THE ROLE OF TRAINING IN SHAPING CLINICAL PSYCHOLOGY TRAINEES' INTENTIONS TO SERVE YOUTH WITH AUTISM AND INTELLECTUAL DISABILITES

EMMA RESENDES

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Abstract

Youth with developmental disabilities (DD) experience high rates of co-occurring mental health concerns but face significant barriers to accessing services. Mental health professionals report lower willingness to work with this population, and clinical psychology trainees frequently lack relevant training. The current study used the Theory of Planned Behaviour to understand the relationship between different training types (didactic, applied, hours of training) and trainees' intentions to work with autistic youth, youth with intellectual disability (ID), and autistic youth with ID. For autistic youth, training had no significant direct effect on intention, but confidence was a mediator across all training types. For youth with ID, didactic training was directly associated with intention, and attitudes mediated the effect of training hours. For autistic youth with ID, all training types had direct effects on intention, with no significant mediators. Findings suggest that enhancing graduate training may increase trainees' intentions to work with these populations.

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Introduction

Approximately 2-3% of youth are diagnosed as autistic (Public Health Canada, 2022; Shaw, 2025), and around 1% of youth are diagnosed with an intellectual disability (ID; Zablotsky & Blumberg, 2023). Additionally, ID and autism frequently co-occur: approximately 30–40% of autistic youth have a co-occurring ID (CDC, 2023), while about 20% of youth with ID are autistic (Bryson et al., 2008). Children with developmental disabilities (DD)[1], specifically those who are autistic, have an ID, or who have both co-occurring diagnoses, are significantly more likely to experience mental health concerns compared to children without DD (Flynn et al., 2017; Marquis et al., 2024; Munir, 2016). There is a clear need for tailored services and skilled clinicians to support the mental health of youth with DD (Brede et al., 2022).

Despite this elevated need for mental health support, many youth with DD have difficulty accessing services within mainstream mental health systems as a result of systemic and provider-level barriers. Individuals with DD experience systemic barriers to care, including limited services (Whittle et al., 2018) and long wait times (Mirzaian et al., 2024). People who have a dual diagnosis of a DD and a mental health condition are often rejected by mental health providers as a result of their DD diagnosis or rejected by disability services due to their mental health needs and behaviour, leaving this population with limited mental health support options (Wang et al., 2024; Whittle et al., 2019). The disability community has called for greater competence in supporting the mental health of autistic individuals and individuals with ID (Tesfaye et al., 2023; Whittle et al., 2018).

[1] In the context of this study, developmental disability is an umbrella term that refers to any individual with a diagnosis of autism and/or an intellectual disability.

These systemic barriers are further compounded by provider-level barriers, including a lack of clinician knowledge, confidence, and willingness to work with individuals with DD (Mirzaian et al., 2024). Mental health difficulties among people with DD are often incorrectly interpreted as "behaviour problems," and providers may hold wrongful assumptions that self-harm or emotional distress are intrinsic to a DD (Siddell, 2022; Whittle et al., 2019). Autistic adults have reported that clinicians sometimes assume their autism diagnosis limits their potential for meaningful progress within therapy (Maddox et al., 2020). Additionally, mental health professionals frequently report uncertainty about how to best adapt therapies or are reluctant to adapt services for individuals with DD (Moore et al., 2024; Tint & Weiss, 2018). Many clinical psychology trainees (70%) believe that the care of people with DD should be provided by "specialists," rather than a responsibility of all psychologists (Viecili et al., 2010). Together, these beliefs, attitudes, and uncertainties among providers may contribute to the high rates of unmet mental health needs among people with DD (Hassiotis & Turk, 2012; Menezes et al., 2021). Consistent with these challenges, mental health professionals, including clinical psychologists, frequently have lower intentions to work with youth with autism and intellectual disabilities compared to working with youth in the general population (Butler, 1990; Viecili et al., 2010; Werner, 2012); only 57% of clinical psychology trainees report that they expect their future practice would include people with DD (Viecili et al., 2010). This lack of willingness is frequently attributed to insufficient training and limited clinical exposure during graduate education (Bradbury et al., 2022; Dai et al., 2024; Ruark, 2021; Viecili et al., 2010; Weiss et al., 2010).

Graduate training is a key socialization period in which trainees develop their professional identity, internalize models of practice, and form beliefs about their competence

(Fouad et al., 2009; Peluso et al., 2010), making it an ideal period to challenge preconceived beliefs and promote work with youth with DD (Maddox et al., 2020; Viecili et al., 2010; Williams & Haranin, 2016). Evidence from allied health professions suggests that fieldwork experience and knowledge are important factors in developing preferences for future areas of practice (Crowe & Mackenzie, 2002; Matziou et al., 2009). Additionally, medical students are more likely to pursue certain career paths when exposed to high-quality teaching and long-term clinical placements (Stagg et al., 2012), highlighting the importance of intensive early career training in areas with populations who have high mental health needs. Mental health professionals who work with individuals with DD qualitatively report that their clinical placements were instrumental to developing their interest in working with this population (Russo-Gleicher, 2008; Walton et al., 2021), underscoring the value of training in promoting intention. Researchers have called for DD education to be provided to pre-graduates, rather than solely focusing on post-graduates, to improve mental health workforce competence in caring for these populations (Vi et al., 2023).

Despite the need for more psychologists to provide services to youth with DD and the importance of graduate training, there are no general accredited clinical psychology programs that require training in assessment and intervention for individuals with DD (Bowen et al., 2020). Most clinical psychology trainees (70%) have not taken a course on developmental disabilities during their graduate training. Many also lack direct clinical experience: 38% have never conducted an assessment, and 79% have never delivered an intervention to individuals with DD (Weiss et al., 2010). Notably, only 22% of clinical psychology graduate students report feeling prepared to meet the mental health needs of autistic clients (Dai et al., 2024). Over 80% of clinical and counselling psychology students report a desire for more direct experience, updated

coursework, expert guest lectures, and expanded curriculum focused on developmental disabilities (Weiss et al., 2010). More recently, trainees continue to express a lack of training on DD within graduate-level curriculum, with the majority of trainees reporting little to no training on DD (Tarzi et al., 2024). Given these training gaps and student-identified needs, it is important to examine how different components of graduate education may shape trainees' intentions to work with this population.

Training Predictors of Intention

Graduate training in school and clinical psychology includes both didactic (e.g. classes, lectures, workshops, etc.) and applied (e.g. practicums, internship, etc.) training components to develop both knowledge and practical skills (American Psychological Association, n.d.; Canadian Psychological Association, 2018b). Didactic and applied training have been shown to differentially impact mental health trainees' skills related to supporting youth with DD as well as their preferences for their future clinical specializations (Austriaco et al., 2019; Tsilimingras et al., 2018; Werner & Grayzman, 2011, p. 20).

Applied experience interacting with people with DD has been shown to improve attitudes and comfort in working with these populations among healthcare workers (Morin et al., 2024; Symons et al., 2014; Tracy & Iacono, 2008). Clinical psychology graduate students with assessment experience in DD are 2.91 times more likely to assert an intention to work with individuals with DD, compared to those without DD assessment experience. Similarly, clinical psychology trainees who regularly interacted with individuals with developmental disabilities were 3.4 times more likely to report intentions to work with this population. Additionally, individuals who work or volunteer in DD settings were twice as likely to share such intentions (Viecili et al., 2010). Research suggests that contact with individuals with ID has the potential to

reduce prejudice and improve attitudes; however, these effects are not universal and appear to depend on the quality and context of the interaction (Ryan & Scior, 2014; Seewooruttun & Scior, 2014).

