

5-2019

# Neurodiversity and Autism Spectrum Disorders: Grounding for social work education and praxis

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Running head: NEURODIVERSITY AND AUTISM SPECTRUM DISORDER

Neurodiversity and Autism Spectrum Disorders: Grounding for social work education and praxis  
by

Katie Terry

A Banded Dissertation in Partial Fulfillment of the Requirements for the Degree  
Doctor of Social Work

St. Catherine University | University of St. Thomas  
School of Social Work

May 2019

### Abstract

This banded dissertation includes three products that use neurodiversity as a theoretical framework to explore how autism spectrum disorder (ASD) has been treated in the social work academy. Neurodiversity is a social movement amongst some individuals with ASD who see the diagnosis as a difference, primarily manifested neurologically, in how their brains, senses, emotions and beings are different than typical people, which itself represents a type of diversity.

The first product is a paper that explores the emergence of the neurodiversity movement in the early 2000's and the cogent factors that inspired this movement. The connection to social work's strength-based practice (Saleeby, 1992) critical disability theory, and ideas of empowerment and self-determination are part and parcel of the neurodiversity movement, yet the social work academy has been largely unaware of this trend.

The second product, a cross-sectional survey study examined the disconnect between social work education and ultimately, the preparation and desire of social workers to practice with people with ASD. Regression analysis revealed that contact with persons with ASD was the greatest predictor in the model. Overall, the model significantly predicted the desire to work with people with autism  $F(6, 272) = 36.3, p < .0001, R^2 = 0.51, \text{Adjusted } R^2 = 0.50$ .

The third product is a peer-reviewed poster presentation entitled: *Neurodiversity: The New Cultural Competency in Social Work Education* presented at the Council on Social Work Education's 64<sup>th</sup> Annual Program Meeting (APM) on November 11, 2018. The poster included an overview of the development of neurodiversity and its application into social work education. Specifically, the poster looked at ways social work practitioners could more easily understand and communicate with those on the autism spectrum.

*Keywords:* Neurodiversity, Autism Spectrum Disorder, social work education, cultural competency, social work practice

### Dedication/Acknowledgements

I wish to thank my husband Robert Terry who has been steadfast in his support, and Margaret Brooks-Terry, PhD whose wisdom and experience in academia has helped me throughout this journey. I want to thank Maureen Riley-Behringer, PhD who has unwaveringly supported my belief in myself. I owe an exceptional amount of gratitude to my dissertation advisor, Kingsley Chigbu, PhD who provided mentorship, patience and constant support throughout my dissertation and job search. Finally, my fellow Cohort 3 colleagues have been truly inspirational, and I will always be indebted to them for their love, acceptance and friendship.

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## **Neurodiversity and Autism Spectrum Disorders: Grounding for Social Work Education and Praxis**

Although the issues are complex and undiscovered, there seems to be a disconnect between social work education and practice and the field of disabilities, especially developmental disabilities. Historically, people with disabilities have been institutionalized, and it wasn't until the 1970's, when federal legislation (Rehabilitation Act of 1973, Education for all Handicapped Children Act of 1975) codified the civil rights of people with disabilities that the landscape began to change. Importantly, this shift from understanding disability as an individual problem (medical model) towards an understanding of a social issue (social model) was a fundamental one and was accompanied by deinstitutionalization and efforts at community inclusion.

With deinstitutionalization and civil rights legislation, the disability field was wide open for development of practical interventions to service people with disabilities in their communities. The time was right for helping professionals to develop curriculum, training, and policy initiatives. Consequently, the fields of psychology, rehabilitation and special education have all laid claim to disability interventions, but social work has not followed suit. Special education began to flourish as educators sought ways to work with children with disabilities. Indeed, the primary autism intervention has been initiated from psychology as Applied Behavioral Analysis was developed and refined in 1970 by Ivar Lovaas at UCLA. Other professions rapidly re-tooled and studied effective strategies to work with those with developmental disabilities perhaps because the demand for community services and special education was increasing so those specific fields could not ignore the problem.

Still today, schools of social work have not taken the lead in developing the workforce for social work practice with people with ASD. In an NASW survey in 2007, only 2% of social workers reported working in the field of developmental disabilities (Whittaker and Arrington, 2008). In another study Laws, Parish, Scheyett, and Egan (2010) examined social work curricula across 50 schools of social work in the United States and found that only three schools (6%) offered a concentration in intellectual or developmental disability; only 3% offered any courses on ASD.

The lack of attention to ASD in social work is not new. As far back as 1993, Bishop and Rounds found that less than two thirds of MSW students had training on disability related issues, with under half learning about available resources for those with ASD (Bishop and Rounds, 1993). Twelve years later, a study of master's students in one California program found that two thirds of second year masters students had received no training on disability related issues, but almost half had worked with a person with a developmental disability (Nash and Potts, 2005). As recently as 2015, researchers found that students had low levels of knowledge about ASD, with a third saying they had no exposure to information in their social work courses (Dinecola and Lemieux, 2015).

To explain this phenomenon, regarding how disability is integrated in social work education, the recent research of Ogden, McCallister & Neely-Barnes (2017) uncovered an overcrowded curriculum, lack of faculty expertise, the marginalization of disability studies, and a lack of teaching resources as relevant factors in exclusion of disability content in social work education. Further, their study found that the materials available to include disability into the curriculum were shallower, focused on physical disability, and lacked a strength-based perspective (Ogden, McCallister & Neely-Barnes, 2017). This trend of inadequate curriculum has far greater impact given the rising numbers of ASD.

Unfortunately, “social work has a long history of student disinterest in serving persons with developmental disabilities” (Burge, Druick, Caron, Oulelette-Kuntz & Paquette, 1999, p. 51), a theme also captured by Ogden and her colleagues as a major barrier in social work education. Since student interest also drives curriculum in higher education, this is both a symptom and a consequence of the lack of interest in working in the field of developmental disabilities. In examining various helping profession students, nursing and social work students responded with the lowest scores of desiring to work in the developmental disability field as compared to special education, occupational and speech therapy (Werner and Grayzman, 2011).

This lack of interest is perplexing but could be partly due to the stigma that is prevalent in society’s views of the disabled, or the assumption that work with those with intellectual disabilities may appear to be less rewarding relative to other practice areas, despite the fact that social work’s signature theory, person-in-environment (i.e. the ecological model) is the best, comprehensive, holistic approach to disabilities. “Disability is a person –task –environment— interaction, rather than something inherent in an individual, and it arises from the individual’s condition, the task in which they are engaged, and the environment in which they engage with the task” (Stiers, Perry, Kennedy & Sherer, 2011, p. 574). Social work therefore is a natural fit for disability practice.

The purpose of this banded dissertation is to explore reasons why social work, as a profession, is less interested in working with people with autism. There has been scant research in this area, and as more students with ASD reach adulthood and lose the safety net of school services, social workers who have case management skills and foundational knowledge about ASD can fill a valuable role, provided they have the knowledge. Since the field of social work has not embraced practice with those with developmental disabilities, and specifically autism this

research will hopefully uncover some reasons, and thus serve as a starting point to address those reasons. Social work education has not kept pace with practice course(s), research, nor social policy with ASD, and the findings from this banded dissertation may serve as a catalyst for development of research and curricular materials, as this was cited as a major barrier in social work education (Ogden, McCallister & Neely-Barnes, 2017). A look at how the findings will apply to social work research, practice, and curricular development will be offered.

### **Conceptual Framework**

The conceptual framework for this dissertation is neurodiversity. A new term in the discourse on disabilities, neurodiversity has arisen in the past several years to describe those with ASD. The fundamental notion is that rather than seeing autism as a deficit, dysfunction or even as a mental health disorder as it is currently classified in the DSM 5, it is regarded as a “naturally occurring cognitive variation with distinctive strengths that have contributed to the evolution of technology and culture” (Silberman, 2016, p. 16). This is a far cry from the medical model, which asserts “disability is a deficit in one’s being and is reflected in the culturally dominant discourse advocated by the medical and educational authorities of “managing” people with ASD” (Cascio, 2012, p. 273.) Neurodiversity would explain the quirks and behavioral oddities displayed by those with autism as harmless. Neurotypicals view this as problematic. An autism pride has emerged from those with ASD who posit that their unique talents should be celebrated instead of eliminated (Cascio, 2012). Instead of being ashamed, those who hold this conceptualization see themselves as having unique traits.

At its heart, neurodiversity is a variation of diversity. Intending to “evoke the concept of biodiversity which argues that natural variations in communities of non-human life make those communities more resilient and robust in the face of unpredictable conditions neurodiversity was

coined as an appropriate term” (Silberman, 2017, p. 139). Neurodiversity is thus situated akin to biodiversity and other aspects of being such as race, gender, and ethnicity. In examining behavioral variants among all people, Nobuo Masataka postulated that the very features many would label “deficits” could be adaptive in a broader evolutionary context. For example, the weak central coherence found in autistic brains whereby they have an impaired ability to grasp visual gestalts or whole pictures and instead focus on details, may have served protective purposes in primitive societies (Masataka, 2017).

Neurodiversity goes beyond theory, however, and is indeed a social movement. Harvey Blume, an American journalist, who discussed “neurological pluralism” as a new social contract was inspired by the writings of Judy Singer, who wrote her views on first online forum for autistic adults, *Independent Living on the Autistic Spectrum (INLV)* in 1997. In his *Atlantic*, article *Neurodiversity: On the neurological underpinnings of geekdom*, Blume drew attention to the many institutions and journals devoted to the study of autism, often without an autistic voice (1998). After Blume’s article, professionals began to listen to the growing on-line autism community. Exposure to the thoughts of autistics awoke greater consciousness about how they were being perceived and excluded from wider society. For instance, Morton Ann Gernsbacher, a longtime autism researcher, began pointing out the insidious and pervasive form of bias in research, such as interpreting any difference in brain structure as “disorder” when a similar finding among neurotypicals would not be labeled as such (Blume, 1998).

Neurodiversity was further developed from the substantial research of Thomas Armstrong who has elaborated on neurodiversity and brain differences, which are ripe with examples of all types of intelligences (Armstrong, 2010a, 2010b, 2006). Rather than pathologizing the symptoms of autism, his research suggests that rather than abnormal, autistic

brains have both strengths and weaknesses. Certain “cognitive strengths in autistics, notably in domains such as excellent attention to detail, excellent memory for detail and a strong drive to detect patterns are hardly evidence of a disorder” (Baron-Cohen, 2017, p. 745). In fact, Armstrong argues that sometimes persons with such brain differences function even better than typical individuals given certain environments and tasks; the most well-known example of autistics working in the computer industry. This idea was coined “niche construction” in Steve Silberman’s book, which identifies helping professional’s roles to focus on finding the right environment for individuals with ASD to flourish and use their unique strengths. Such a view is consistent with social work’s ecological model (i.e. “person in environment”) which directs social workers to make changes on behalf of clients from within the environment or interactional processes with the person and environment.

