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Abstract

Implicit (unconscious) gender bias and stereotypes can affect clinical decisions and interactions between healthcare professionals, as well as impact careers. However, there is no research exploring the implicit gender bias or stereotypes of occupational therapy students or practitioners. Therefore, the aim of this study was to examine the gender-career bias of occupational therapy students. To do so, occupational therapy students ($n = 54$) from three Midwestern United States graduate occupational therapy programs completed the gender-career attitudes implicit association test (IAT) – biases associating women with family, and men with career – as well as a survey polling demographic information. Participants' scores on the Gender-Career IAT were calculated and analyzed using descriptive statistics and a one-tailed t -test. Independent samples t -tests, one-way analysis of variance, and linear regression models were used to determine differences in implicit attitudes based on participants' demographics. The majority (79.63%) of occupational therapy students in this study implicitly associated men with career, and women with family. There were not statistically significant differences in implicit attitudes based on demographic characteristics. It is critical to be aware of the existence of gender-career implicit biases, like other biases, to identify and reduce negative effects these attitudes could have on professional identity development, professional and clinical interactions, clinical assessments and interventions, as well as personal decisions regarding career trajectory. This study's findings lay the foundation for future research on the effect of this bias on education, clinical practice, and career identity and longevity within the profession, as well as interventions to reduce implicit gender-career biases.

Keywords

Implicit bias, gender bias, gender-career, occupational therapy, education

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Gender Career Stereotypes, Implicit Bias, and Occupational Therapy

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ABSTRACT

Implicit (unconscious) gender bias and stereotypes can affect clinical decisions and interactions between healthcare professionals, as well as impact careers. However, there is no research exploring the implicit gender bias or stereotypes of occupational therapy students or practitioners. Therefore, the aim of this study was to examine the gender-career bias of occupational therapy students. To do so, occupational therapy students ($n = 54$) from three Midwestern United States graduate occupational therapy programs completed the gender-career attitudes implicit association test (IAT) – biases associating women with family, and men with career – as well as a survey polling demographic information. Participants' scores on the Gender-Career IAT were calculated and analyzed using descriptive statistics and a one-tailed t -test. Independent samples t -tests, one-way analysis of variance, and linear regression models were used to determine differences in implicit attitudes based on participants' demographics. The majority (79.63%) of occupational therapy students in this study implicitly associated men with career, and women with family. There were not statistically significant differences in implicit attitudes based on demographic characteristics. It is critical to be aware of the existence of gender-career implicit biases, like other biases, to identify and reduce negative effects these attitudes could have on professional identity development, professional and clinical interactions, clinical assessments and interventions, as well as personal decisions regarding career trajectory. This study's findings lay the foundation for future research on the effect of this bias on education, clinical practice, and career identity and longevity within the profession, as well as interventions to reduce implicit gender-career biases.

Introduction

Implicit bias or beliefs are those unconscious associations that influence behaviors and interactions with others as well as inform decisions we make about others (Gawronski & Payne, 2011). Importantly, unconscious beliefs may not align with our conscious beliefs and values, but can influence the decisions we make. Unconscious attitudes and beliefs regarding gender develop early in children and research finds they are consistent across cultures (Hentschel et al., 2013), context (Schein, 2001), and time (Haines et al., 2016). Biases are formed through stereotype mechanisms that shape beliefs about what a member of a group is like, as well as what a member of a group should be like or behave (Caleo & Heilman, 2013). Stereotypes, such as gender stereotypes, expose overarching beliefs and expectations about members of any given social group (Ellemers, 2018). Across multiple studies exploring gender stereotypes the defining characteristics of autonomy and agency were aligned to men and communality to women (Abele, 2003; Diekmann & Eagly, 2000). Beyond characteristics, stereotypes also have a strong influence on perceptions of gender to gender roles, largely influenced by traditional societal and cultural norms (Diekmann & Eagly, 2000). According to this gender-role stereotyping, people have unconscious attitudes that align women and men with traditional gender roles, such as women with caregiver and family, and men with provider or career.