Didactic training has been shown to play a key role in increasing both knowledge and confidence related to working with clients with autism and ID among mental health professionals (Dinecola & Lemieux, 2015; Tarzi et al., 2024). Didactic training elements, such as coursework and workshops, may be associated with enhanced attitudes and confidence in working with youth with autism (Clarke & Fung, 2022). For example, a four-week training program on DD for health and social service professionals improved confidence in relation to communication, providing mental health support, and assessing behaviour (Tarzi et al., 2024). At the graduate level, clinical psychology students who take an elective course in developmental disabilities are six times more likely to intend to work with this population (Viecili et al., 2010). Greater autism knowledge is associated with increased openness to treating autistic clients among psychotherapists (Lipinski et al., 2022) and clinicians with higher confidence tend to have more autism knowledge and a higher likelihood of having autistic clients in their caseloads (Crane et al., 2019). These findings suggest that didactic training improves clinician knowledge and confidence, which may function as key mechanisms influencing clinical engagement with individuals with DD. Both applied and didactic training independently contribute to trainees' competence and self-efficacy in working with individuals with DD; however, the relative importance of each type of training to intentions to serve this population remains unclear.

Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) provides a relevant framework for understanding the behaviour of clinicians and is widely used in health research (Perkins et al.,

2007; Romano & Netland, 2008). The TPB posits that attitudes, subjective norms, and perceived behavioural control shape intention (Ajzen, 1991; Fishbein & Ajzen, 2010). According to the TPB, a person's attitude indicates whether their appraisal of a behaviour is favourable or unfavourable. Subjective norms (also referred to as normative pressure) refers to the perceived social pressure to perform or avoid performing a behaviour, influencing the individual's perception of the behaviour. Lastly, perceived behavioural control or confidence refers to the extent to which a person believes they can successfully perform the behaviour, given their skill as well as the resources and opportunities available to them. Attitudes, normative pressure, and confidence interact to collectively influence intention, which is characterized as a person's self-reported likelihood of engaging in a behaviour (Fishbein & Ajzen, 2010). Self-reported intention is a strong predictor of future clinical behaviour among health professionals (Godin et al., 2008).

Several studies have used the TPB to understand health professionals' intentions to provide services to individuals with developmental disabilities. Werner (2012) employed the TPB to understand intentions to work with people with ID and those with dual diagnoses of ID and mental health challenges among social work, occupational therapy, speech-language pathology, special education, and nursing students. Subjective norms was the strongest predictor of intention, while attitudes was the second strongest predictor of intention. Self-efficacy did not significantly predict intention but influenced attitudes towards these populations (Werner, 2012; Werner & Grayzman, 2011). Similarly, attitudes and normative pressure consistently predict clinicians' intentions to provide services to autistic individuals, although self-efficacy has not emerged as a significant predictor (Maddox et al., 2019; Roudbarani et al., 2023). Roudbarani et al. (2023) additionally found that knowledge predicted attitudes, normative pressure, and clinicians' intentions to provide psychotherapy to autistic youth. While confidence did not

emerge as a significant predictor, it was highly correlated with knowledge, suggesting that these variables may have shared variance. Overall, understanding how training relates to attitudes, normative pressure, and confidence is essential to identifying the key factors that are related to mental health trainees' intentions to work with these populations (Maddox et al., 2019; Roudbarani et al., 2023; Werner, 2011; 2012).

Gaps in the Literature

There are several research gaps in this area. Although Viecili et al. (2010) identified specific formal and informal training experiences associated with intentions to work with individuals with DD, this work was conducted over 15 years ago, prior to substantial changes to training models, diagnostic manuals, and perspectives on neurodivergent affirming practices. This work also did not examine relevant psychological mechanisms that may underlie intentions (attitudes, confidence, normative pressure). While studies of clinicians have analyzed intention to work with autistic youth in relation to these variables, there is significant variability in clinicians' training experiences and their recency of education, limiting the relevance of the application of these findings to current graduate training (Roudbarani et al., 2023). As a result, there is a need for updated research on trainees to understand the relationship between current DD training and potential psychological mechanisms related to intentions to work with youth with DD. Moreover, research on clinical psychology training in this area is focused on adults or does not differentiate by client age (Viecili et al., 2010; Weiss et al., 2010), making the relationship between graduate training and attitudes, normative pressure, and confidence for youth with DD unclear.

Additionally, many studies use the overarching label of DD (Russo-Gleicher, 2008; Tracy & Iacono, 2008) and do not report results specific to autism, ID, or autism and ID, limiting the specificity and generalizability of findings. In particular, there is a dearth of research that

analyzes school, counselling, and clinical psychology graduate training specific to ID and co-occurring autism and ID. Examining training experiences relative to each of these three clinical groups would support an understanding of whether training has a differential impact on intention to work with each population and which components of training are most strongly associated with those intentions.

Objectives

The proposed study aims to investigate the relationship between breadth of didactic training, breadth of applied training, and overall quantity of training with mental health trainees' intentions to work with autistic youth (autism), youth with ID, and autistic youth with ID (autism+ID). Additionally, this study aims to explore whether the theory of planned behaviour variables (attitudes, normative pressure, confidence) mediate the relationship between training type and intention. The current study aims to answer four research questions:

1. Is the presence of any training (applied or didactic) associated with greater intentions to work with autistic youth, youth with ID, or autistic youth with ID? How is each training type associated with intentions to work with autistic youth, youth with ID, or autistic youth with ID?
    a. Hypothesis: The presence of any applied and didactic training are expected to be associated with greater intentions to work with autistic youth, youth with ID, and autistic youth with ID. Greater applied, didactic, and hours of training will be positively associated with intentions to work with autistic youth, youth with ID, and autistic youth with ID.
2. Is the presence of a personal connection with someone with DD associated with intentions to work with these populations?

   a. Hypothesis: The presence of a personal connection with someone with DD will be positively associated with intentions to work with youth with DD.

3. Which training components (1) breadth of didactic training, (2) breadth of applied training, or (3) total training hours, are most strongly associated with intentions to work with autistic youth, youth with ID, or autistic youth with ID?
   a. Hypothesis: Didactic training is expected to be more strongly associated with intentions to work with autistic youth. Applied training and hours of training are expected to be more strongly associated with intentions to work with youth with ID and autistic youth with ID.
4. Do attitudes, normative pressure, and confidence mediate the relationship between each training type and intentions to work with autistic youth, youth with ID, or autistic youth with ID?
   a. Hypothesis: Attitudes, normative pressure, and confidence will mediate the relationship between each training type and intentions to work with autistic youth, youth with ID, or autistic youth with ID. Attitudes are expected to be the strongest mediator for intentions to work with youth with ID and autistic youth with ID.

Method

Procedure

The original study received ethics approval from the Human Participant Review Committee of York University (#e2021-340). Participants were recruited from April to August 2024 through survey requests sent to the Directors of Clinical Training of every accredited school, counselling, and clinical psychology program across Canada and the U.S., who were asked to forward the participation invitation to trainees. The invitation to participate described a

survey gathering information about their training and knowledge related to providing mental health services to children and adolescents with complex mental health needs, but did not indicate that it was specifically about DD, ID, or autism to reduce sample selection bias. Accredited programs were identified through the Canadian Psychological Association and American Psychological Association websites. Participants provided informed consent to participate in the study and consented to the use of anonymized data for future lines of inquiry. The survey data were collected via Qualtrics. Participants were informed that their participation was voluntary and that they could stop participating in the survey at any time. The survey took approximately 20-25 minutes to complete, and participants received a $15 gift card for their participation in the study. Ethics approval for secondary analysis in the current study was obtained in December 2025 from the Human Participant Review Committee of York University (STU 2025-129).

Participants were included in the current study if they identified their primary client population as children or adolescents. Only participants with complete data on all measures of interest and who correctly completed the attention checks were included in the analyses. Twelve participants were removed from the full dataset due to incomplete data; 5 participants were removed due to random responding; and one participant was removed due to incorrect responses on the Conscientious Responders Scale.

Measures

All participants provided demographic information, including age, gender, ethnicity, current year in program, and educational background. Participants reported whether they had a personal relationship (immediate family member, extended family member, friend, co-worker, or

other) with someone who is autistic, has an ID, or both, which was collapsed into a binary variable indicating any personal relationship (1) or none (0).