As with other social movements, consciousness-raising is a first step. The internet has been used effectively as a prosthetic device by individuals with ASD. Free from distracting environments that make communication more difficult and free from demands for eye contact and reading social cues, autistics took to the internet to have their voices heard, a phenomenon compared with the development of American Sign Language among the deaf. Although not everyone in the autism community would agree with neurodiversity, there are many who have felt excluded from Autism Speaks, an organization clearly developed and run by parents and caregivers. Autism Speaks has been successful as a public awareness campaign and has funded research, yet they advocate for treatments to make autistics more neurotypical. For example, those who favor the neurodiversity perspective would disfavor ABA therapy for its stressful drilling of rote responses, which serves to make autistics look more “neurotypical.” Some

neurodiversity proponents believe that the focus on a cure agenda could lead to a rise in eugenics to eliminate autism (Waltz, 2008).

Groups such as the Autism Self Advocacy Network, the Global and Regional Asperger Syndrome Partnership and the Autism Society of American that include people with autism in every level of their organization have stepped forward to advocate for those with ASD, which is exceptionally congruent with those who believe in neurodiversity. If disability is both culture and identity, an autism community exists that is “setting off disability studies as a socio-political-cultural examination of disability from the intervention approaches that characterize the dominant tradition of disability” (Linton, 1998, p. 132).

Therefore, neurodiversity was selected for three reasons. First, it is a strength-based theory with coincides with social work’s emphasis on strength-based practice. Secondly, neurodiversity also explicitly embraces empowerment and self-determination, which has been particularly evident in Autism Self Advocacy Network’s passionate work on media and policy issues. Those that hold this perspective embrace self-determination and strive to be as independent as possible, and they see professional’s’ roles limited to helping people to compensate, navigate and function in the world, but not turning them into (non-disabled) able bodied persons (Sinclair, 1993). Finally, although neurodiversity has been applied to other neurologically based differences such as dyslexia and ADHD, its applicability to those with ASD is substantial, and represents, as noted above, a new domain in the discourse on “diversity” inherent in social work.

### **Summary of Banded Dissertation Products**

This dissertation is comprised of three interrelated products. First as outlined above, the conceptual framework of neurodiversity as a new paradigm in disability studies is presented. The



study was situated on the broader stage of disability theories generally, so a brief overview of disability theory in relation to ASD is discussed. The development of this conceptual framework and social movement is traced, followed by a discussion of the schism between the parent-run organizations and the more grassroots orientation of neurodiversity. Finally, the arguments are made why neurodiversity should be included in social work education, practice, and research as a model to understand ASD. However, there are some shortcomings to neurodiversity, and these are discussed as well.

In the second product, the survey research sought to predict and understand what master's trained social workers know about ASD, and their attitudes and desires about working with individuals with ASD. Since many myths and misinformation exist regarding ASD, including the immunization controversy, the study sought to understand whether social workers have accurate knowledge and hold a strength-based perspective of ASD.

The third product was an e-Poster presentation: Neurodiversity: The New Cultural Competency in Social Work Education, that was presented at the Council on Social Work Education's Annual Program Meeting on November 11, 2018. The e-Poster highlighted practical suggestions of working with people with ASD that compensates for their communication differences and capitalizes on their strengths.

### **Discussion**

Neurodiversity is a new conceptual framework for understanding individuals with neurologically based differences and strengths. Yet most social workers perhaps have not heard about this idea, nor are they aware of the advocacy efforts of a number of small but vocal neurodiversity adherents who have had some success. For example, members of the Autism Self Advocacy Network, (ASAN) led by Ari Ne'eman in December of 2007 were understandably

upset about the New York University Child Study Center's billboards displayed throughout New York City, which depicted autism as a kidnapper, the idea being that once autism kidnaps the child, parents are left with a shell of the former child. This media debacle, known as "The Ransom Notes Affair" began after NYU's Child Study Center's put up the billboards as a public service announcement whose intention was to raise awareness about childhood psychiatric problems (Kras, 2010). Although ASAN was not initially successful on their own efforts, using an online petition, when the larger media outlets became aware of the outcry from ASAN, the billboards were taken down roughly three weeks later (Wang, 2007b). Thus, neurodiversity is also a social movement with a very real presence and anti-oppression ideology.

The survey research, in which results showed, that contact with people with autism was the greatest predictor of wanting to work with them, was not surprising. Historically perhaps because individuals with disabilities were institutionalized until the 1970's in the United States, most people did not regularly interact with a person with a disability. Even though institutionalization is over, and in theory individuals with disabilities are included in society, in reality those with disabilities are still isolated in special education programs or sheltered workshops and thus remain less visible. Therefore, full inclusion in our society for people with disabilities is still unrealized. Such invisibility is a symptom of oppression and stigmatizing attitudes.

In the case of ASD, perhaps many individuals are perplexed by the odd behaviors of individuals on the spectrum, and many still hold outdated attitudes about ASD. While it is beyond the scope of this dissertation to elaborate on the public perceptions, misinformation and stigmatizing beliefs of people, negative perceptions and mistaken beliefs are still prevalent in society about disabilities in general. Since ASD is an "invisible" disability, with no outward

physical manifestations, the odd behaviors, sensory difficulties or behavioral meltdowns lead to heightened public scrutiny from a misinformed public. Therefore, the very symptomatology that is characteristic of ASD may serve to ostracize them further. For example, studies have shown that stronger negative attitudes are held against people with language and social skill deficits than those having physical disabilities (Hughes et al., 1999), even among young children (Nowicki, 2006), and teachers (Barr and Bracchitta, 2008). In a study of attitudinal differences among types of disabilities (physical, behavioral and developmental), Barr and Bracchitta (2015) discovered their sample had significantly more contact with those with physical disabilities, scored significantly lower on hopelessness, lower on misconceptions towards those with physical disabilities relative to behavioral or developmental disabilities but also significantly lower on optimism towards individuals with developmental disabilities.

In this dissertation, contact with people with ASD was the greatest predictor of wanting to work with this group. This finding supports the empirical evidence for contact theory which suggests that greater contact with a group of individuals fosters more positive attitudes (Keller and Siegrist, 2010), promotes a feeling of empowerment (Flatt-Fultz and Phillips, 2012) and inclusion and acceptance (Findler, Vilchinsky & Werner, 2007). Greater contact with individuals with developmental disabilities in the above-mentioned study, for instance, was associated with lower misconceptions and higher optimism (Barr and Bracchitta, 2015).

### **Implications for Social Work Research**

Deficits in core curricular content on ASD are evident when examining both foundation year master's students (14.2) and advanced-year master's students (14.6) who did not differ significantly in knowledge scores regarding ASD (Dinecola and Lemeiux, 2015). Little content on autism specifically can be found in the social work undergraduate and graduate curriculum,

despite the focus of diversity and value of human rights inherent to the profession of social work (Dababnah, Parish, Turner, Brown & Hooper, 2011; Joyner, 2010; Laws, Parish, Scheyett & Egan, 2010).

Consistent with the prior empirical evidence, this dissertation uncovered social work education's omission of disability content in the curriculum. As the results outlined above suggest, social work education must move away from a strictly medical model of disability and embrace strength-based understandings including social and neurodiversity models. Granted, the medical model is still needed for diagnosis as the gateway to services, providing a common language for practitioners and also can providing a way for newly diagnosed individuals and families to understand ASD. Beyond that, embracing positive frameworks towards disability and including them in social work education is important.

Even if social workers are not primarily working in the disability field, they need to have a rudimentary understanding of ASD. Eventually, most social workers will work with a person with ASD or his/her family, which is another reason to support the development of a curriculum in schools of social work. Because of the scope of ASD, which manifests as neurological, psychological, physical and learning differences, social workers will interface with people with ASD, often as part of an interdisciplinary team.

Finally, because ASD prevalence and research have skyrocketed in the past 25 years, and many parents are desperate to find a "cure" for ASD, they become vulnerable to markets that promise quick fixes, the majority of which have no empirically validated evidence of effectiveness. ASD lends itself toward the creation and adoption of pseudoscientific assessment methods and interventions (Thyer and Pignotti, 2015). Since ASD has a heterogeneous presentation and variable success rates with different treatments, "the current lack of curative

treatments renders the disorder fertile ground for quackery” (Herbert, Sharp and Gaudiano, 2002, p.24). Even more importantly, some therapies recommended by social workers such as chelation might be harmful rather than just ineffective. Consequently, social workers should have accurate knowledge about ASD, as such knowledge is critical for the safety of those with ASD.

### **Implications for Future Research**

In the U.S., autism research, spurred on by organizations like Autism Speaks, has primarily focused on genetic and neurological research, “while the amount of research funding dedicated to improving the immediate circumstances in which autistic people find themselves remained very low, with few studies being funded to understand and promote family functioning and services – a pattern that has been heavily criticized by some members of the autism community” (Milton and Bracher, 2013; Ne’eman, 2010, as cited in Pelicano, Dinsmore and Charman, 2014, p. 757). Autism research has been highly imbalanced in the U.S., with most studies focusing on young children and genetic or biological markers for risk of ASD. Pelicano, Dinsmore and Charman found:

a general consensus that future priorities for autism research should lie in those areas that make a difference to people’s day-to-day lives. There needs to be greater involvement of the autism community both in priority setting and in research more broadly to ensure that resources reach where they are most needed and can make the most impact (2014, p. 756).

Most needed is a strength-based approach to researching about ASD. Toward this end, participatory based research would work well with higher functioning individuals and organizations, particularly adults. This is consistent with what Frazer et al., recently found in their survey research; “people with autism want to be included in research, science priority

development and funding processes” (2018, p. 3969). For those with fewer abilities, case management and support would work well, provided the individual is empowered as much as possible toward his or her own goals. Within the autism community, teaching self-advocacy would be an essential part of the work that a social worker could support.