Previous research of men and women in healthcare has found strong implicit bias that aligns men with career and women with family (Salles et al., 2019). What is startling from studies exploring gender implicit bias in healthcare is women healthcare professionals often hold even stronger gender-career implicit bias than men healthcare professionals (Kramer et al., 2021; Salles et al., 2019). In fact, within the occupational therapy literature one study examined how gender of a client influenced the occupational therapists' interactions, including evaluations of clients (Liedberg et al., 2010). These researchers found that occupational therapists asked questions focusing on daily occupations differently depending on whether the client was a woman, asking questions focused on home and family, or a man, asking questions focused on paid work. Gender also influenced occupational therapy students' choice of intervention activities for clients (Liedberg & Hensign, 2011). There is also evidence that occupational therapy students' life goals change during their educational experience, with 'raising family', which aligns with female gender role stereotyping, becoming a more important goal for occupational therapy students in their third year of school than it had been in year one of their programs (Nordholm & Westbrook, 1980). While the Nordholm and Westbrook (1980) findings may be dated, more recent evidence from outside the occupational therapy profession suggests gender-career bias persists in influencing attitudes (Levinson & Young, 2010; Salles et al., 2019).

Another area of concern with respect to the impact of gender bias in occupational therapy is the evidence suggesting it may play a role in salary inequities. According to the American Occupational Therapy Association (AOTA) 2019 Workforce and Salary Survey, 91% of the profession are women (AOTA, 2020). This percentage has remained relatively stable over the years, and given the current student makeup (90% women) there is no sign of significant change for the future (Harvison & AOTA, 2021).

However, despite the fact that women occupational therapists are clearly in the majority, the median salary for men occupational therapists was 14.9% higher than the median salary for women occupational therapists in 2018 (AOTA, 2020). Understanding why this earnings difference is so stark has been inadequately examined; however, it is possible that men occupational therapists have positions of leadership such as in academia, the highest paid employment context for occupational therapists (AOTA, 2020), are in management positions, or run their own private clinical practice, also some of the highest paid positions for occupational therapists (Beagan & Fredericks, 2018). The mere fact that this earnings gap has not been brought to full light, leaves us with a dearth of evidence to the causes of this disparity. Indeed, it was over thirty years ago that Frank (1992) highlighted the gap in analysis of issues regarding gender in the profession. It may be that issues of gender in occupational therapy are as Lorber (2018) described “the equivalent of fish talking about water” (p. 347).

The literature that does exist suggests this inequity in salary is strongly linked to issues related to the reproduction of gender-specific behaviors and societal beliefs and expectations in occupational therapy (Kaufman et al., 1997). Historically and at present, occupational therapy is woman-dominated and likely considered a ‘pink collar’ occupation (Howe, 1977). Pink-collar historically referred to more manual labor occupations (i.e., blue-collar) when filled primarily by women, however, contemporary interpretations of the term apply it to helping professions, such as nursing and education, and, as such, reinforce gender role stereotypes (Basu et al., 2015).

The findings of the limited amount of literature that exists suggest that gender can inform the development of the professional identity of occupational therapists, their career path, as well as what occupational therapists and occupational therapy students do during clinical practice; as such, it is of critical importance to further examine how attitudes operate in occupational therapy. Problematically, there is no research exploring the gender-career bias of occupational therapy students or occupational therapists. Creating an understanding of possible bias may be useful to support mentors, supervisors, and educators, on clinical decision-making, professional identity development, career development, and career choices of occupational therapy students as well as practitioners. Therefore, the objective of this study was to explore the gender-career implicit attitudes of occupational therapy students. To do so, 54 recently graduated occupational therapy students participated in the Gender-Career implicit association test (IAT; Nosek, Greenwald et al., 2007). The overarching research questions of this study were: 1) what are the implicit gender-career attitudes of recently graduated occupational therapy students, and 2) what demographic factors, if any, are associated with significant differences in occupational therapy students’ gender-career implicit bias.