Participants were randomly assigned to complete measures about one of three target populations (autism, ID, autism+ID). Participants reported on the types of training they had received related to the target population (0=No, 1=Yes). Components were either about didactic training or applied training. The didactic training composite variable included the following training components: whether participants had completed a graduate-level lecture, a graduate-level course, attended a professional development event, or attended a conference specific to their group condition (scores ranging from 0 to 4). The applied training composite variable included the following training components: whether participants completed a practicum during graduate school, rotation during internship, or had prior work experience with their assigned group condition (scores ranging from 0 to 3). Higher scores on each composite reflected a greater number of distinct training experiences within that domain. Each unique experience contributed one point to the composite score, as there is currently no evidence that any single type of training should be weighted more heavily than another in predicting intentions. Participants also indicated the overall number of training hours they had completed working with their assigned population condition on a 7-point scale (1=None; 2=1-10; 3=11-20; 4=21-30; 5=31-40; 6=41-50; 7=More than 51 hours).

Participants then reported their intention to provide services to their assigned clinical group in their future career (1=Highly Unlikely; 6=Highly Likely; Roudbarani et al., 2023). Further, trainees rated their attitudes towards delivering psychotherapy to their assigned condition on a 10-point sliding scale using opposite adjective pairs (e.g., Effective-Useless; Fishbein & Ajzen, 2010). A mean was computed across the five opposite adjective pairs to create

a total attitudes score. Trainees also completed a normative pressure measure assessing whether they believed other clinicians would provide psychotherapy to their assigned population (1=Strongly Disagree; 5=Strongly Agree) and how other clinicians and a supervisor might feel about them providing this service on a 5-point Likert scale (1=Strongly Disapprove; 5=Strongly Approve; Maddox et al., 2019). A mean was computed across the three normative pressure questions to create an overall normative pressure score. Lastly, trainees rated their confidence in effectively treating a client in their assigned population condition presenting with mental health problems on a five-point Likert scale (1=Not at All Confident; 5=Very Confident; Cooper et al., 2018). Internal consistency of the multi-item scales (attitudes and normative pressure) was assessed using Cronbach's alpha. Participants completed the Conscientious Responders Scale and attention check measures (e.g., "Please select 'Agree' to show you are paying attention").

Data Analysis

Non-parametric tests were used as a conservative approach given that the primary variables were measured using Likert-type scales, which are ordinal in nature (Jamieson, 2004). To answer question 1, Mann-Whitney U tests with Bonferroni correction were examined within each dataset (p adjusted = 0.025) to test whether any didactic experience or any applied experience was associated with intention to deliver care. Further, Spearman's rho was calculated to examine the relationships between training and the degree of intention. To answer question 2, Mann-Whitney U tests were used to identify differences in intention based on the presence of personal experience.

To answer questions 3 and 4, multiple mediation models were estimated using PROCESS Model 4, with parallel multiple mediators (Hayes, 2017). For each model, one type of training (didactic training, applied training, or total hours of training) served as the predictor, intention to

work with a given population was the outcome, and attitudes, confidence, and normative pressure were included as parallel mediators. Separate models were estimated for each training type and each of the three populations, resulting in nine models in total.

Mediation analyses evaluate whether a proposed mediator functions as an intermediate variable linking the independent variable to the outcome (Norman, 2010). Although the variables were derived from Likert-type scales and multi-item composites, visual inspection indicated that distributions were approximately symmetric. Consistent with prior research, such variables can be treated as approximately continuous when distributions are not severely skewed (Norman, 2010). Indirect effects were evaluated using 5,000 bootstrap resamples to generate 95% confidence intervals. Bootstrapping does not assume normality of the sampling distribution and provides a robust method for inference, particularly in small to moderate samples and when data deviate from parametric assumptions (Preacher & Hayes, 2008).

Results

Descriptive Statistics

All analyses were conducted using IBM SPSS version 31.0 (IBM SPSS Statistics, 2025). Participant demographic characteristics by group are presented in Table 1. The study included 191 clinical, counselling, and school psychology trainees across the United States and Canada. Participants ranged in age from 22 to 41 years, and the sample was predominantly composed of cisgender women. Most participants were enrolled in PhD programs. Overall, 64-73% of participants reported having a personal connection with someone with autism and/or an ID, and trainees varied in their level of clinical training experience, with a substantial proportion having completed two or more placements.

Table 1

Participant Demographic Characteristics by Group

Variable	Autism (n = 64)	ID (n = 67)	Autism+ID (n = 60)
Age (years), M (SD)	27.6 (3.8)	27.8 (3.3)	27.5 (3.6)
Range	22–40	22–40	22–41
Country, n (%)			
United States	45 (70%)	43 (64%)	41 (68%)
Canada	19 (30%)	24 (36%)	19 (32%)
Program Type, n (%)			
Master's	13 (20%)	10 (15%)	10 (17%)
PhD	44 (69%)	46 (69%)	44 (73%)
PsyD	7 (11%)	11 (16%)	6 (10%)
Gender Identity, n (%)			
Cisgender woman	54 (84%)	51 (76%)	55 (92%)
Cisgender man	8 (13%)	11 (17%)	4 (7%)
Transgender	—	1 (2%)	—
Non-binary	1 (2%)	2 (3%)	1 (2%)
Prefer not to disclose	1 (2%)	2 (3%)	—
Ethnicity, n (%)*			
White	48 (75%)	51 (76%)	49 (82%)
South Asian	3 (5%)	6 (9%)	4 (7%)
East Asian	2 (3%)	5 (8%)	4 (7%)
Black	4 (6%)	4 (6%)	4 (7%)
Latin American	5 (8%)	3 (5%)	3 (5%)
Middle Eastern	2 (3%)	4 (6%)	5 (8%)
Mixed Heritage	3 (5%)	2 (3%)	1 (2%)
Prefer not to disclose	1 (1.5%)	1 (1.5%)	1 (2%)
Personal Experience with DD, n (%)			
Yes	44 (69%)	43 (64%)	44 (73%)
No	20 (31%)	24 (36%)	16 (26%)
Number of Clinical Placements, n (%)			
None	13 (20%)	9 (13%)	21 (35%)
In first placement	5 (8%)	6 (9%)	2 (3%)
Number of Clinical Placements, n (%)			
Completed 1	4 (6%)	12 (18%)	3 (5%)
Completed 2	7 (11%)	17 (25%)	10 (17%)
Completed 3+	35 (55%)	23 (34%)	24 (40%)
Didactic Training, n (%)			
Lecture in a graduate-level course	53 (83%)	43 (64%)	22 (36%)
Entire graduate-level course	4 (6%)	1 (1.5%)	1 (1.7%)
Professional development events	24 (38%)	13 (19%)	14 (23%)
Attended a conference	15 (23%)	8 (19%)	8 (13%)
Applied Training, n (%)			
Practicum during graduate school	38 (59%)	27 (40%)	25 (42%)
Rotation during internship	9 (14%)	5 (8%)	6 (10%)

Variable	Autism (n = 64)	ID (n = 67)	Autism+ID (n = 60)
Prior work experience	25 (39%)	16 (24%)	20 (33%)

Note. Participants could select multiple responses for ethnicity and training variables; therefore, percentages may not sum to 100%.

Descriptive statistics are presented in Tables 1 and 2, and frequencies of training exposure are described below. Among participants assigned to the autism group, 55 of 64 (86%) reported having at least one didactic autism experience, and 48 of 64 (75%) reported at least one applied experience. Among participants assigned to the ID group, 46 of 67 (69%) reported at least one didactic ID experience, and 34 of 67 (51%) reported at least one applied experience. In the autism+ID group, 28 of 60 (47%) reported at least one didactic experience, and 37 of 60 (62%) reported at least one applied experience.

