. As shown throughout this manuscript, bias can be harmful and intentionally putting a client through this would be unethical. This dilemma would be made even worse by using vulnerable subjects who are already at an increased risk of harm.

Regardless it seems necessary to better understand the impact of bias from those who are most impacted. Qualitative or mixed-method studies may be a useful strategy for this research. By understanding the themes that arise when clients are exposed to, or experience bias, connections may be drawn that inform practice. While it would be unethical to intentionally

place a client with a negatively biased counsellor using the above method may allow us to understand bias as it occurs in a more natural setting.

Reflective Statement

When I initially selected this topic, I had no idea just how timely it would be. I have always been passionate about social justice issues, but it seems that this passion has become much more present in the general public in the last few months. I had initially chosen to write on bias because I did not think it would be too triggering. Instead, I chose it because I was interested in cognition and the way we understand the world. Oddly enough, I was not aware of how closely this topic was related to values that I hold close to my heart.

Perhaps it was my own bias that prevented me from seeing this. As I discussed above, it can be challenging for white people to recognize their own biases, prejudices, and racism. I have certainly experienced these challenges. At times it was challenging to dive into the research. Between writing this manuscript and the Black Lives Matter Movement, I was constantly taking in new information, adjusting my beliefs, and repeating this process. I could not deny that it was both exhausting and overwhelming.

I struggled the most with feeling guilty. I felt guilty that I had not done enough. I felt guilty that I was not doing enough. I felt guilty for the very fact that I could so quickly close my laptop and step away from a topic that was inescapable for many. All of this led to a sense of shame that I had no right to feel these emotions or that my feelings were taking away from those who are genuinely struggling.

Throughout this process, I have struggled with being just another white person speaking about experiences I will never truly understand. While I am a woman, I still consider myself to be very privileged. I have been given opportunities based solely on my appearance, gender, race,

education and socioeconomic status. I am very aware of these privileges, and I am also aware of how they limit my understanding of this topic.

When I first started this assignment, I had dreams of making something that was of publishable quality. This has slowly changed. I have become acutely aware of how critical it is to stop talking and begin to listen genuinely. It is, of course, a requirement of this course that I complete this manuscript. Reflecting on my experience is just one portion of this.

I have transitioned away from approaching this project as though it is something to produce. Instead, I am viewing it as an exercise that will promote my continued growth as a clinician. I have learned a lot about myself, my future clients, psychology, and society. I hope that I will be able to use this knowledge in my future career. Even more than this, I hope to take what I have learned and benefit my community.

Over the past few months, I have had several challenging conversations with family and friends. This is just one way that I can take what I have learned and benefit others. I have found that a better understanding of how individuals respond to their biases being questioned has been particularly advantageous.

I have always enjoyed being challenged. For me, being told I am wrong is not a personal attack but an opportunity for growth. I recognize that this is not the case for everyone. Acknowledging our own bias can bring up many negative emotions. It can even challenge our core understanding of who we are.

Knowing this has allowed me to be more understanding of those who have different views than I do. I am now more compassionate about those who are just beginning this journey. In the past, it has been so easy to judge the beliefs of others. However, this propagates the "us" versus "them" mentality that can be so detrimental. It is possible that rather than reflecting on my

biases and prejudices, I found it easier to judge others. I hope that I will be able to use the knowledge I have gained over this process to better myself so that I may be a better ally.

Conclusion

The above research provides only an initial understanding of how bias affects psychology, but it is a strong foundation. Reviewing all of the research on bias would require summarizing a hundred years' worth of knowledge and theory, which is not possible within this project's confinements. As I have mentioned, it is critical when addressing bias that we understand the limits of our knowledge and abilities, and I must do the same.

In attempting to answer my overarching question of how bias affects novice psychologists, it is clear that it does so in what may be an infinite number of ways. This is also true for the effects of bias on psychological research, academia, and clinical practice. Bias is present in every aspect of a new clinician's experience. From their personal life to their professional identity, bias will alter how they view the world and their resulting decisions. Bias in research creates the standards for academic knowledge and course requirements. This bias then alters the structure of clinical practice and the experiences of professionals and clients.

Conceptualizing bias so that I can provide the reader with a short and simple answer is not possible. Its prevalence is too widespread, and its existence is too complex. Instead, I challenge the reader to answer these questions themselves. How has bias affected your experience both personally and professionally? How has bias in research and academia affected your career? What active steps have you taken to reduce the consequences of bias with your clients? The above literature should provide the reader with an evidence-based foundation for answering these questions. This, combined with the strategies for reducing bias, should assist the reader in furthering their understanding.

For good or for bad, bias affects nearly every moment of our lives. It alters how we interpret information and make decisions. It affects how we respond to others and how they respond to us. It can prevent us from seeing the world as it truly is and makes our existence more straightforward. In conclusion, I will leave the reader with a quote often attributed to Anaïs Nin: "We do not see things as they are, we see them as we are" (1961, p. 124). I hope that the reader will keep this in mind as they continue their self-exploration journey and professional development. While this path is challenging, the rewards are great for those that persevere.

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