Methods

Participants

After receiving human subject research approval from our institutional review board (IRB), participants were recruited via email from three large Midwestern occupational therapy graduate programs from May to June of 2020. A total of 54 occupational therapy graduate students, all of whom recently completed their final year of professional occupational therapy education, volunteered to participate in this study. The majority of participants were women (90.74%), nondisabled (90.74%), and White (79.63%; see Table 1). The mean age of participants was 27.39 ($SD = 4.74$). Family socioeconomic status was distributed across categories. Political orientation was measured on a sliding scale from 1 (very liberal) to 100 (very conservative); the median political orientation was 21.00.

Table 1

Demographics (n=54)

	<i>n</i>	%
Age (M [SD])	27.39 (4.74)	
Disabled		
No	49	90.74%
Yes	1	1.85%
prefer not to say	4	7.41%
Family socioeconomic status		
Less than \$20,000	2	3.70%
\$20,000 to \$39,999	6	11.11%
\$40,000 to \$59,999	5	9.26%
\$60,000 to \$79,999	8	14.81%
\$80,000 to \$99,999	6	11.11%
\$100,000 to \$149,999	12	22.22%
\$150,000 or more	8	14.81%
prefer not to say	7	12.96%
Gender		
Woman	49	90.74%
Man	5	9.26%
Political orientation (very liberal [1] to very conservative [100]; Mdn)	21.00	
Race		
White	43	79.63%
Asian or Pacific Islander	4	7.41%
Latinx	3	5.56%
Black	2	3.70%
Middle Eastern	1	1.85%
Other	1	1.85%

Measure

Data was collected via an online study, which included the Gender-Career IAT (Nosek, Greenwald et al., 2007), and a survey about demographics. The Gender-Career IAT examines people's implicit gender-career stereotyping – biases associating women with family, and men with career. The Gender-Career IAT presents participants with two target-concept discriminations (i.e., family, and career) with two attribute dimensions (i.e., female, and male) and has participants sort related stimuli (e.g., children, marriage, office, business, Julia, Daniel) in ways that are congruent (i.e., female-family, male-career) and incongruent (i.e., female-career, male-family) with stereotypes. Participants' reaction time is measured during congruent and incongruent rounds to determine the strength of their associations – the quicker the participants reaction time, the stronger their association between groups and traits.

IATs have been found to have construct, convergent, discriminant, and predictive validity, and test-retest reliability (Cunningham et al., 2001; Egloff et al., 2005; Greenwald et al., 2020; Greenwald et al., 2009; Lindgren et al., 2018; Nosek, Smyth et al., 2007; Nosek & Smyth, 2007). For example, IATs have been found to predict social behavior, including of health care professionals, and predict health outcomes (Greenwald et al., 2009; Nosek, Smyth et al., 2007). In fact, when Black, Indigenous, People of Color (BIPOC) live in states and regions higher in implicit racism, they have poorer health outcomes (Zestcott et al., 2022); moreover, physicians' implicit racial bias negatively hinders their clinical decision making for Black patients (Green et al., 2007; Splan et al., 2021).

Procedure

After accessing the online study website, which we hosted at Millisecond using Inquisit Web, and completing the informed consent, participants were provided with the Gender-Career IAT instructions. Participants were informed to press the 'E' key if the stimuli belonged to the categories on the left of the computer screen, and the 'I' key if it belonged on the right. They were instructed to sort stimuli as quick as possible without making errors – if they made a mistake and sorted the stimuli incorrectly, an 'X' appeared on the screen until they fixed their mistake. After the instructions, participants completed seven rounds of categorization tasks. In the first round, 'family' is on one side of the screen and 'career' on the other, and participants practice sorting related stimuli. In the second practice round, 'female' is on one side of the screen and 'male' on the other, and participants sort related stimuli. In the third and fourth rounds, both 'family' and 'career,' and 'female' and 'male' are presented at the same time in ways that are congruent and incongruent with stereotypes. In the fifth round (practice), only 'female' and 'male' are on the screen but they are presented on the opposite sides as previous rounds, allowing participants to become familiar with the switched locations. The sixth and seventh rounds are the same as the third and fourth except if they received the stereotype congruent setup prior, they now receive the stereotype incongruent setup, and visa-versa. Participants' response latencies are measured throughout all of the non-practice rounds to determine their Gender-Career IAT score. In addition to the Gender-Career IAT, participants completed questions about their demographics.