Table 2

Training Variables and TPB Variable Means by Group

Variable	Autism *(n=64)* *M (SD)*	ID *(n=67)* *M (SD)*	Autism+ID *(n=60)* *M (SD)*
Didactic Training *(0–4)*	1.50 (1.02)	0.97 (0.83)	0.75 (0.95)
Applied Training *(0–3)*	1.13 (0.90)	0.72 (0.83)	0.85 (0.80)
Hours of Training *(1–7)*	3.38 (1.97)	2.45 (1.78)	2.33 (1.68)
Attitudes *(0–10)*	7.30 (1.91)	6.91 (1.71)	6.96 (1.87)
Confidence *(1–5)*	2.70 (1.02)	2.36 (0.88)	2.40 (0.85)
Normative Pressure *(1–5)*	3.86 (0.61)	3.85 (0.71)	3.86 (0.76)
Intention *(1–6)*	4.17 (1.51)	3.60 (1.53)	4.05 (1.47)

Preliminary Analyses

The multi-item attitudes and normative pressure scales demonstrated generally good internal consistency across population conditions. The attitudes scale showed excellent reliability for each condition (Cronbach's α = .89-.95; 5 items), while the normative pressure scale demonstrated acceptable reliability (α = .68-.79; 3 items).

Mann-Whitney U tests were used to evaluate differences in the variables of interest across conditions by country and by education level (master's vs. doctoral). To control for Type I error due to multiple comparisons, a Bonferroni correction was applied across the seven tests within each group, resulting in an adjusted significance level of $p < .007$. As shown in Appendix Table A1, no significant differences between Canadian and U.S. participants were observed for didactic training, applied training, hours of training, attitudes, confidence, or normative pressure across the three population conditions (all $p > .13$, $r = .03$-$.15$). The only significant difference that emerged for intention was for the ID condition, with Canadians reporting significantly greater intentions to work with youth with ID than participants from the United States ($z = -3.17$, $p = .002$, $r = 0.39$). No significant differences were observed on any variables based on whether students were in a master's or doctoral program (all $p > .007$; Appendix Table A2).

Kruskal-Wallis H tests were conducted to examine differences between participants' responses across the three conditions. There was a significant effect of group, $H(2) = 19.9$, $p < .001$, $\varepsilon^2 = .09$, on didactic training. Post-hoc Dunn pairwise comparisons with Bonferroni correction showed that trainees reported significantly more didactic training experiences for autism compared to ID (adjusted $p = .01$) and to autism+ID (adjusted $p < .001$). There was no difference in didactic training between ID and autism+ID groups (adjusted $p = .30$). Differences in applied training were also significant ($H(2) = 7.67$, $p = .022$, $\varepsilon^2 = .03$), with a small effect size. Trainees reported significantly more applied training experiences for autism compared to ID (adjusted $p = .02$). No other pairwise differences were significant (autism vs. autism+ID: adjusted $p = .32$; ID vs. autism+ID: adjusted $p = .85$). Significant differences in hours of training between groups were also observed ($H(2) = 15.72$, $p < .001$, $\varepsilon^2 = .07$), indicating a medium effect size, with trainees reporting more hours of training for autism compared to ID (adjusted $p = .003$)

and to autism+ID (adjusted p = .001). The difference in hours of training in ID and autism+ID was not significant (adjusted p = 1.00). Kruskal-Wallis H tests were not significantly different in groups across attitudes ($H(2) = 2.12$, p = .34), confidence ($H(2) = 4.9$, p = .08), normative pressure ($H(2) = .12$, p = .94), and intention ($H(2) = 5.45$, p = .07).

Question 1: Training Effects

As shown in Table 3, intention to provide care was examined as a function of training. The between-subject factor was the dichotomous categorization of whether respondents received didactic (Yes/No) and applied (Yes/No) training. In the autism group, no significant differences were found in intention based on didactic or applied training exposure. In the ID group, participants who received didactic training had stronger intentions to provide care than those who did not, with a moderate effect size (r = .30). There was no significant difference with applied training. In the autism+ID group, participants who received didactic or applied training exposure had stronger intentions to provide care than those who did not, with a moderate effect (didactic: r = .36; applied: r = .41).

Table 3

Mann–Whitney U Tests Comparing Intention Based on the Presence of Any Didactic or Applied Training

Grouping Variable	Yes M(SD)	No M(SD)	z	*p*	r
Autism (*n*=64)					
Presence of Didactic Training	4.18 (1.49)	4.11 (1.76)	-0.02	.98	.00
Presence of Applied Training	4.35 (1.49)	3.63 (1.50)	1.79	.07	.22
ID (*n*=67)					
Presence of Didactic Training	3.89 (1.49)	2.95 (1.43)	2.40	.02*	.29
Presence of Applied Training	3.91 (1.60)	3.27 (1.40)	1.95	.05	.24
Autism+ID (*n*=60)					
Presence of Didactic Training	4.64 (1.16)	3.53 (1.52)	2.82	<.01*	.36
Presence of Applied Training	4.56 (1.09)	3.22 (1.62)	3.17	<.01*	.41

Note. M = mean; SD = standard deviation. p values marked with an asterisk indicate statistical significance at $p < .025$ (Bonferroni-adjusted). Effect size r calculated as $|Z| / \sqrt{N}$.

As shown in Table 4, correlations between training variables and intention to deliver care varied by condition. For the autism condition, intention was significantly associated with didactic training, applied training, attitudes, confidence, and normative pressure, but not with hours of training. In the ID group, intention was significantly associated with didactic training, hours of training, attitudes, and confidence, but not with applied training or normative pressure. In the autism+ID group, intention was positively associated with all training variables.

Table 4

Correlations Between Training Variables and Intention Across Groups

Variable	Autism (*n*=64)	ID (*n*=67)	Autism+ID (*n*=60)
Didactic	.41**	.38**	.40**
Applied	.35**	.24	.46**
Hours	.25	.30*	.50**
Attitudes	.43**	.56**	.46**
Confidence	.54**	.26*	.41**
Normative Pressure	.28*	.20	.32*

Note. p values marked with one asterisk indicate statistical significance at $p < .05$ and *p* values marked with two asterisks indicate significance at $p < .01$.

Question 2: Personal Experience

Results from Mann-Whitney U tests indicated that respondent intention was not associated with personal experience (Yes/No) with someone with autism and/or ID (Table 5).

Table 5

Mann-Whitney U Tests Comparing Intention Based on the Presence of Any Personal Experience with Someone with Autism and/or ID

Variable	Yes M(SD)	No M(SD)	Z	*p*	r
Autism					
Intention	4.25 (1.53)	4.0 (1.52)	0.70	.48	.09
ID					
Intention	3.72 (1.48)	3.38 (1.61)	0.76	.45	.09
Autism+ID					
Intention	4.2 (1.46)	3.63 (1.45)	1.38	.17	.18

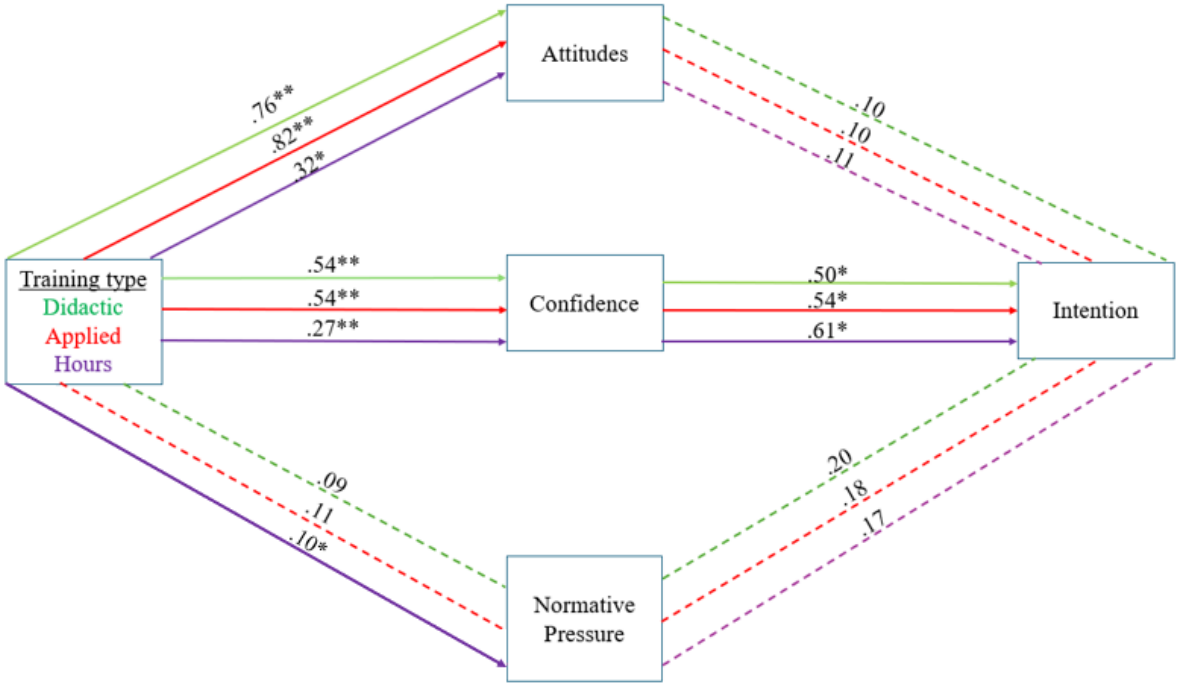
Note. Effect size r calculated as |Z| / √N.