## Comprehensive Reference List

- Ahlborn, L., Panek, P., & Jungers, M. (2008). College students' perceptions of persons with intellectual disability at three different ages. *Research in Developmental Disabilities: A Multidisciplinary Journal*, 29(1), 61-69. doi: 10.1016/j.ridd.2006.11.001
- Allison, P. (1999). *Multiple Regression: A primer*. Thousand Oaks, CA: Sage.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5. (5th ed.)*. Washington, D.C.: American Psychiatric Association.
- Armstrong, T. (2010a). *Neurodiversity: Discovering the hidden strengths of Autism, ADHD, dyslexia, and other brain differences*. Cambridge, MA: Da Capo Press.
- Armstrong, T. (2010b). *Neurodiversity: Discovering the extraordinary gifts of autism, ADHD, dyslexia, and other brain differences (1<sup>st</sup> Ed.)*. Cambridge, MA: Da Capo Press.
- Armstrong, T. (2015). The myth of the normal brain: Embracing neurodiversity. *AMA journal of ethics*, 17(4), 348-352. doi: 10.1001/journalofethics.2015.17.4.msoc1-1504.
- Aviram, U., & Katan, J. (1991). Professional preferences of social workers: Prestige scales of populations, services, and methods in social work. *International Social Work*, 34, 37-55. doi:10.1177/002087289103400104
- Baio J, Wiggins L, Christensen DL, et al. Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2014. *MMWR Surveill. Summ.* 2018;67(No. SS-6):1-23. doi: <http://dx.doi.org/10.15585/mmwr.ss6706a1>
- Baker, D.L. (2011). *The politics of neurodiversity: Why public policy matters*. Boulder, Colorado: Lynn Rienner Publishers.

- Barr, J. J., & Bracchitta, K. (2008). Effects of contact with individuals with disabilities: Positive attitudes and majoring in education. *The Journal of Psychology, 142*(3), 225-244. doi: 10.3200/JRLP.142.3.225-244
- Baron-Cohen, S. (2017). Editorial Perspective: Neurodiversity - A revolutionary concept for Autism and psychiatry. *Journal of Psychology and Psychiatry, 58* (6), 744-747. doi:10.1111/jcpp.12703
- Barr, J. J., & Bracchitta, K. (2015). Attitudes toward individuals with disabilities: The effects of contact with different disability types. *Current Psychology, 34*(2), 223-238. doi: <https://doi.org/10.1007/s12144-014-9253-2>
- Begab, M. (1970). Impact of education on social work students' knowledge and attitudes about mental retardation. *American Journal of Mental Deficiency, 74*, 801-808. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/5449894?report=abstract>
- Bishop, K., & Rounds, K. (1993). P. L. 99-457: Preparation for social work practice with infants and toddlers with disabilities and their families. *Journal of Social Work Education, 29*, 36-46.
- Blume, H. (1998, September). Neurodiversity: On the neurological underpinnings of geekdom. *The Atlantic, 30*.
- Brewer, N. Zoanetti, J. & Young, R. (2017). The influence of media suggestion about links between criminality and autism spectrum disorder, *Autism, 2* (1), 117-121. doi:10.1177/1362361316632097.
- Brook, K. (2016). A response to 'Notes on a Puzzle Piece'. *Autism, 20*(2), 251-252. doi:10.1177/1362361315604077



- Brookman-Fraze, L., Drahota, A., Stadnick, N., & Palinkas, L. A. (2011). Therapist perspectives on community mental health services for children with autism spectrum disorders. *Administration and Policy in Mental Health and Mental Health Services Research*. doi: 10.1007/s10488-011-0355-y
- Brookman-Fraze, L., Baker-Ericzén, M., Stadnick, N. Taylor, R. (2012) Parent perspectives on community mental health services for children with autism spectrum disorders. *Journal of Child and Family Studies 21*: (4). doi: 10.1007/s10826-011-9506-8
- Burge, P., Druick, D., Caron, M., Ouellette-Kuntz, H. & Paquette, D. (1999). Coursework on developmental disabilities: A national survey of Canadian Schools of Social Work, *Canadian Social Work Review, 16* (1) pp. 49-63.
- Butler, A. (1990). A Reevaluation of Social Work Students' Career Interests. *Journal of Social Work Education, 26*(1), 45-56. doi: 10.1080.10437797.1990.10672133
- Butler, R. C., & Gillis, J. M. (2011). The impact of labels and behaviors on the stigmatization of adults with Asperger's disorder. *Journal of Autism and Developmental Disorders, 41*(6), 741-749.
- Carter, R. (2006). Functional Behavior Assessment for a Student with Autism: Evaluation of a Training Program for Teachers and Education Program Assistants, ProQuest Dissertations and Theses.
- Cascella, P. (2005). Expressive Communication Strengths of Adults With Severe to Profound Intellectual Disabilities as Reported by Group Home Staff. *Communication Disorders Quarterly, 26*(3), 156-163. doi:10.1177/15257401050260030401

- Cascio, M. (2012). Neurodiversity: Autism pride among mothers of children with autism spectrum disorder. *Intellectual and Developmental Disabilities*, 80(1) 273-283.  
doi:org/10.1352/1934-9556-50.3.273
- Casson, R. J., & Farmer, L. D. (2014). Understanding and checking the assumptions of linear regression: a primer for medical researchers. *Clinical & Experimental Ophthalmology*, 42(6), 590-596. doi: <https://doi.org/10.1111/ceo.12358>
- Centers for Disease Control and Prevention. (2008). Autism and developmental disabilities monitoring network surveillance year 2008 principal investigators. *Prevalence of autism spectrum disorders autism and developmental disabilities monitoring network, 14 Sites, United States*, 1-19.
- Centers for Disease Control and Prevention. (2009). Prevalence of autism spectrum disorders—Autism and Developmental Disabilities Monitoring Network, United States, 2006, 58.
- Chamack, B. Bonniau, B. Jaunay, E. & Cohen, D. (2008). What can we learn about autism from autistic persons? *Psychotherapy and Psychosomatics*, 77(5) 271-279.  
doi:10.1159/00014086
- Cheatham, L., Abell, N. & Kim, H. (2015). Development and validation of the social worker's attitudes towards disability scale. *Journal of Social Work Education*, 51, p.379-397.
- Civic Impulse. (2017). S. 6 — 94th Congress: Education for All Handicapped Children Act. Retrieved from <https://www.govtrack.us/congress/bills/94/s6>
- Civic Impulse. (2017). H.R. 8070 — 93rd Congress: Rehabilitation Act. Retrieved from <https://www.govtrack.us/congress/bills/93/hr8070>

- Clairborne, N. and Vandenburg, H. (2003). How can social workers improve outcomes and costs in disease management? *Disease Management and Health Outcomes*, 11, (7), 407-413. doi: <https://doi.org/10.2165/00115677-200311070-00001>
- Comley, P. (2000, April). Pop-up surveys. What works, what doesn't work and what will work in the future. In *Proceedings of the ESOMAR worldwide Internet conference Net Effects* (Vol. 3).
- Converse, J., & Presser, S. (1986). Survey questions handcrafting the standardized questionnaire. Jean M. Converse, Stanley Presser. (Quantitative applications in the social sciences ; no. 07-063). Beverly Hills ; London: Sage.
- Cook, R., & Weisberg, S. (1982). Criticism and influence analysis in regression. *Sociological Methodology*, 13, 313. doi: <http://dx.doi.org/10.2307/270724>
- Copeland, V.C. (1996). Immunization among African American children: Implications for social work. *Health and Social Work*, 21, 105-114.
- Coughlan, M., Cronin, P., & Ryan, F. (2009). Survey research: Process and limitations. *International Journal of Therapy and Rehabilitation*, 16(1), 9-15 doi: <http://dx.doi.org/10.12968/ijtr.2009.16.1.37935>
- Council on Social Work Education (CSWE) (2015) *Educational Practices and Accreditation Standards*. Retrieved from: <http://www.cswe.org/file.aspx?id%413780>, accessed April 4, 2017.
- Crowe, M. J., & Mackenzie, L. (2002). The influence of fieldwork on the preferred future practice areas of final year occupational therapy students. *Australian Occupational Therapy Journal*, 49(1), 25-36. doi: <https://doi.org/101046/j.0045-0766.2001.00276x>

- Dababnah, S., Parish, S., Turner, L., Brown, L. & Hooper, S. (2011). Early screening for autism spectrum disorders: A primer for social work practice. *Children and Youth Services Review, 33*(2), 265-273.
- Davis, E., Barnhill, L., & Saeed, J. (2008). Treatment models for treating patients with combined mental illness and developmental disability. *Psychiatric Quarterly, 79*(3), 205-223. doi: 10.1007/s11126-008-9082-2
- DePoy, E., & Miller, M. (1996). Preparation of social workers for serving individuals with developmental disabilities: A brief report. *Mental Retardation, 34*(1), 54-57.
- Deweaver, K., & Kropf, N. (1992). Persons with mental retardation. *Journal of Social Work Education, 28*(1), 36-46. doi:10.1080/10437797.1992.10778756
- Diamond, M. (2014, June 12). Congress to 'Combat' autism no more. *Disability Scoop*. Retrieved from <https://www.disabilityscoop.com/2014/06/12/congress-combat-autism-no/19436/>
- Dillenburger, K., Jordan, J., McKerr, L., Devine, P. & Keenan, M. (2013). Awareness and knowledge of autism and autism interventions: A general population survey. *Research in Autism Spectrum Disorders, 7*, 1558-1567. doi: <http://dx.doi.org/10.1016/j.rasd.2013.09.0014>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *The tailored design method: Internet, mail and mixed-mode surveys*. Hoboken, NJ: Wiley
- Dinecola, C., and Lemieux, C. (2015). Practice with persons with autism spectrum disorders: Predictors of self-efficacy among social work students. *Journal of Social Work in Disability and Rehabilitation, 14*: 23-40. doi: 10.1080.1536710X.2015.989559

- Dixon, D. R., J Garcia, M., Granpeesheh, D., & Tarbox, J. (2009). Differential diagnosis in autism spectrum disorders. In *Applied Behavior Analysis for Children with Autism Spectrum Disorders* (pp. 83-108). Springer New York. doi:10.1007/978-1-4419-0088-3\_5
- Dunn, P., Hanes, R., Hardie, S., Leslie, D., MacDonald, J. (2008). Best practices in promoting disability inclusion within Canadian Schools of Social Work, *Disabilities Studies Quarterly*, 28 (1) doi: dx.doi.org/10.18061/dsq.v28i1.66
- Edelson, S. (ND). Autistic Savants. Retrieved from:  
<https://www.autism.com/understanding.savant>
- Ferguson, P. and Nusbaum, E. (2012). Disability studies: What is it and what difference does it make? *Research and Practice for Persons with Severe Disabilities*, 37 (2) 70-80.  
Retrieved from: <http://www.iimhl.com/files/docs/20150415a.pdf>
- Findler, L., Vilchinsky, N., & Werner, S. (2007). The multidimensional attitudes scale toward persons with disabilities. *Rehabilitation Counseling Bulletin*, 50, 166–176. doi:10.1177/00343552070500030401
- Flatt-Fultz, E., & Phillips, L. A. (2012). Empowerment training and direct support professionals' attitudes about individuals with intellectual disabilities. *Journal of Intellectual Disabilities*, 16, 119 –125. doi:10. 1177/1744629512443652.
- Frazier, T., Dawson, G., Murray, D., Shih, A., Snyder-Sachs, J. & Geiger, A. (2018). Brief report: A survey of autism research priorities across a diverse community of stakeholders. *Journal of Autism and Developmental Disabilities*, 48: 3965-3971.
- Fombonne, E. (2018). Editorial: The rising prevalence of autism. *Journal of Child Psychology and Psychiatry*, 59,7. doi:10.1111/jcpp.12941

Gardner, H. (1993). *Multiple intelligences: The theory in practice* / Howard Gardner. New York, NY: Basic Books.

Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century*. Howard Gardner. New York, NY: Basic Books.

Gardner, H. (2006). *Multiple intelligences : New horizons* / Howard Gardner. (Completely rev. and updated. ed.). New York: Basic Books.

George, D., & Mallery, M. (2010). *SPSS for Windows Step by Step: A Simple Guide and Reference*, Boston: Pearson.

Gillespie-Lynch, K., Brooks, P. J., Someki, F., Obeid, R., Shane-Simpson, C., Kapp, S. K., & Smith, D. S. (2015). Changing college students' conceptions of autism: An online training to increase knowledge and decrease stigma. *Journal of Autism and Developmental Disorders*, 45(8), 2553–2566.

Gilson, S.F. & DePoy, E. (2002). Theoretical approaches to disability content in Social Work Education. *Journal of Social Work Education*, 38(1), 153-65.

doi:10.1080/10437797.2002.10779088

Goodley, D. (2017). Disentangling critical disability studies. In Walshmidt, A. Berressem, H. & Ingwersen M., (Eds.) *Culture-Theory-Disability*, 81-89. Verlag, Bielfeld, Deutsche

Nationalbibliografie. Retrieved from:

[file:///C:/Users/Katie/Downloads/627653%20\(1\).pdf](file:///C:/Users/Katie/Downloads/627653%20(1).pdf)

Granello D., Wheaton, J. (2004) Online data collection: Strategies for Research. *Journal of Counseling & Development*, 82(4): 387–93. doi:10.1002/j.1556-6678.2004.tb00325.x

Griffin, E, and Pollak, D (2009) Student experiences of neurodiversity in higher education: Insights from 402 the BRAINHE Project, *Dyslexia 15*: 23–41. doi:10.1002/dys.383

Grinker, R. (2015). Notes on a puzzle piece, *Autism*, 19(6), 643-645. doi:

10.1177/136236131558929

Gourdine, R. M., & Sanders, T. (2002). Missed opportunities and unlimited possibilities:

Teaching disability content in schools of social work. *Journal of Health & Social Policy*,

16(1-2), 207-220. doi: [https://doi.org/10.1300/J045v16n01\\_17](https://doi.org/10.1300/J045v16n01_17)

Hällgren, M. and Kottorp, A. (2005). Effects of occupational therapy intervention on activities of daily living and awareness of disability in persons with intellectual disabilities.

*Australian Occupational Therapy Journal*, 52: 350-359. doi:10.1111/j.1440-

1630.2005.00523.x

Haney, J., & Cullen, J. (2018). An exploratory investigation of social workers' knowledge and attitudes about autism. *Social Work in Mental Health*, 16(2), 201-222.

doi: 10.1080/15332985.2017.1373265

Harrison, Ashley J., Bradshaw, Laine P., Naqvi, Nilofer C., Paff, Madison L., & Campbell, Jonathan M. (2017). Development and psychometric evaluation of the Autism Stigma and Knowledge Questionnaire (ASKQ). *Journal of Autism and Developmental*

*Disorders*, 47(10), 3281-3295. Doi: 10.1007/s10803-17-3242-x

Heidgerken, A., Geffken, G., Modi, A., & Frakey L. (2005). A survey of autism knowledge in a health care setting. *Journal of Autism and Developmental Disorders*, 35, (3).

Herbert, J., Sharp, I., & Gaudiano, B. (2002). Separating fact from fiction in the etiology and treatment of autism. *The Scientific Review of Mental Health Practice*, 1, 23-43.

Hillary, A. (2013, March 5). Erased, silenced, derailed. [Web log post] Retrieved from

<http://yesthattoo.blogspot.com/2013/03/erased-silenced-derailed.html>.

- Hillary, A. (2013). *Yes, That Too*. Retrieved from [http:// yesthattoo.blogspot.com/](http://yesthattoo.blogspot.com/) February 21, 2017.
- Hughes, J. (nd). Retrieved April 1, 2018 from <https://autisticadvocacy.org/wp-content/uploads/2016/06/whitepaper-Increasing-Neurodiversity-in-Disability-and-Social-Justice-Advocacy-Groups.pdf>
- Hughes, C., Rodi, M. S., Lorden, S. W., Pitkin, S. E., Derer, K. R., Hwang, B., & Cai, X. (1999). Social interaction of high school students with mental retardation and their general education peers. *American Journal on Mental Retardation*, 104, 533–544.
- Hurewitz, F., & Berger, P. E. (2008). Preparing students with autism for college and preparing colleges for students with autism. *Speaker's Journal on Pennsylvania Policy*, p. 109.
- Iobst, E., Nabors, L., Rosenzweig, K., Srivorakiat, L., Champlin, R., Campbell, J. & Segall., M (2009). Adults' perceptions of a child with autism. *Research in Autism Spectrum Disorders*, 3(2), 401-408. doi: <http://dx.doi.org/10.1016/j.rasd.2008.08.006>
- Jack, R., & Mosley, S. (1997). The client group preferences of diploma in social work students: What are they, do they change during programmes and what variables affect them? *The British Journal of Social Work*, 27(6), 893-912.
- Jaarsma, P. & Welin, S. (2012). Autism as a natural human variation: Reflections on claims of the neurodiversity movement. *Health Care Anal*, 20, 20-30. doi: [org.10. 1007/s10728-011-0169-9](https://doi.org/10.1007/s10728-011-0169-9)
- Joyner, J.L. (2010). The integration of content of developmental disabilities in California State University, Sacrament Division (Unpublished master's thesis). California State University, Sacramento. Retrieved from: <http://hdl.handle.net/10211.9/340>



- Kapp, S., Gillespie-Lynch, K., Sherman, L. & Hutman, T. (2013). Deficit, difference or both: Autism and neurodiversity, *Developmental Psychology*, 49 (1), pp. 59-71. doi: 10.1037/a0028353
- Kauffman, J. M., & Hung, L. Y. (2009). Special education for intellectual disability: Current trends and perspectives. *Current Opinion in Psychiatry*, 22(5), 452-456. doi: 10.1097/YCO.0b013e32832eb5c3
- Keller, C., & Siegrist, M. (2010). Psychological resources and attitudes toward people with physical disabilities. *Journal of Applied Social Psychology*, 40(2), 389-401. DOI: 10.1111/j.1559-1816.2009.00579.x
- Kelly, A. & Barnes-Holmes, D. (2013). Implicit attitudes towards children with autism versus normally developing children as predictors of professional burnout and psychopathology. *Research in Developmental Disabilities*, 34(1). 17-28.  
<https://doi.org/10.1016/j.ridd.2012.07.018>
- Kras, J. F. (2010). The “Ransom Notes” affair: When the neurodiversity movement came of age. *Disability Studies Quarterly*, 30(1). doi: <http://dx.doi.org/10.18061/dsq.v30i1>
- Kreck, T. (2013). Deconstructing disability and neurodiversity: Controversial issues for autism and implications for social work. *Journal of Progressive Human Services*, 24, p. 4 -22. doi: org/10.1080/10428232.2013.740406
- Kolodziej, M., Johnson, B., & Beutler, Larry E. (1996). Interpersonal contact and acceptance of persons with psychiatric disorders: A research synthesis. *Journal of Consulting and Clinical Psychology*, 64(6), 1387-1396. doi: 10.1037/0022-006X.64.6.1387

- Krumer-Nevo, M., & Weiss, I. (2006). Factors affecting the interest of Israeli social work students in working with different client groups. *Journal of Social Work Education*, 42(3), 443-464. doi: 10.5175/JSWE.2006.042310001
- Laws, J., Parish, S. L., Scheyett, A. M., & Egan, C. (2010). Preparation of social workers to support people with developmental disabilities. *Journal of Teaching in Social Work*, 30 (3), pp. 317-333. doi: 10.1080/08841233.2010.497128
- Lefever, S., Dal, M., & Matthíasdóttir, A. (2007). Online data collection in academic research: Advantages and limitations. *British Journal of Educational Technology*, 38(4), 574-582. doi: 10.1111/j.1467-8535.2006.00638.x
- Liedel, J. (2008). Autism: Definition, History, and Diagnosis. In Buckendorf, Robert G. (Ed.) *Autism A guide for educators, clinicians and parents*, 4-5, Greenville, South Carolina: Thinking Publications.
- Linton, S. (1998). *Claiming disability: Knowledge and identity*. New York, NY: New York University Press. p.120-132.
- Limb, G., & Organista, K. (2006). Change between entry and graduation in MSW student views on social work's traditional mission, career motivations, and practice preferences: Caucasian, students of color and American Indian group comparisons. *Journal of Social Work Education*, 42(2), 269-290. Doi: 10.5175/JSWE.2006.2004
- Mackelprang, R. W. (2010). Disability controversies: Past, present, and future. *Journal of Social Work in Disability & Rehabilitation*, 9(2-3), 87-98. doi:https://doi.org/10.1080/1536710x.2010.493475
- Malhotra N. (1987). Analyzing marketing research data with incomplete information on the dependent variable. *Journal of Marketing Research*, 24, 74–84. doi: 10.2307/3151755.

Martin, P, Cheung, F., Knowles, M., Kyrios, M., Overmier, J., Prieto, J, ...Scherer, Marcia J.

(2011). *IAAP handbook of applied psychology*. Chichester, West Sussex, U.K. ;: Wiley-Blackwell.

Masataka, N. (2017). Implications of the idea of neurodiversity for understanding the origins of neurodevelopmental disorders. *Physics of Life Reviews*, 20, pp. 85-108. doi: 10.1016/j.plrev.2016.11.002

May, B., & Applewhite, S. (2006). *Teaching Multicultural Diversity Content with the Inclusion of Individuals with Learning Disabilities: A National Survey of Social Work Faculty/Instructors*, ProQuest Dissertations and Theses.