Analysis

Greenwald et al.'s (2003) updated IAT scoring protocol was used to calculate participants' Gender-Career IAT scores. Gender-Career IAT *D* scores, which range from -2.0 to 2.0, represent the strength of preference for female-family/male-career or female-career/male-family. Scores of -0.14 to 0.14 reveal no preferences, scores of 0.15 to 0.34 a slight preference for female-family/male-career, 0.35 to 0.64 a moderate preference for female-family/male-career, and 0.65 or greater a strong preference for female-family/male-career (Greenwald et al., 2003). Negative values of the same ranges reveal preferences for female-career/male-family. A one-tailed *t*-test was used to determine if the students' Gender-Career attitudes were significantly different from zero. Finally, to examine statistically significant differences in Gender-Career IAT scores across the occupational therapy students based on their demographics (i.e., age, disability, family socioeconomic status, gender, race, and political orientation), we utilized independent samples *t*-tests, one-way analyses of variance (ANOVAs), and linear regression models.

Results

Participants' Gender-Career IAT scores ranged from -0.42 (moderate preference for career-women/family-men) to 0.94 (strong preference for career-men/family-women; see Figure 1). The mean score on the Gender-Career IAT was 0.34 (*SD* = 0.27). A one-tailed *t*-test determined this score was significantly different from zero ($t [53] = 9.10, p < 0.001$, Cohen's $d = 1.24$ [large]), indicating an implicit preference for female-family/male-career.

Findings revealed 79.63% ($n = 43$) of participants preferred female-family/male-career, 3.70% ($n = 2$) preferred female-career/male-family, and 16.67% ($n = 9$) had no preference. The majority of participants slightly or moderately preferred female-family/male-career (see Figure 2).

We also ran a series of independent samples *t*-tests, one-way ANOVAs, and linear regression models to determine if there were statistically different Gender-Career IAT scores based on participant demographics (i.e., age; disability; income; gender; race; or political orientation). There were not statistically different differences in Gender-Career attitudes based on any demographic characteristics.