Questions 3 & 4: Mediation Analyses

Detailed regression results are provided in Appendix Table A3, and the mediation analyses are summarized in Table 6. Correlations between predictors, mediators, and outcomes were in the expected directions and below 0.8, indicating no evidence of problematic multicollinearity among any of the variables. For the autism condition, prior to the inclusion of the mediators, each training type (didactic, applied, and hours) was significantly associated with intention (i.e., the Total Effect; Table 6, Model 1,2,3). The direct effects were no longer significant after accounting for the mediators. As shown in Figure 1, the indirect effect was significant only though the confidence mediator, for each training type: didactic (*B* = 0.27, 95% CI [0.04, 0.53]), applied *(B* = 0.29, 95% CI [0.07, 0.56]), and hours (*B* = 0.16, 95% CI [0.05, 0.34]; Table 6, Models 1-3). There were no significant indirect paths through normative pressure or attitudes.

Figure 1

Autism Condition Multiple Mediation Pathways

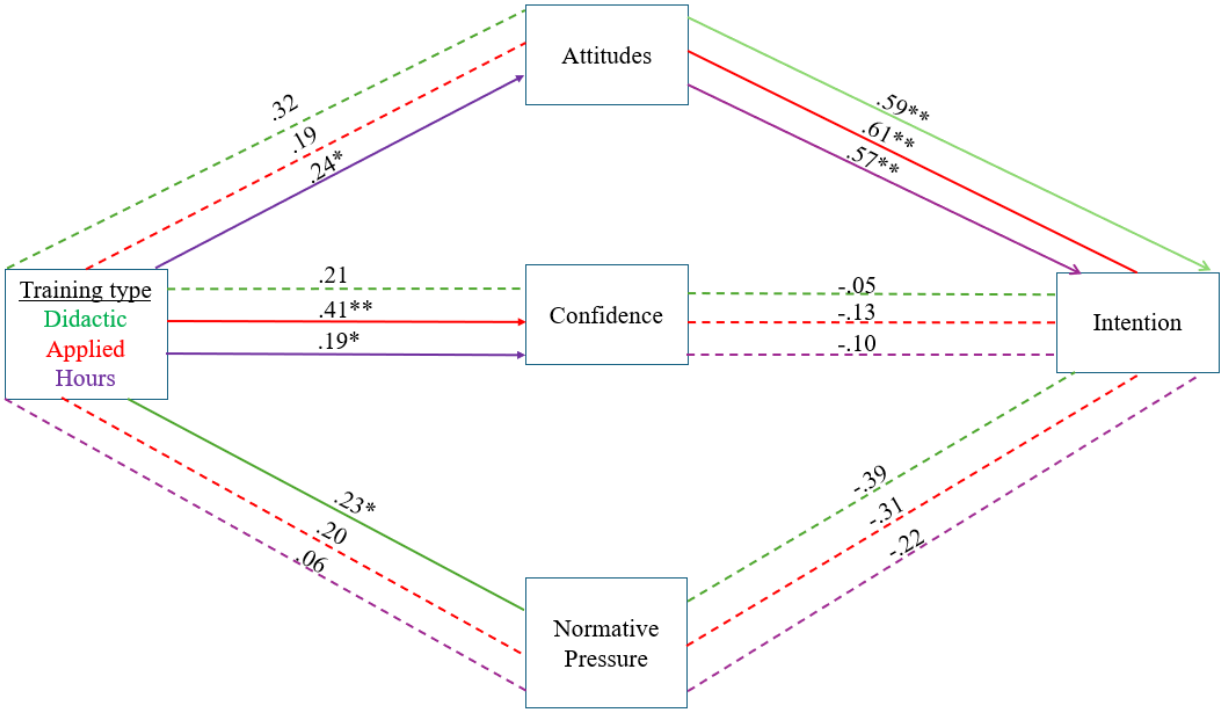


Note. Values represent unstandardized regression coefficients (*B*). $p < .05$*, $p < .01$**.

For the ID condition, didactic training and hours of training were significantly associated with intention, prior to the inclusion of the mediators (Table 6, Total Effect for Models 4 and 6). As shown in Figure 2, the direct effect of didactic training on intention remained significant following the inclusion of the mediators, while no indirect effects were significant. In contrast, the direct effect of hours of training was no longer significant after inclusion of the mediators. Instead, the indirect effect of hours of training on intention was significantly mediated by attitudes ($B = 0.13$, 95% CI [0.02, 0.25]). There were no significant indirect paths through confidence or normative pressure.

Figure 2

ID Condition Multiple Mediation Pathways



Note. Values represent unstandardized regression coefficients (*B*). $p < .05$*, $p < .01$**.

For the autism+ID condition, each training type (didactic, applied, and hours) was significantly associated with intention in the total effect analysis, prior to the inclusion of potential mediators (Table 6, Models 7-9). However, no significant indirect paths emerged for the potential mediators (attitudes, confidence, or normative pressure), while the direct association between training and intention remained significant, as shown in Figure 3.