McManus, J. L., Feyes, K. J., & Saucier, D. A. (2011). Contact and knowledge as predictors of attitudes toward individuals with intellectual disabilities. *Journal of Social and Personal Relationships*, 28(5), 579–590. <https://doi.org/10.1177/0265407510385494>

Milton, D. (2014b). Autistic expertise: A critical reflection on the production of knowledge in autism studies. *Autism: The International Journal of Research and Practice*, 18(7), 794-802. doi:10.1177/1362361314525281

Milton, D., & Bracher, M. (2013). Autistics speak but are they heard? *Medical Sociology online*, 7 (2). pp. 61-69.

Milton, D., & Sims, T. (2016). How is a sense of well-being and belonging constructed in the accounts of autistic adults? *Disability and Society*, 31 (4). pp. 520-534.

Mogro-Wilson, C, Davidson, K. & Bruder, M. (2014). An empowerment approach in teaching a class about autism for social work students. *Social Work Education*, 33, (1), 61-76. doi: 10.1080/02615479.2012.734802

- Morgan, H. (2012). The Social model of disability as a threshold concept: Troublesome knowledge and liminal spaces in social work education. *Social Work Education, 31*(2), 215-226.
- Moyle, J., Iacono, T. & Liddell, M. (2010). Knowledge and perceptions of newly graduated medical practitioners in Malaysia of their role in medical care of people with developmental disabilities. *Journal of Policy and Practice in Intellectual Disabilities, 7*, (2), 85-95.
- Muller, J. (2011). Disability, ambivalence, and the law. *American Journal of Law & Medicine, 37*(4), 469-521.
- Myers, R. (1990). *Classical and modern regression with applications*. (2<sup>nd</sup> ed.). Boston, MA: Duxbury.
- Nash, J., and Potts, M. *Autism Spectrum Disorders and Asperger's Syndrome: How Much Do MSW Students Know?* 2005, ProQuest Dissertations and Theses.
- NASW Code of Ethics (2017). Retrieved from <https://www.socialworkers.org/About/Ethics/Code-of-Ethics/Code-of-Ethics-English> on March 6, 2019.
- National Association of Social Workers. (2015). NASW Standards for Cultural Competence. Retrieved from: <https://www.socialworkers.org/LinkClick.aspx?fileticket=7dVckZAYUmk%3d&portalid=0>
- Ne'eman, A. (2010). The Future (and the past) of autism advocacy, or why the ASA's magazine, *The Advocate*, wouldn't publish this piece. *Disability Studies Quarterly, 30* (1). Retrieved from <http://www.dsq-sds.org/>

- Nevill, R. A., & White, S. W. (2011). College students' openness toward autism spectrum disorders: Improving peer acceptance. *Journal of Autism and Developmental Disorders*, *41*(12), 1619–1628.
- New Autism Findings from Centers for Disease Control and Prevention Published. (2012, October 29). *Mental Health Weekly Digest*. Retrieved from:  
<http://www.newsrx.com/newsletters/Mental-Health-Weekly-Digest.html>
- Nowicki, E. A. (2006). A cross-sectional multivariate analysis of children's attitudes towards disabilities. *Journal of Intellectual Disability Research*, *50*, 335–348. doi:10.1111/j.1365-2788.2005.00781.x
- Ogden, L., McAllister, C., & Neely-Barnes, S. (2017). Assessment of integration of disability content into social work education. *Journal of Social Work in Disability & Rehabilitation*, *16*:3-4, 361-376, doi: 10.1080/1536710X.2017.1392394
- Oliver, M. (1990). *The politics of disablement: A sociological approach*. New York: St. Martin's Press.
- Oliver, M. (1996). *Understanding disability: From theory to practice*. London: MacMillan Press.
- Oliver, M., & Barnes, C. (2012). Back to the future: The World Report on Disability. *Disability & Society*, *27*(4), 575-579. doi: 10.1080/09687599.2012.686781
- Ortega, F. (2009). The cerebral subject and the challenge of neurodiversity. *BioSocieties*, *4*, 425–445. doi: 10.1017/S1745855209990287
- Parahoo K (2006). *Nursing Research: Principles, Process and Issues* 2nd edition. Palgrave Macmillan, Houndmills.

- Pearson, J., Livingston, J., Brandon, D., & Cunningham, R. (2013). *Attitudes toward Autism, Access to Healthcare, and Socioeconomic Status as Predictors of Knowledge of Autism Spectrum Disorders among African Americans, ProQuest Dissertations and Theses.*
- Pellicano, E., Dinsmore, A., & Charman, T. (2014). What should autism research focus upon? Community views and priorities from the United Kingdom. *Autism, 18*(7), 756-770. doi:10.1177/1362361314529627
- Perry, L., Ivy, M., Shelar, D., & Conner, A. (2008). Recreation student attitudes towards persons with disabilities: Considerations for future service delivery. *Journal of Hospitality, Leisure, Sport and Tourism Education, 7*(2), 4-14.
- Pollack, H. (2013). The Politics of Neurodiversity: Why Public Policy Matters. (Book Review) *Perspective on Politics, 11*(4), 1181-1183. doi: 10.1017/S153759271300296X
- Preece, D. & Jordan, R. (2007). Social workers' understanding of autism spectrum disorders: An exploratory investigation, *British Journal of Social Work, 37*, p.925-936.
- Pruett, S., Lee, Chan, Ming Hung Wang, & Lane. (2008). Dimensionality of the Contact With Disabled Persons Scale: Results from exploratory and confirmatory factor analyses. *Rehabilitation Counseling Bulletin, 51*(4), 210-220. doi: 10.1177/0034355207311310
- Robertson, S.M. (2010). Neurodiversity, quality of life, and autistic adults: Shifting research and professional focuses onto real-life challenges. *Disability Studies Quarterly, 30* (1). Retrieved from: <http://www.dsqsds.org/article/view/1069/1234>
- Rothman, J. C. (2010). The challenge of disability and access: Reconceptualizing the role of the medical model. *Journal of social work in disability & rehabilitation, 9*(2-3), 194-222. doi:10.1080/1536710X.2010.493488.

Rosen, A. and Zlotnik, J. (2001). Social work's response to the growing older population.

*American Society on Aging, 1* 69-71.

Roszak, D. (2006). Survey shows where states rank in various health care staffing categories.

*Hospitals & Health Networks, 80* (12), 65-6. Retrieved from: <http://www.hhnmag.com/>

Russo-Gleicher, R. (2008). MSW Programs: Gatekeepers to the field of developmental disabilities. *Journal of Social Work Education, 44*(2), 129-156.

doi:10.5175/JSWE.2008.200700008

Rutherford, M.D. and Subiaul, F. (2015). Children with autism spectrum disorder have

exceptional explanatory drive. *Autism, 20*(6), 744-753. doi: 10/1177/1362361315605973

Saleeby, D. (1992). Introduction: Power in the people. In D. Saleeby (Ed.), *The strengths perspective in social work practice*, 3-17. White Plains, NY: Longman.

Salsberg, E., Quigley, L., Mehfoud, N., Acquaviva, K., Wyche, K. & Sliwa, S. (2018). Profile of the social work workforce. The George Washington University Health Workforce Institute and School of Nursing.

Scior, K. (2011). Public awareness, attitudes and beliefs regarding intellectual

disability: A systematic review. *Research in Developmental Disabilities, 32*, 2164-2182.

Seligman, C. K., Mukai, T., Woods, T., & Alfeld, C. (1995). Parents' contributions to children's knowledge and attitudes regarding AIDS: Another look. *Journal of Pediatric Psychology, 20*(1), 61-77. doi:10/1093./jpepsy/20.1.61

Shankar, J., Barlow, C. A., & Khalema, E. (2011). Work, employment, and mental illness:

Expanding the domain of Canadian social work. *Journal of Social Work in Disability & Rehabilitation, 10*(4), 268-283.

- Shapiro, J. P. (1993). *No pity: People with disabilities forging a new civil rights movement*. New York, NY: Times Books.
- Silberman, S. (2015). *NeuroTribes: The legacy of autism and the future of neurodiversity*. New York, NY: Penguin Random House, LLC.
- Sinclair, J. (1993). Don't mourn for us. *Our Voice*, 1 (3). Retrieved from [http://www.autreat.com/dont\\_mourn.html](http://www.autreat.com/dont_mourn.html)
- Snyder, S., Brueggemann, B.J., Thomson, R.G. (2002). *Disability studies: Enabling the humanities*. Sharon L. Snyder, Brenda Jo Brueggemann, and Rosemarie Garland-Thomson. New York: Modern Language Association of America. Retrieved from: <http://hdl.handle.net/10822/951133>
- Specht, H., & Courtney, M. (1995). *Unfaithful angels : How social work has abandoned its mission*. New York: Free Press.
- Stachura, K., & Garven, F. (2007). A national survey of occupational therapy students' and physiotherapy students' attitudes to disabled people. *Clinical Rehabilitation*, 21, 442–449.
- Stevenson, R. Siemann, J., Schneider, B., Eberly H., Woynaroski, T., Camarata, S. & Wallace, M. (2014). Multisensory Temporal Integration in Autism Spectrum Disorders. *Journal of Neuroscience*, 34 (3), doi: 10.1523/JNEUROSCI.3615-13.2014
- Stiers, W., Perry, K. N., Kennedy, P., & Scherer, M. J. (2011). Rehabilitation psychology. In *IAAP Handbook of Applied Psychology* (pp. 573-587). Wiley-Blackwell.  
doi:10.1002/9781444395150.ch24
- Tabachnick, B. G., & Fidell, L. S. (1989). *Using multivariate statistics* (2nd ed.). Cambridge, MA: Harper & Row.