Figure 1

Boxplot of Occupational Therapy Students' Implicit Gender-Career Stereotypes

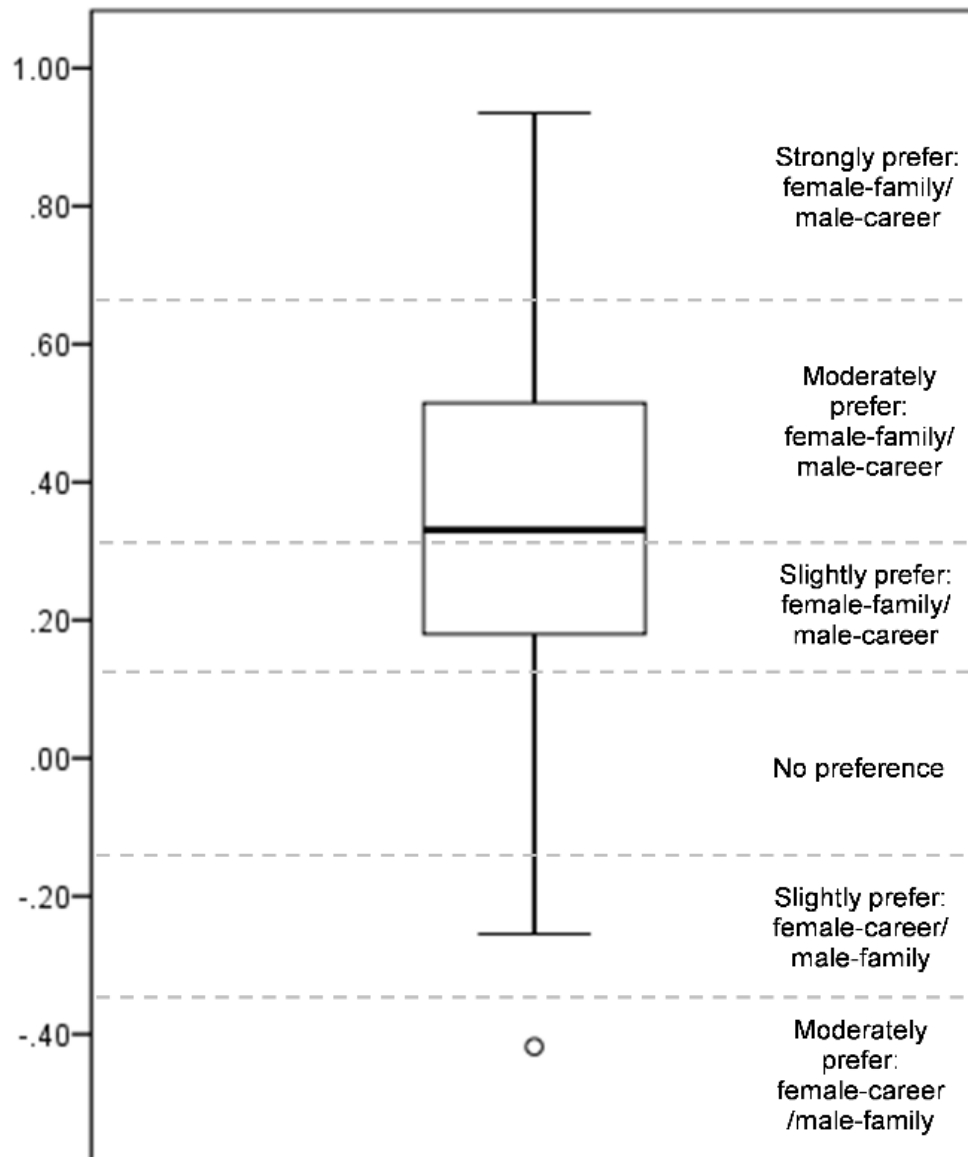
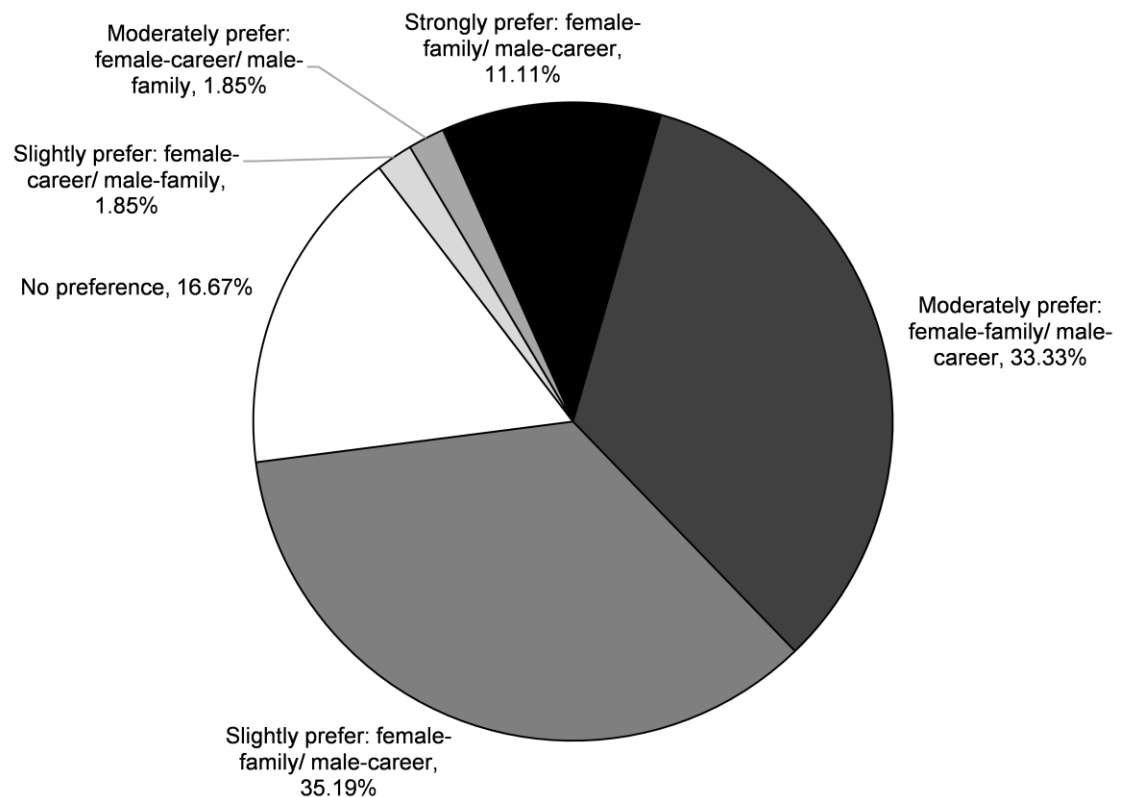