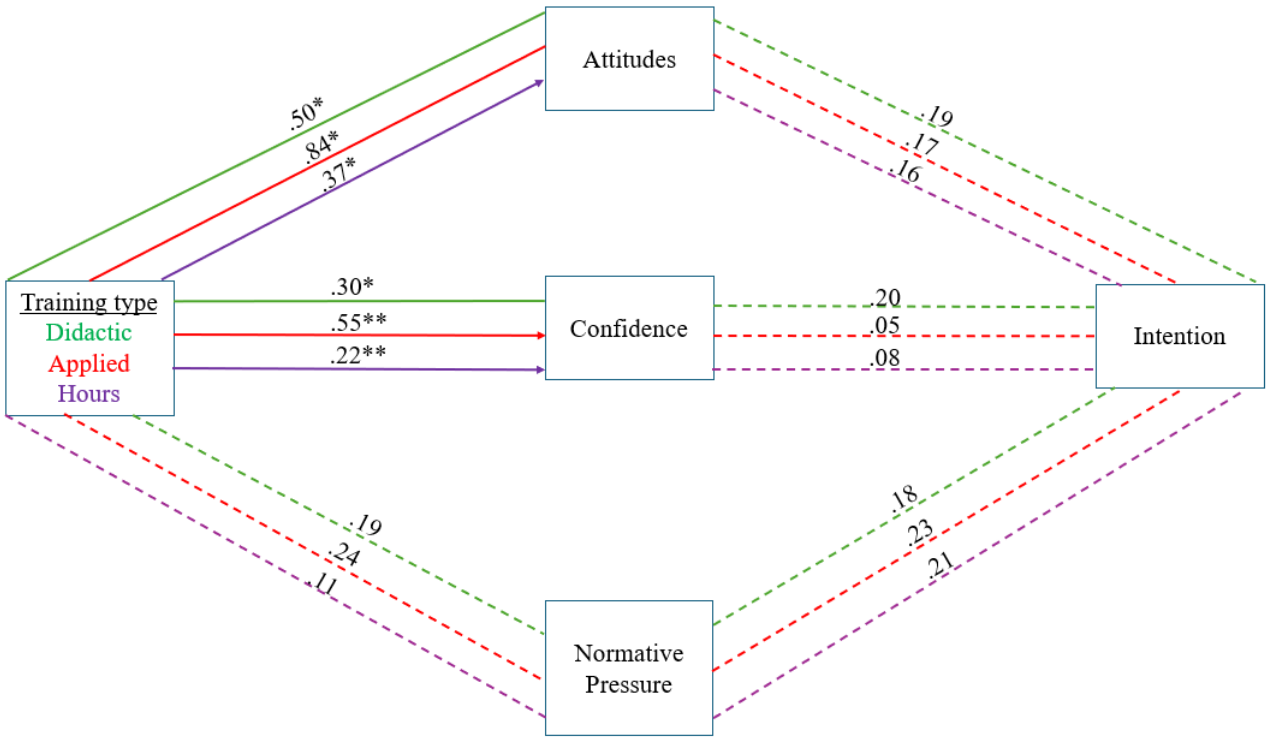
Table 6

Multiple Mediation Models

Condition	Model	IV	DV	R^2	Total effect (B, 95% CI, *p*)	Direct effect (B, 95% CI, *p*)	Total indirect effect (B, 95% CI)	Indirect effect via Attitudes (B, 95% Bootstrap CI)	Indirect effect via Confidence (B, 95% Bootstrap CI)	Indirect effect via Normative Pressure (B, 95% Bootstrap CI)
Autism	1	Didactic Training	Intention	0.31	0.58, [0.24, 0.93], .001*	0.22, [-0.16, 0.60], .25	0.36, [0.12, 0.64]*	0.08, [-0.06, 0.24]	0.27, [0.04, 0.53]*	0.02, [-0.06, 0.11]
Autism	2	Applied Training	Intention	0.31	0.58, [0.18, 0.98], .005*	0.19, [-0.23, 0.60], .38	0.39, [0.15, 0.70]*	0.08, [-0.05, 0.29]	0.29, [0.07, 0.56]*	0.02, [-0.07, 0.13]
Autism	3	Hours of Training	Intention	0.30	0.21, [0.02, 0.40], .03*	-0.006, [-0.20, 0.19], .95	0.21, [0.10, 0.38]*	0.08, [-0.02, 0.13]	0.16, [0.05, 0.34]*	0.02, [-0.06, 0.09]
ID	4	Didactic Training	Intention	0.44	0.64, [0.21, 1.06], .004*	0.55, [0.19, 0.91], .003*	0.09, [-0.25, 0.39]	0.10, [-0.06, 0.24]	-0.006, [-0.07, 0.04]	-0.05, [-0.14, 0.02]
ID	5	Applied Training	Intention	0.40	0.36, [-0.09, 0.80], 0.11	0.36, [-0.05, 0.76], .08	0.05, [-0.33, 0.32]	0.11, [-0.19, 0.41]	-0.05, [-0.28, 0.11]	-0.06, [-0.18, 0.05]
ID	6	Hours of Training	Intention	0.39	0.26, [0.06, 0.47], .01*	0.16, [-0.02, 0.34], .09	0.10, [-0.04, 0.22]	0.13, [0.02, 0.25]*	-0.02, [-0.13, 0.05]	-0.01, [-0.06, 0.02]
Autism+ID	7	Didactic Training	Intention	0.28	0.60, [0.22, 0.97], .002*	0.41, [0.03, 0.79], .03*	0.19, [0.02, 0.45]*	0.09, [-0.02, 0.29]	0.06, [-0.08, 0.29]	0.03, [-0.09, 0.21]
Autism+ID	8	Applied Training	Intention	0.30	0.86, [0.44, 1.29], <.001*	0.64, [0.15, 1.12], .01*	0.22, [-0.04, 0.54]	0.14, [-0.08, 0.38]	0.03, [-0.23, 0.35]	0.06, [-0.11, 0.26]
Autism+ID	9	Hours of Training	Intention	0.33	0.44, [0.25, 0.64], <.001*	0.34, [0.13, 0.56], .002*	0.10, [-0.001, 0.24]	0.06, [-0.02, 0.17]	0.02, [-0.08, 0.15]	0.02, [-0.05, 0.12]

Figure 3

Autism+ID Condition Multiple Mediation Pathways



Note. Values represent unstandardized regression coefficients (*B*). $p < .05$*, $p < .01$**.

Discussion

This study examined the relationship between clinical psychology training and intentions to work with autistic youth, youth with ID, and autistic youth with ID, among trainees in Canada and the United States. In line with previous literature on intentions to work with individuals with DD (Roudbarani et al., 2023; Werner, 2012; Werner & Grayzman, 2011), the Theory of Planned Behaviour was applied to examine the psychological factors linking training to intentions. Results indicated that both the quantity and type of training were associated with intentions, with different TPB pathways emerging between populations. Overall, training experiences were positively associated with intentions to work with DD populations, although patterns varied by

population condition. Mediation effects were observed through confidence in the autism condition and through attitudes for hours of training in the ID condition, while no significant mediation effects emerged through the mediators in the autism+ID condition.

It is notable that trainees reported receiving different amounts of clinical training related to each population. Trainees reported significantly more breadth of didactic training and overall hours of training for autism than for ID or autism+ID. Additionally, trainees had significantly more breadth of applied training in autism than ID. This pattern may reflect a broader emphasis on autism-related content relative to ID in child and adolescent psychological training programs, highlighting a potential gap between formal training and clinical realities. Although autism has received increasing emphasis within psychology curricula and professional training (Bradbury et al., 2022; Dai et al., 2024; Harris et al., 2020; Ruark, 2021), youth with ID experience comparable or higher rates of co-occurring mental health conditions and are disproportionately represented in high-acuity public mental health, hospital, and crisis-oriented services (Hassiotis & Turk, 2012; Marquis et al., 2024). Further, approximately 30-40% of autistic youth presenting for mental health care have co-occurring ID (Jon Baio et al., 2018; Lai et al., 2019), making competence in ID necessary for routine clinical practice. However, individuals with ID are often underrepresented in research and advocacy due to selection biases and barriers to participation (McCoy et al., 2020; Russell et al., 2019). As a result, autistic individuals with lower support needs and the ability to communicate verbally are often more visible within public and professional discourse (McCoy et al., 2020). The relative underrepresentation of ID within formal training may therefore leave trainees prepared for these more advocacy-salient populations, rather than for the complexity and severity that characterize a substantial proportion of real-world clinical caseloads.

Despite population differences in training exposure, there were no differences between master's- and doctoral-level trainees on any of the training variables. This result indicates that trainees may not gain substantially more training related to working with these populations after they progress to the doctoral level and that attitudes, confidence, and normative pressure may remain relatively stable in the absence of additional educational experiences. These differences likely reflect structural features of clinical, counselling, and school psychology education, rather than a lack of developmental progression. Autism and ID content is typically offered as elective coursework or optional practicum experiences in North American training programs, rather than as required components of graduate curricula (Bowen et al., 2020; Dai et al., 2024; Weiss et al., 2010). As a result, trainees may not consistently gain greater exposure to these populations simply by advancing to the doctoral level. Doctoral training primarily emphasizes increased depth of research, assessment complexity, and professional autonomy, rather than systematic expansion across client populations, unless students explicitly specialize. Consistent with literature suggesting that attitudes and intentions related to working with individuals with DD may form early in training (Viecili et al., 2010; Werner, 2012), trainees may self-select into autism or ID experiences based on pre-existing training interests, leading to similar training profiles across degree levels.