- Tervo, R. C., Azuma, S., Palmer, G., & Redinius, P. (2002). Medical students' attitudes toward persons with disability: a comparative study. *Archives of physical medicine and rehabilitation*, 83(11), 1537-1542. doi: 10.1053/apmr.2002.34620
- Tervo, R. C., Palmer, G., & Redinius, P. (2004). Health professional student attitudes towards people with disability. *Clinical Rehabilitation*, 18(8), 908-915.
- Thomas, C. (1999). *Female forms: Experiencing and understanding disability*. doi:10.1191/0269215504cr820oa Buckingham, England: Open University Press.
- Thomas, J. (2012). Autism, medicine, and the poison of enthusiasm and superstition. *Journal of Health & Biomedical Law*, 7(3), 449.
- Thyer, B. and Pignotti, M. (2005). *Pseudoscience in developmental disabilities*, New York: Springer Publishing Company.
- Thyer, B. and Pignotti, M. *Science and Pseudoscience in Social Work Practice*. Springer Publishing, 2015, New York, NY.
- Trochez, R. (2015). *Attitudes toward autism: The importance of a correct diagnosis through DSM-5* (Order No. 1593925). ProQuest Dissertations & Theses Global. (1725722297). Retrieved from <http://ezproxy.stthomas.edu/login?url=https://search-proquest-com.ezproxy.stthomas.edu/docview/1725722297?accountid=14756>
- Umbach P.D. (2004) Web surveys: Best Practice. *New Directions for Institutional Research* 121: 23–38.
- United States. Congress. House. Committee on Education Labor. Select Subcommittee on Education. (1973). Rehabilitation act of 1973 Hearing, Ninety-third Congress, first session, on H.R. 17 . / February 7, 1973. Washington: U.S. Govt. Print. Off.

- United States. Congress. House. Committee on Education Labor. (1975). Education for All Handicapped Children Act of 1975 report (to accompany H.R. 7217). (United States. Congress. House. Report 94-332). Washington: U.S. G.P.O.
- Waltz, M. (2008). Autism= death: The social and medical impact of a catastrophic medical model of autistic spectrum disorders. *Popular narrative media*, 1(1), 13-24.
- Wang, S. (2007b, December 19). NYU bows to critics and pulls ransom-note ads. *Wall Street Journal*. Retrieved from <http://blogs.wsj.com/health/2007/12/19/nyu-bows-to-critics-and-pulls-ransom-note-ads/>
- Werner, S. (2011). Assessing female students' attitudes in various health professions towards working with people with autism: A preliminary study. *Journal of Interprofessional care*, 25, 131-137. doi: 10.3109/13561820.2010.515043.
- Werner, S., & Grayzman, A. (2011). Factors influencing the intention of students to work with individuals with intellectual disabilities. *Research in Developmental Disabilities*, 32(6), 2502-2510.
- Whitaker, T., & Arrington, P. (2008). Social workers at work: NASW membership workforce study. Washington, DC: *National Association of Social Workers*.
- White, D., Hillier, A., Frye, A., & Makrez, E. (2016). College Students' Knowledge and Attitudes Towards Students on the Autism Spectrum. *Journal of Autism and Developmental Disorders*, 1-7, [doi: 0.1007/s10803-016-2818-1](https://doi.org/10.1007/s10803-016-2818-1)
- White, E. Science, pseudoscience, and the frontline practitioner: The vaccination/autism debate. *Journal of Evidence-based Social Work* 11, no. 3 (2014): 269-74.  
doi:10.1080/15433714.2012.759470

Wiens, B. A., & Gilbert, B. O. (2000). A reexamination of a childhood cancer stereotype.

*Journal of pediatric psychology, 25*(3), 151-159. doi: 10.1093/jpepsy/25.3.151

Wilson, M. (2017). *Debut of diversity: The emerging conversation about autism and higher education*. Lenexa, Kansas: AAPC Publishing.

Wilkins, D. (2015). The impact of 'being assessed' by a disabled children's team: a personal reflective account. *Child & Family Social Work, 20*(1), 10-18.

Wozencroft, A., Pate, J., & Griffiths, H. (2015). Experiential learning and its impact on students' attitudes toward youth with disabilities. *Journal of Experiential Education, 38*(2), 129-143. doi: 10.1177/1053825914524363

Wray, R., Buskirk, T., Jupka, K., Lapka, C. Jacobsen, H. Pakpahan, R. Wortley, P. (2009). Influenza vaccination concerns among older blacks: A randomized controlled trial. *American Journal of Preventive Medicine, 36*, 429-434.

Xu, G., Strathearn, L., Liu, B., & Bao, W. (2018). Prevalence of Autism Spectrum Disorder Among US Children and Adolescents, 2014-2016. *JAMA, 319*(1), 81-82.

Yuker, H. E. (Ed.). (1988). Attitudes toward persons with disabilities. New York, NY, doi:10.1001/jama.2017.17812 US: Springer Publishing Co.

Yuker, H. E. (Ed.). (1988). Attitudes toward persons with disabilities. New York, NY, US: Springer Publishing Co.

Yuker, H., Hurley, M., Eisenberg, M. (1987). Contact with and attitudes towards persons with disabilities: The measurement of intergroup contact. *Rehabilitation Psychology, 32*, (3), pp.145-154.

Yuker, H., Block, J., & Young, J. (1966). The measurement of attitudes toward disabled persons (Study No. 7). *Albertson, NY: Human Resources*.

Zablotsky B, Black L, Maenner M, Schieve, L., & Blumberg, S. (2015). *Estimated prevalence of autism and other developmental disabilities following questionnaire changes in the 2014 National Health Interview Survey*. (Report No. 87). Hyattsville, MD: National Center for Health Statistics. Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/26632847>

Neurodiversity: The New Cultural Competency in Social Work Education

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This manuscript was submitted as partial requirement for the DSW Banded Dissertation. A special thanks to Dawn Brubaker, Doctoral Candidate for peer review of this article.

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### Abstract

Although social work is founded on social justice ethics, practice with persons with disabilities, more specifically with autism spectrum disorder (ASD), has been sparse among course offerings in schools of social work. Often, disabilities are embedded within other coursework which shortchanges this population. This paper explores the historical advent of a new conceptual framework in disabilities, namely neurodiversity, that has arisen from the autism community. The fundamental notion is that rather than seeing autism as a deficit, dysfunction or even as a mental health disorder as it is currently classified in the DSM 5, it is regarded as a naturally occurring cognitive variation. Neurodiversity has far reaching implications for social work curriculum development, social work practice and policy, and could be considered as a new cultural competency. Schools of social work will need to consider adding core curricular courses or expanding diversity curriculums to include the unique needs, perspectives, and strengths of those with ASD and their families. Neurodiversity is an ideal framework in which to do so.

*Keywords:* autism, social work education, curriculum, neurodiversity, cultural competency

### **Neurodiversity: The New Cultural Competency in Social Work Education**

The need for new curricula about disabilities in social work education, particularly autism spectrum disorder, is paramount for several reasons. The prevalence of Autism Spectrum Disorder (ASD) has been swelling, particularly in the past twenty years. Since the first case reports of autism were described in the 1940s, autism has changed from being a rare, severe, lifelong disability to a common developmental disorder with variable degrees of severity (Leidel, 2008). Once considered a rare condition, autism is now recognized as a collection of disorders which are broadening in scope and increasing in incidence regardless of the way it is defined. Nevertheless, it remains the most enigmatic condition. The Centers for Disease Control (CDC) indicate an increase in prevalence rates of ASD, a trend that does not appear to be changing anytime soon (2012). Currently, the prevalence of autism is about 1 in 45 (Zablotsky, Black, Maenner, Schieve & Blumberg, 2015). Based on the numbers alone, this prevalence makes those with autism a significant part of our country's population.

A gap exists in most schools of social work regarding disabilities, particularly ASD. In a survey of social work education in the U.S. in 1996, researchers found only minimal content and values related to developmental disabilities within the programs' curricula (DePoy & Miller, 1996). In a study of fifty U.S. schools of social work, only "3 (6%) offered concentrations in developmental disabilities (DD) studies; two schools housed programs within broader Mental Health and Disability, and Health, Aging and Disability, while the third offered field work with a DD concentration without coursework" (Laws, Parish, Scheyett, & Egan, 2010, p. 326). The paucity of targeted courses on DD suggests inadequacy of training and education, superficial coverage of developmental disability interventions and policies which translates to poor quality of services for people with DD. Content from these courses is likely to be shallow, more likely to

promote a narrow perspective on disability, and to perpetuate a more negative attitude towards people with disabilities.

Because of the scope of ASD, which manifests as neurological, psychological, physical and learning differences, social workers will interface with people with ASD often as part of an interdisciplinary team. Preparation of social workers who can add the profession's unique perspective will help students prepare for the roles on those interdisciplinary teams.

Even if social workers are not primarily working in the disability field, they need a rudimentary understanding of ASD. Given the rising prevalence cited above, eventually most social workers will encounter and work with a person with ASD or his/her family, which points to the need for an updated curriculum. A National Association of Social Workers (NASW) sponsored survey of social workers found 75% of practicing social workers have worked with a person(s) with developmental disability, yet only 3% described disability as their primary practice area (Roszak, 2006). One might assume that the other 72% of practicing social workers are providing practice to clients with ASD, perhaps without a sufficient knowledge base.

Canadian researchers advocated for *both core and specialized curriculum* with a critical disability focus (Dunn, Hanes, Hardie, Leslie & MacDonald, 2008). In core curriculum, ableism could be integrated along with other forms of oppression. After all, disability is the one aspect of life that crosses all populations (Oliver, 1990, 1996; Thomas, 1999) as anyone could potentially become disabled. More importantly, the voice of individuals with disabilities should be included in all materials, such as lectures, videos, readings, and papers (Gilson & DePoy, 2002). What is missing in schools of social work is the focus on the strengths of persons with ASD. For instance, it has been found that children have an exceptional explanatory drive, (understanding of unsolvable problems) particularly for things in the physical environment (and not necessarily in



social contexts) as we discovered by Rutherford and Sabiaul (2015). Thus, empowerment of disabled people and a critical disability focus would orient all social work students to disability.

### **Social Work Values**

Despite the apparent natural fit between the profession's values and mission, schools of social work still do not offer specific education on disability, let alone the specific disability of ASD (Laws et al., 2010). A curriculum on developmental disability (DD) and ASD is an ethical outgrowth of the NASW's Code of Ethics, which stipulates competent, comprehensive training for individuals working with client populations and mandates social workers deliver only those services within their area of expertise and social workers should only accept responsibilities and employment that match their level of competence (Laws et al, 2010; NASW 2015).

Social work has championed the rights of the poor, immigrants, children in out-of-home care, and migrant workers, yet those with disabilities seem to remain "out of sight and out of mind" despite the passage of the Americans with Disability Act granting their civil rights (Wilson, 2017). Consequently, it is incumbent upon social work educators to require this training to meet the workforce demands.

Disability is included in the EPAS standards, specifically standard 2, which is to Engage Diversity and Difference in Practice (Council on Social Work Education [CSWE], 2015). CSWE has required master's students to have content on disability, yet there is no standard on how to integrate content on developmental disabilities into the program (Joyner, 2010) leading to what Deweaver & Kropf call "the forgotten minority in education" (1992, p.36).