Figure 2*Strength of OT Students' Implicit Gender-Career Stereotype Preferences***Discussion**

The objective of this study was to explore the gender-career implicit attitudes of occupational therapy students. To do so, 54 graduating occupational therapy students participated in the Gender-Career IAT, which, to our knowledge, has never been used before with occupational therapy students or occupational therapy practitioners. For this reason, we were interested in exploring the gender-career stereotypes of occupational therapy students as this data may provide invaluable information to the profession for academic program and professional development. In doing so, we found the occupational therapy students in this study – those on the precipice of becoming occupational therapy practitioners in a predominantly women-dominated field – implicitly associated men with career, and women with family. The participants of this study, who were not only drawn to occupational therapy, but will also soon be entering the occupational therapy field, held biased attitudes about gender.

Women's career choices are likely informed by attitudes that may be related to gender roles and gender identity (Dinella et al., 2014). Other research finds that gender role beliefs are related to young adults' choices of careers in a helping profession (Ramaci et al., 2017; Schoon & Parsons, 2002). It may be occupational therapy students are drawn to the profession precisely because of its caring nature (Wallis et al., 2023). Research from the field of nursing identifies that social perceptions of nursing as primarily a 'woman's job' are due in part to stereotypes of the caring nature of the profession (Teresa-Morales et al., 2022). While beyond the scope of this study, the gender biases of participants could function to inform their beliefs of the role and characteristics of being an occupational therapy practitioner that is congruent with their own gender roles/identity.

Research indicates that gender stereotypes are still applied to people in women-dominated fields. For example, women in fields dominated by women are considered more warm and friendly than men in fields dominated by women (Halper et al., 2019). Gender stereotypes not only lead women to be funneled into certain fields, including those that are financially devalued, the more women-dominated an occupation becomes, the more it is devalued and the more its pay decreases (Levanon et al., 2009; Miller, 2017). In addition, while men in women-dominated fields are often portrayed as going against gender roles (Clow et al., 2015), they still have more opportunities for advancement than women and are often paid more (Miller, 2017; Torre, 2018). Future research should explore gender-career stereotypes of people entering the profession, including understanding if, and, how, these stereotypes influence a person being drawn to occupational therapy, this women-dominated field, and if, and, how, working in a women-dominated field impacts these stereotypes over time. A greater understanding of these issues could be used to inform professional efforts in recruiting and retention, as well as to support the professional development of individual practitioners.