Across conditions, varying patterns emerged between training experiences and intention. In the autism group, intentions to work with autistic youth did not differ between trainees who had received didactic or applied training and those who had not. However, this result may reflect high baseline exposure to autism-related training across the sample. When trainees were asked about working with autistic youth, their degree of confidence was associated with their intention. Confidence emerged as a mediation between each training type and intention in the autism

condition. Prior research has also shown that greater autism training was related to higher confidence (Clarke & Fung, 2022; Crane et al., 2019; Dinecola & Lemieux, 2015) and greater intentions to provide care to individuals with DD (Viecili et al., 2010). At the same time, Roudbarani et al.'s (2023) study of clinicians found that the relationship between knowledge and intention to provide psychotherapy to autistic clients was partially mediated by attitudes and normative pressure, but not confidence. Similarly, Maddox (2019) found that clinician attitudes, but not confidence, were significantly associated with intentions to provide CBT to autistic clients. The current study differs from prior work in that it examined distinct training experiences among trainees rather than self-rated knowledge among practicing clinicians, constructs that, while related, capture different aspects of professional development and may operate through different psychological pathways depending on career stage. Trainees' confidence may be more malleable during graduate training because they are still building competence in the field, while established clinicians may exhibit more stable confidence and base their intentions more on attitudes or normative pressure.

Whereas training-intention associations in the autism condition operated primarily through confidence, a different pattern emerged in the ID condition. Notably, attitudes mediated the relationship between hours of training and intentions to work with youth with ID, suggesting that greater training exposure is associated with stronger beliefs about the value or desirability of providing services to this population. The mechanism through which didactic training is related to intention was not captured by the TPB variables and may be related to intention through variables not explored in the current study, such as anxiety reduction, reducing prejudice, or correcting misconceptions (Wang et al., 2021). Despite some research suggesting that contact with individuals with ID is important for attitudinal change (Kármán et al., 2022; Ryan & Scior,

2014), applied training was not related to attitudes in the ID condition. Contact alone may not be sufficient to elicit more positive attitudes (Bogart et al., 2022), as evidence shows that attitudes toward people with ID remain negative after contact without a structured intervention (Vasileiadis et al., 2021). Long-term interventions involving education and more extended contact may be more effective at changing attitudes toward ID, consistent with our finding that hours of training are associated with attitudes (Kármán et al., 2022; Morin et al., 2013). Given that didactic training is directly related to intention, but applied training was not, knowledge about disability may be necessary to address misconceptions prior to contact (Wang et al., 2021). A more defined intervention process involving didactic training and contact with people with ID may be more effective than contact alone in addressing attitudes towards this population (Vi et al., 2023).

In the autism+ID condition, all training types were significantly related to intention, with no significant mediation via attitudes, normative pressure, and confidence. Overall, these findings suggest that training experiences may be related to greater intentions to work with these populations; however, the exact pathway remains unclear. Given the complexity and highly stigmatized nature of this population, other variables such as confidence in specific skills, trainee anxiety reduction, or perceived support (e.g., supervision) may be relevant mechanisms mediating the relationship between training and intentions with this population (Razza et al., 2014). Additionally, general empathic concern for others has been identified as a predictor of attitudes towards people with ID, which may be a relevant mechanism for this population (Mirete et al., 2022). Given the cross-sectional nature of the method, it could also be the case that individuals with a greater desire to work with this population seek out more training of every kind, given the very high level of support needed by this group of service users.

The TPB was used as a framework for understanding the factors that are associated with intention, extending it to include training type as an independent variable. Findings of the current study provide partial support for the TPB. Confidence and attitudes emerged as important to intention; however, pathways differed across populations, suggesting that intention formation for trainees may be population specific. The theory may require adaptation when applied to complex clinical populations, such as those with autism and ID. Although normative pressure has been shown to be related to intention to work with youth with DD among trainees in other health and education professions, not including clinical psychology (Werner, 2012; Werner & Grayzman, 2011), normative pressure did not emerge as significantly associated with intention in any of the models. Normative pressure scores were moderately high and had relatively limited variability, which may have reduced its ability to predict intention. Serving a diverse public population is a key tenet of the American Psychological Association and the Canadian Psychological Association accreditation bodies, and a current focus of training; therefore, the act of choosing to work with these populations may be less stigmatized among trainees (American Psychological Association n.d.; Canadian Psychological Association, 2018a). School, counselling, and clinical psychology students, in particular, may face uniform normative pressure to provide services to these populations, limiting the association between normative pressure and intention.

Overall, findings highlight that training is associated with trainees' intentions to work with autistic youth, youth with ID, and co-occurring autism+ID, providing a potential avenue of addressing long-standing gaps in clinical care. Many trainees have identified a desire for more training in this area, and there is a need for intentionally designed training to address larger systemic health inequities (Viecili et al., 2010; Weiss et al., 2010). Training needs and design should be considered in relation to each population to maximize the potential impact of training

on intention. Findings suggest that training for autism may benefit from an emphasis on skill development and confidence building through multimodal experiences that include both diverse didactic and applied components (Clarke & Fung, 2022; Dinecola & Lemieux, 2015). In contrast, training related to ID may place greater emphasis on a variety of didactic learning opportunities with integrated contact, higher quantities of training, and fostering attitudinal change. Addressing affective barriers toward individuals with ID may require a greater amount of training (Morin et al., 2013). For service users with co-occurring autism and ID, training approaches that integrate both didactic and applied elements throughout the curriculum and considers the complexity and stigma associated with these populations may be particularly valuable (Wang et al., 2021). One-size-fits-all training is unlikely to optimally increase intentions across populations; an individualized approach to developing training for each population may be necessary to capture the nuances in challenges and ableism related to each population.

There are several limitations to the current study. Cross-sectional design limits inference about change over time. Intentions should be interpreted as correlates, rather than developmental outcomes. Longitudinal or pre-post designs would help test whether training exposure corresponds to changes in intention or practice. Additionally, the sample was relatively small for mediation, which may have resulted in the model being underpowered.

Second, the measurement of key variables may have constrained findings. In contrast to other research (Viecili et al., 2010), personal experience was not significantly associated with differences in intention. The personal experience variable was measured as a binary indicator and did not distinguish between autism, ID, and co-occurring autism+ID, which may have limited its ability to capture important aspects of personal contact. Previous research suggests that the closeness and quality of contact are more strongly related to reduced prejudice than frequency or

mere exposure (Blundell et al., 2016; Keith et al., 2015). Future research should adopt a more nuanced measure of personal experience to fully capture this relationship. Additionally, the mediators in the current study were specific to psychotherapy and did not capture attitudes, confidence, and normative pressure related to assessment or diagnosis. Although psychotherapy represents a core component of clinical practice and a central context in which trainees deliver mental health interventions, future studies should include assessment and diagnostic domains to provide a more comprehensive understanding of intention. Similarly, the current study treated didactic and applied training, as well as training breadth and hours, as separate variables. The use of these variables may limit the interpretability of the findings, given that these elements do not occur independently in practice. Similarly, all training elements within the didactic and applied training total scores were equally weighted (e.g. a full course vs. a single lecture both add 1 point). Although there is insufficient evidence to justify differential weighting, this approach may discount meaningful variation in exposure. This study also does not include research experience as a form of didactic exposure. Future studies should consider this variable as a form of didactic experience. Examining the association between a range of training experiences and intention (e.g. through structural equation modelling) may help clarify which components of training are most influential.

Similarly, training was measured using broad indicators that did not capture quality. This may be an important variable as perceptions of teaching quality and supervisor expertise have been shown to be strongly related to subsequent career intentions among medical students (Stagg et al., 2012). Quality of contact with people with ID has also been linked to reduced prejudice (Keith et al., 2015). Studies that assess instructional quality and supervisory expertise could clarify these pathways.