Beyond the congruence with social work values, mandates for practice standards, and the professional code of ethics from the NASW, the core values of human dignity and eradication of conditions that perpetuate oppression necessitates that knowledge, values, skills, cognitive and

affective processes are used to prepare social workers to work with these groups. Therefore, a curriculum must be developed that encompasses practice, research and policy with people with ASD and their families.

In this conceptual paper, the author examines neurodiversity as a new cultural competency in social work education. To understand neurodiversity, some historical background information will be outlined to show how wider cultural factors, the media, and important social work theories have all contributed to constructing this new concept. In addition to reviewing the conceptualization of neurodiversity, a review of the prior research calls for social workers to have a fundamental understanding of the autism community. Like all theories, however, neurodiversity has its shortcomings, which will be discussed in this paper. Implication for social work practice will be offered, including understanding how to best communicate with those with ASD. Using neurodiversity as one framework, some suggestions for curriculum development will be discussed.

### **Knowledge of Autism**

Because of the absence in relevant coursework of adequate preparation for social workers' practice, several consequences have been identified. First, misunderstandings about the nature of ASD are common among social workers. For example, "parents of children with ASD reported that social workers did not understand the nature of autism, that they misjudged or underestimated the needs of these children and their families, and that they lack the skills to work with them" (Preece & Jordan, 2007, p. 926). In this study, social workers overestimated the ability of "generic" social work interventions to meet the needs of children with autism, and demonstrated confusion about the cause of ASD, the age of onset, and misattributed symptoms (Preece & Jordan, 2007).

Secondly, in a separate study, researchers found social workers had “low levels of understanding of symptoms, etiology, characteristics, co-occurring conditions and treatment of ASD with fewer than half (48%) of items on a questionnaire answered correctly” which probably undermined their work (Dinecola & Lemieux, 2015, p. 35.) Having a sufficient knowledge base about ASD, including classroom instruction and personal or professional contact with that population, increased the self-efficacy of master’s level social workers in practice (Dinecola & Lemieux, 2015). Even though master’s-trained social workers, many of whom are in direct practice, should have more knowledge about ASD, yet advanced-year master’s students (14.6%) did not differ from bachelor’s students in knowledge scores regarding ASD (Dinecola & Lemieux, 2015). Findings from these studies clearly demonstrate the need for development of new curricula in social work education for basic, accurate information about ASD.

### **Proliferating Research and Treatment**

In this paper, the author argues that social work education needs a curriculum on social work practice with ASD with an understanding of the various perspectives that individuals, families, and organizations bring with them, which underlays the cultural competency of neurodiversity. Knowledge of evidenced-based treatments is one crucial component of social work practice.

A cogent reason that a new curriculum is needed specific to this population is due to the rapidly burgeoning research. Front line social workers, who are in the position to refer families and coordinate services, need to know about evidence-based treatment. Some complementary and holistic approaches of treating ASD have come with a high price tag, both in monetary cost and individual risk. ASD lends itself toward the adoption of pseudoscientific assessment methods and interventions (Thyer & Pignotti, 2005). Since ASD has a heterogeneous

presentation and variable success rates with different treatments, many parents are trying ineffective alternative medicine approaches that are flimsily backed by parent testimonials or anecdotal evidence (Herbert, Sharp & Gaudiano, 2002). Desperate parents, eager for help with their autistic children, are vulnerable to persuasive “cures” for their child as presented on the internet. One need not look any further than the vaccine controversy to realize that up-to-date research and evidenced-based treatments are ways that social workers can protect children from harm. Since social workers are held in a position of trust, anxious parents are likely to try what professionals suggest. Therefore, social workers need updated information about safe, reliable and effective treatment for parents and people with ASD.

### **Need for Cultural Competency in Social Work Education**

Ironically, MSW students’ levels of interest in people with developmental disabilities (DD) ranks among the lowest of all client populations, (Butler, 1990). In a qualitative survey of MSW social workers, another researcher found overwhelmingly positive stories of their practice experience, and that “generic” social work practice skills were helpful as they embarked on their careers (Russo-Gleicher, 2008). Still, as a profession, we must improve our preparation in academia, especially culturally competent practice for those with ASD, and one grounded in a new, strength-based conceptualization: neurodiversity.

### **Conceptual Framework**

In the 21<sup>st</sup> century, the most contemporary view of disability for people with cognitive disabilities is labeled *neurodiversity*. Rather than pathologizing ASD, those favoring a neurodiversity perspective self-identify as being on the spectrum, are proud of their differences; and they identify and feel included in their “tribe” as Silverman describes (2015). In other words, many relate strongly and proudly as individuals with autism, and do not see themselves as

“disabled.” Indeed, individuals with Asperger’s Disorder possess exceptional skills, often in math, science, and music, and have made countless contributions to society (American Psychological Association, [APA] 2013). Even family members have begun to take pride in the neurodiversity identity of their children (Cascio, 2013).

Proponents of this conceptualization see ASD not as a disability, but rather a natural variation in human beings that is manifest particularly in cognitive ability, such as differences in perception, sensory differences, attentional issues and exceptional abilities. Features of autism that some would label as deficits could be adaptive in a broader evolutionary context. For example, the weak central coherence found in autistic brains, whereby they have an impaired ability to grasp visual gestalts or whole pictures and instead focus on details, may have served protective purposes in primitive societies (Masataka, 2017). Those with autism have faster target detection in feature and conjunctive visual searches and more accurate local target detection. Masataka thus contends that these skills are survival tactics that would provide an advantage in the face of diminished ability to communicate with people (Silberman, 2017). Research suggests that children have an exceptional explanatory drive, (understanding of unsolvable problems) particularly for things in the physical environment (and not necessarily in social contexts) as we discovered by Rutherford and Sabiaul (2015). This conceptualization most closely fits social work’s strength-based perspective, and some within the autism community have become proud of their differences. Within the past twenty years, the term neurodiversity has emerged from three important concepts: multiple intelligences, the strength-based perspective, and critical disability theory.

### **Multiple Intelligences**

Howard Gardner was the first to articulate the concept of multiple intelligences, identifying seven distinct types of intelligences, and has studied them extensively (Gardner, 1993). Rather than thinking of intelligence as “norm” or “center” in traditional paradigms, his theory posits that every individual has some variation of all the natural intelligences (Gardner, 1993).

Thomas Armstrong has elaborated on these ideas through his scholarship on neurodiversity and brain differences which include multiple examples of all types of intelligences (2010a, 2010b). His research suggests that autistic brains have both strengths and weaknesses. In his book *Neurodiversity: Discovering the Extraordinary Gifts of Autism, ADHD, Dyslexia, and Other Brain Differences*, Armstrong contended that society has adopted a disease-based orientation to brain differences which, much like the medical model, downplays the positive side of those differences (2010). As a field, social work has generally followed suit in using the medical model; therefore, the need to reframe the paradigm about people with autism is a prerequisite to working with this group. By taking a narrow view of intelligence as our society does, social work first needs to appreciate the many types of intelligence and operate from a broader framework.

### **Strength-Based Perspective**

Another aspect of neurodiversity stems from the strength-based perspective of social work practice. Social workers and other helping professionals label those with autism with a checklist of deficits, rather than seeing their strengths. Social work education, policy and practice is likely to follow suit with a medical model of disabilities, whose prime aim is to “cure” a person. Opposite the medical model in understanding treatment options for disabilities is a social

work framework that emphasizes an individual's strengths, focusing on capabilities and opportunities instead of impairments (Saleeby, 1992).

Deficit thinking became evident in research, as some began pointing out the insidious and pervasive form of bias in research, such as interpreting any difference in brain structure as “disorder” when a similar finding among neurotypicals would not be labeled as such (Blume, 1998). Where is the focus in autism research that could compare in its richness to “heightened musical abilities in people with Williams Syndrome, the warmth and friendliness of persons with Down Syndrome, and the nurturing behaviors of persons with Prader-Willi Syndrome” (Armstrong, 2015, p. 349)?

Strengths found in those with autism may suggest an evolutionary explanation for why these “disorders” are still in the gene pool (Armstrong, 2015). Excellent attention and memory for detail and a strong drive to detect patterns are found among those with autism—strengths which can hardly be called a disability (Baron-Cohen, 2017). In fact, Baron-Cohen argues that sometimes persons with such brain differences function even better than typical individuals given certain environments and tasks. In addition to the strength-based perspective, many people in the autism community adopt a critical disability lens to advance their ideas.

### **The Role of Critical Disability Studies**

With the advent of the disability rights movement in the 1980s, many scholars have adopted Critical Disability Theory as a framework of scholarship; succinctly defined as the academic side of the disability rights movement (Ferguson & Nussbaum, 2012). Critical Disability Theory utilizes the viewpoint of the disabled themselves to explain how they perceive themselves, others and the wider relationship with the world (Goodley, 2017). This theory builds upon the social model of disability, where society constructs institutional and attitudinal barriers,

but goes one step farther by suggesting that rather than simple removal of barriers for full participation in society, critical disability thinkers must demand emancipation of disabled people from societal influences that push them to the periphery (Ferguson & Nusbaum, 2012). In other words, they embrace self-determination and strive to be as independent as possible. They see professionals' roles limited to helping people to compensate, navigate and function in the world, but not turning them into (non-disabled) able-bodied persons (Sinclair, 1993).

The reason for examining critical disability research around neurodiversity is because those that hold this conceptualization span the whole world. Not surprisingly, the internet is the vehicle that has made this happen.

### **Role of the Internet**

The internet has been the primary mechanism to bring neurodiversity to the forefront. The Independent Living on the Autistic Spectrum (INLV), founded in 1997, was visited by Judy Singer from the University of Technology in Sydney, Australia and Harvey Blume, an American journalist. They discussed how those with autism had different cognitive skills, later coining the term “neurological pluralism” to describe the concept. Gradually, the term that emerged from the online narratives was *neurodiversity*. Judy Singer encouraged autistic individuals to use the Internet as a “prosthetic social device” to voice their identities and feelings surrounding an autism diagnosis and its implication in society. This new virtual environment is much more autism-compatible than the typical social environment, which has become more autism-incompatible recently (Jaarsma & Welin, 2012).

Later, in “Neurodiversity: On the Neurological Underpinnings of Geekdom” (1998), Harvey Blume exposed problems of invisibility among those with ASD, noting a plethora of institutions and journals devoted to the study of autism, often without a single autistic voice.



Like the consciousness-raising groups in the early women's movement, exposure to the thoughts of autistics awoke greater consciousness about how they were being perceived and excluded from broader society. Blume himself stated "The impact of the internet on autistics may one day be compared in magnitude to the spread of sign language among the deaf" (as cited in Silberman, 2015, p. 453). A wonderful door had been unlocked for autistic people, who often have difficulty reading facial expressions, gestures and body language. The online environment solved these issues.