It is also important to note that while most of the students in this study participated in gender-career stereotyping, doing so reflects the prevalence of gender stereotyping in society at large. For example, in Nosek, Smyth et al.'s (2007) study of 83,100 people, the mean Gender-Career IAT score was 0.39 (moderate preference for female-family/male-career; $SD = 0.36$), which is not significantly different to the occupational therapy students in our study ($t [83152] = -1.02, p = 0.31$). We believe that more research is needed to explore how gender-career stereotyping of occupational therapists compares to the general population, particularly as these stereotypes can affect women occupational therapists themselves as well as negatively impact the profession (Pollard & Walsh, 2000). Furthermore, biases of healthcare professionals can inform the selection of different intervention approaches (Jong et al., 2012) that can contribute to health disparities (Brewis et al., 2018; Carrillo et al., 2011).

Implications For Occupational Therapy Education

The results of this study have implications that can inform occupational therapy educators, clinical practice, as well as clinic and program management. Clinicians can critically reflect on the fact that gender-career stereotypes may (unconsciously) impact how they interact with clients and the interventions they provide and / or the occupations

on which they focus their goals. Additionally, women occupational therapists and occupational therapy students can also evaluate if and how their self-efficacy as an allied health professional is informed by internalized gender stereotypes, as this may impact their interdisciplinary interactions as well as their career trajectory. Administrators and clinical managers mentoring, advising or supervising woman occupational therapists and occupational therapy students can use this knowledge to understand the potential influences of gender-career biases on professional development.

Implications for Future Research

While our findings suggest new occupational therapists are likely to hold gender-career stereotypes, our findings also produce many questions which should be explored by future research. How does occupational therapy education itself reinforce or reduce gender-career stereotypes? How does working in occupational therapy, a field dominated by women, impact the stereotypes of people who work in the profession? How do gender-career stereotypes change throughout occupational therapists' careers – is it reinforced or diminished the longer one has been in this women-dominated field? Are there other intermediary factors that result in increased or decreased gender-career stereotypes? What are the implications of occupational therapists' stereotypes on their practice? Do women's internalization of stereotypes impact or inform the way they practice in different ways than men or people of other genders? What are successful intervention methods to reduce the gender-career stereotypes of occupational therapists? Are there interventions that can be used for current occupational therapy practitioners? What can be added to occupational therapy curriculum to reduce gender-career stereotypes while occupational therapists are still students? As much of the literature on gender, family, and career is from the 70s and 80s primarily focusing on people who identify as women, this area is rife with opportunity and need. Future research may want to re-examine the influences of family on careers in occupational therapy for people with different gender identities.

Limitations

When interpreting our findings, a number of limitations should be noted. All participants volunteered to participate – there may be a chance of self-selection bias as a result. The majority of the participants were women and White, although that parallels the profession more broadly (AOTA, 2020). Participants all came from three Midwestern universities. This was a small convenience sample. The Gender-Career IAT presents gender as a binary, excluding other gender, and conflates sex and gender with its use of male and female. It should also be noted that there are many critiques of IATs, including about generalizability and validity; however, at the same time, evidence also suggests IATs can accurately predict social behavior and judgements, including to better degrees than explicit measures (Greenwald et al., 2009). We believe these limitations also represent opportunities for future study.

Conclusion

Nurturing and caring are aligned with historically and socially constructed female gender characteristics. It is likely that the vocational choice students made to become occupational therapists is in part influenced by the fact that this career involves caring for others using a unique blend of artistry and science (VanPuymbrouck, 2020). However, this study provides strong evidence that women and men occupational therapists have implicit gender-career bias connecting women with family, and men with careers. It is critical to be aware of the existence of this implicit bias, like other biases, in order to identify and reduce the negative effects this might have on professional and clinical interactions, clinical assessments, and interventions, as well as personal decisions regarding career trajectory.

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