More research is needed to understand the mechanisms linking training to intention. Specifically, evaluating the ways that training interventions can best target improved confidence in autism and improved attitudes in ID, specific to school, counselling, and clinical psychology training, to foster greater intentions. The theory of planned behaviour variables did not mediate the relationship between training and intention for co-occurring autism and ID. Future research examining additional mediators, including anxiety reduction, supervision, or empathy, may help elucidate the mediators underlying the relationship between training and intention in the autism+ID condition. Other models of behaviour change should be explored to understand intention in each population, as the current study has shown that the TPB operates differentially depending on the population being studied. Additionally, it is possible that there is a stepwise order to the TPB variables within mediation, as Werner (2012) found that increased confidence in working with individuals with ID predicted more positive attitudes. Sequential mediation of these variables is an important line of future inquiry. Future research on training may consider including a measure of intention to provide services as an outcome measure before and after the training to understand whether training supports changes in provider desire to provide services to the population.

Tailored training developed with the goal of increasing intentions to work with youth with DD has the potential to prepare clinicians to serve these populations and address broader systems-level disparities. Many programs struggle to provide any form of training related to DD and institutions often cite a lack of faculty knowledge as a primary factor (Dai et al., 2024; Ruark, 2021). Without deliberate efforts to develop trainees' competency, a perpetual cycle of insufficient training will persist. Developing focused and population-specific training to increase intention would help to reduce care inequities for these populations who experience higher rates

of mental health challenges and significant service disparities (Flynn et al., 2017; Frank et al., 2020; Lunsky et al., 2007), Further, psychologists have a professional responsibility to serve diverse and marginalized populations (American Psychological Association, n.d.; Canadian Psychological Association, 2018a); accreditation bodies should consider making training in autism, ID, and co-occurring diagnoses mandatory for graduate students in clinical, counselling, and school psychology programs. This training requirement would align with the United Kingdom, where clinical psychology trainees are required to complete a mandatory 6-month placement in a DD setting during their training to build workforce competence in this area (British Psychological Society, 2021).

The current study provides evidence that graduate training experiences are positively associated with school, counselling, and clinical psychology trainees' intentions to work with youth with autism, ID, and co-occurring autism and ID. Findings highlight the importance of tailoring training for each population, rather than using the overarching label of DD. By clarifying how different types of training are related to intentions, this study provides actionable guidance for graduate programs and accreditation bodies on how to best prepare trainees to work with these populations. Overall, these results suggest that individualized training in these areas is an important component of broader efforts to address systemic disparities in mental health care for autistic youth, youth with ID, and autistic youth with ID.

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Appendix A

Table A1

Mann-Whitney U Tests Comparing Country (Canada vs. US) Across Variables of Interest

Variable	N	Z	p	r
Autism				
Didactic	64	0.32	.75	.04
Applied	64	0.31	.75	.04
Hours	64	-0.28	.78	.03
Attitudes	64	0.52	.61	.06
Norm Pressure	64	-1.22	.22	.15
Confidence	64	0.51	.61	.06
Intention	64	-0.72	.47	.09
ID				
Didactic	67	-0.20	.84	.02
Applied	67	1.05	.30	.13
Hours	67	-0.52	.60	.06
Attitudes	67	-1.28	.20	.16
Norm Pressure	67	0.72	.47	.09
Confidence	67	1.31	.19	.16
Intention	67	-3.17	<.01*	.39
Autism+ID				
Didactic	60	-0.20	.84	.03
Applied	60	0.66	.51	.09
Hours	60	-1.50	.13	.19
Attitudes	60	0.23	.82	.03
Norm Pressure	60	1.34	.18	.17
Confidence	60	1.08	.29	.14
Intention	60	-0.94	.35	.12

Note. * = significant ($p < .007$); effect size r calculated as $|Z| / \sqrt{N}$.

Table A2

Mann-Whitney U Tests Comparing Education Level (Master's vs. Doctoral) Across Variables of Interest

Variable	N	Z	p	r
Autism				
Didactic	64	-0.41	.68	.05
Applied	64	0.21	.83	.03
Hours	64	0.11	.91	.01
Attitudes	64	-0.04	.97	.01
Norm Pressure	64	-1.47	.14	.18
Confidence	64	-0.21	.84	.03
Intention	64	-1.34	.18	.17
ID				
Didactic	67	-0.07	.95	.01
Applied	67	1.90	.06	.23
Hours	67	0.71	.48	.09
Attitudes	67	-1.63	.10	.20
Norm Pressure	67	-0.47	.64	.06
Confidence	67	0.19	.85	.02
Intention	67	-1.62	.11	.20
Autism+ID				
Didactic	60	0.74	.46	.10
Applied	60	1.55	.12	.20
Hours	60	1.19	.24	.15
Attitudes	60	1.21	.23	.16
Norm Pressure	60	0.20	.84	.03
Confidence	60	1.56	.12	.20
Intention	60	0.41	.69	.05

Note. Effect size r calculated as $|Z| / \sqrt{N}$.

Table A3

Mediation Models: Association between Independent Variable and Mediator; Mediator and Dependent Variable

Population	Mediator / Path	Didactic Training (B; 95% CI; p)	Applied Training (B; 95% CI; p)	Hours of Training (B; 95% CI; p)
Autism	**X - M**			
	Attitudes	0.76; 0.33-1.19; <.001*	0.82; 0.21-1.31; .001*	0.32; 0.09-0.55; .007*
	Confidence	0.54; 0.33-0.75; <.001*	0.54; 0.28-0.78; <.001*	0.27; 0.15-0.38; <.001*
	Normative Pressure	0.09; -0.06-0.24; .22	0.11; -0.06-0.28; .19	0.10; 0.03-0.18; .005*
Autism	**M - Y**			
	Attitudes	0.10; -0.14-0.34; .40	0.10; -0.14-0.34; .40	0.11; -0.12-0.35; .34
	Confidence	0.50; 0.03-0.97; .037*	0.54; 0.09-1.00; .02*	0.61; 0.14-1.09; .01*
	Normative Pressure	0.20; -0.40-0.80; .51	0.18; -0.42-0.78; .55	0.17; -0.45-0.79; .58
ID	**X - M**			
	Attitudes	0.32; -0.18-0.82; .21	0.19; -0.32-0.70; .46	0.24; 0.01-0.47; .04*
	Confidence	0.21; -0.05-0.47; .11	0.41; 0.17-0.65; .001*	0.19; 0.07-0.30; .002*
	Normative Pressure	0.23; 0.03-0.44; .02*	0.20; -0.01-0.40; .06	0.06; -0.04-0.16; .24
ID	**M - Y**			
	Attitudes	0.59; 0.38-0.81; <.001*	0.61; 0.39-0.84; <.001*	0.57; 0.34-0.79; <.001*
	Confidence	-0.05; -0.43-0.32; .77	-0.13; -0.55-0.29; .55	-0.10; -0.51-0.31; .63
	Normative Pressure	-0.39; -0.89-0.11; .12	-0.31; -0.83-0.21; .24	-0.22; -0.73-0.30; .40
Autism+ID	**X - M**			
	Attitudes	0.50; 0.00-1.00; .04*	0.84; 0.27-1.41; .005*	0.37; 0.09-0.64; .009*
	Confidence	0.30; 0.08-0.52; .009*	0.55; 0.31-0.79; <.001*	0.22; 0.10-0.34; <.001*
	Normative Pressure	0.19; -0.01-0.39; .07	0.24; -0.001-0.48; .05	0.11; -0.004-0.23; .06
Autism+ID	**M - Y**			

Attitudes	0.19; -0.05-0.42; .11	0.17; -0.06-0.40; .14	0.16; -0.06-0.39; .15
Confidence	0.20; -0.30-0.71; .42	0.05; -0.48-0.57; .86	0.08; -0.42-0.57; .76
Normative Pressure	0.18; -0.35-0.71; .49	0.23; -0.29-0.75; .38	0.21; -0.30-0.71; .41

Appendix 1. X represents training type. M represents the mediating variables: attitudes, confidence, and normative pressure. Y represents intention. The table displays regressions within the mediation model from each training type to each mediator (X-M) and each mediator to intention (M-Y).