Hughes (n.d.) states "neurodiverse people are routinely excluded from key conversations impacting their lives. In high level policy discussions, social justice and disability rights activism, autism awareness campaigns, contemporary 'mainstream' media discourse, and everyday conversations, autistics are often "erased, silenced [and] derailed" (Hillary, 2013 as cited in Hughes, p. 3). The catchphrase "Nothing about us, Without Us" came to provide a unified theme, if not a battle cry of those with ASD.

Neurodiversity may be the next liberatory and civil rights endeavor, but it requires both an ontological and conceptual shift in thinking. Our society may be on the precipice of adopting neurodiversity with regards to autism, much like biodiversity and cultural diversity have transformed medicine and sociology. All these concurrent developments herald the beginning of neurodiversity concept as a new cultural competency; one that is consistent with the social work ethics of self-determination, empowerment, Critical Disability Theory, strength-based perspective and inclusion of marginalized individuals. Adoption of new ways of thinking takes time, especially when there are divisions within the autism community.

### **Neurodiversity Limitations**

Like most transformative and new theories, neurodiversity highlights several tensions within the autism community if not the wider society. The central discourse is the cure versus acceptance dichotomous philosophies. Some favor striving for a cure for ASD, investing money in genetic research and intervention, while others who subscribe to the neurodiversity concept favor acceptance. In fact, neurodiversity arose from the perceived marginalization of autistic people by organizations run by parents of autistic people (Chamak, Bonniau, Jaunay & Cohen 2008; Ortega, 2009). In one survey study, when researchers questioned those with autism, family members of a person with autism, and others with no relation to autism, they found that respondents who self-identified as ASD viewed it as a positive identity that needs no cure. Their differing views underscored the core difference between the medical model and neurodiversity (Kapp, Gillespie-Lynch, Sherman & Hutman, 2013).

Complicating matters even more is the recent change in the DSM 5 criteria that makes inherent assumptions about etiology and treatment. Autism is diagnosed primarily on social deficits, i.e., medical model, which runs counter to a social model of disability in which “oppression alone creates disability, a notion disability rights advocates increasingly criticize as not recognizing the deficits themselves lower quality of life” (Kapp et al., 2013, p. 68).

But the different philosophical orientations do not end there. These cure-versus-acceptance philosophies and the medical model versus social/cultural model tensions have been further expressed in different autism groups. Many organizations and research initiatives have been birthed by family members of those with autism, and although well-intentioned, omitted autistics from their organizations. One example of this is Autism Speaks, the largest autism-focused organization as initiated by Bob and Suzanne Wright, grandparents of a child with autism.

As an organization, Autism Speaks has a role to play in the development of neurodiversity. Throughout their website, words such as “burden”, “tragedy”, and search for a “cure” to autism clearly point to a medical model. Autism Speaks raises millions of dollars for research but spends almost nothing on practical help for families struggling every day. People who ascribe to neurodiversity consider the stance of Autism Speaks of finding a cure, eradicating autism altogether, as eugenic in nature and thus question the motivations of the organization (Kreck, 2013). Further, “Autism Speaks does not have, nor has ever had one autistic person in their organization or board”, and promotes exclusionary practices for disabled people (Kreck, 2013, p. 14.).

To fill the void created by this, groups such as the Autism Self Advocacy Network, (ASAN) the Global and Regional Asperger Syndrome Partnership (GRASP) and the Autism Society of America include people with autism in every level of their organization have stepped forward with policy initiatives and programs. If disability is both culture and identity, there is an autism community that is “setting off disability studies as a socio-political-cultural examination of disability from the intervention approaches that characterize the dominant tradition of disability” (Linton, 1998, p. 132).

ASAN has been successful in this regard. In 2006, for example, Congress passed the first federal legislation, The Combatting Autism Act, which was a monumental achievement as the first national legislation to ASD was recorded. When the act was up for reauthorization in 2011, self-advocacy groups like ASAN, who disliked the metaphor of “Combatting Autism” successfully mediated the new bill, the Autism Cares Act of 2014, (Autism Collaboration, Accountability, Research, Education and Support) incorporating the more respectful language, a

clear victory (Diamond, 2014). ASAN successfully used empowerment to advocate for their own wording.

If we expect to generate progress in understanding ASD, then it is imperative for people with ASD to be in the center of research and policy organizations. To adequately train social workers—not only to work with people with autism, but on the macro practice level to also impact policy—social workers need to be aware of the culture of organizations that operate from these different points of view.

### **Neurodiversity's Narrow Definition**

In addition to the cure-versus-acceptance assumption, other inherent assumptions about neurodiversity must be examined. First, although differences in neurological functioning, sensory processing and cognitive processes apply across the board to ASD, ninety percent do not have a savant characteristic (Edelson, n.d.). Only a narrow definition of neurodiversity, referring to high functioning and more cognitively abled individuals is reasonable (Jaarsma & Welin, 2012). A broader definition of neurodiversity, which would capture more cognitively impaired or nonverbal people with autism is problematic.

Secondly, nonverbal autistics are uniquely vulnerable to oppression. The self-advocates and supporters of neurodiversity, who are a more organized, politically savvy group, can easily overlook nonverbal individuals unless they are participating in the Autism Self Advocacy Network. Thus, the neurodiversity model leaves out the voices of some people with autism while purporting to speak for all those with autism. Because of the complexity of lower-functioning people with autism, getting their views or perspectives is often impossible. Consequently, some parents are now critical of neurodiversity because of the real struggles they face with their child.

A third shortcoming of neurodiversity is its notion that “living in a society designed for non-autistic people contributes to, and exacerbates, many of the daily living challenges that autistic people experience” (Robertson, 2010, p. 27). Yet, those favoring this view offer no alternatives to living within the larger society of neurotypicals.

### **Neurodiversity Offers No Treatment**

The most compelling argument against neurodiversity is the idea of eschewing treatment. Those who favor a neurodiversity conceptualization argue that interventions are unnecessary; acceptance by others of their idiosyncrasies and strengths is necessary. Many autistics particularly dislike Applied Behavioral Analysis (ABA) which uses principles of behavior modification to extinguish behaviors, like self-stimulatory behaviors (spinning, rocking, arm flapping) and perseveration, which most people would agree are harmless. Begun by Ivar Lovaas at UCLA in 1969, initially ABA therapy used aversives techniques such as a small shock to obtain compliance, but this was later discontinued. Even without the use of aversives, self-advocates dislike the stressful drilling in ABA, and the narrow focus on forceful normalization for its own sake (Ne’eman, 2010; Ortega, 2009; Pollack, 2013).

At first glance, the arguments against treatment and for greater acceptance seems reasonable, but parents, teachers, other caregivers and autistic individuals themselves often struggle daily with many symptoms, such as self-injurious behavior, stuttering, and compulsive rituals. At the very minimum, comorbid disorders add to their distress, and at the worst can be life threatening, such as seizure disorders.

Finally, many caregivers are affected by the behaviors of those with autism, and their needs should be taken into consideration. In this regard, neurodiversity ignores perspectives of others and the stress of caring for some people with ASD. Since ASD is a pervasive condition

and effective treatments exist, it is imperative that options for treatment be made available. While every intervention or treatment carries some risk, it should be carefully weighed with regards to the possible benefits both for the individual and caregivers. Social workers can best address this issue, not only because they are open to eclectic treatments, but because the social worker's training allows for observing a problem from many perspectives. Therefore, understanding treatment, policy, family issues and remediation are all areas of competencies social workers need in order to work with those with disabilities.

### **Limitations to the Politics of Neurodiversity**

Before exploring social work education and practice with neurodiversity, framing it within a wider context of social justice is vitally important. In an overview of the claims of the neurodiversity movement, Jaarsma and Welin (2012) discuss the claims and the culture of autism. In other words, differences in brain structure or neurological functioning have no more significance than differences in skin color or sex (Jaarma & Welin, 2012). Like race, class, and gender, people who identify as autistic, who identify as having atypical neurological development, believe such human differences should be accepted and respected as other human differences are (Griffin & Pollack, 2009). The Autistic Self Advocacy Network aims to have the experiences of autism be considered as epistemology, a recommendation that is surely consistent with social work. ASAN seeks to advance their work through public policy, media representation, research and system change (Kreck, 2013). They want to remedy sociopolitical barriers to enable equal opportunity for those with ASD by improving accommodations and services (Baker, 2011). Social workers need a solid foundation for macro-level practice in order to come alongside those from ASAN who desire public policy more favorable to their orientation.

Unfortunately, these divergent philosophical views have, in effect, diminished the voices of people with autism. Lawmakers and policy writers, funding agencies, and the developmental disability system of care are already fragmented, so the voices of parents and caregivers have been more influential than those with ASD. Social workers play integral roles in helping autistic people establish their identities in a world filled with ableism, and with the current philosophical divide, social workers are called upon to establish an epistemology for understanding alongside their clients (Kreck, 2013).

### **Discussion and Implications**

#### **Social Work Curriculum**

In this paper, the author has discussed the advent of neurodiversity as a new conceptualization of those with ASD that is consistent with social work values. Although the neurodiversity framework can be used across all levels of practice (micro, mezzo, macro) cultural competency begins with a strong knowledge base. Therefore, the development of a social work curriculum that takes into consideration pedagogical and practice aspects of working with those with ASD is imperative. Neurodiversity should be the primary philosophical orientation to the knowledge and practice of social work, but certainly not the only one. The voices of those with ASD and family members should be woven into a social work curriculum which could empower the autism community. Knowledge and practice using evidenced-based treatments can and should be part of a curriculum, as well as personal contact with ASD. As Snyder, Brueggemann and Thomson (2002) suggest, disability can be transformative for pedagogy, contributing to the formation of “an enabling pedagogy, a theory and practice of teaching that posits disability as insight” (p. 321).

A key question emerging from the social work literature is whether disability (including ASD) should be infused into the main curriculum or targeted more fully in an elective or required course. In the specialized curriculum, development of a course on disabilities, an elective course, or an independent study could be potential avenues for specialization (Dunn et al., 2008). One example of a specialized curriculum was developed by social work scholars Mogro-Wilson, Bruder and Davidson (2014) at the University of Connecticut School of Social Work, along with the University Center for Excellence in Developmental Disabilities, through a grant from Leadership Education in Neurodevelopmental and Related Disabilities. They developed a social work practice and policy course using empowerment as a framework, an elective graduate course designed as a pilot project to fill an identified gap. There is no textbook yet on Social Work Practice with ASD, so the curriculum used research articles or text chapters. In addition to excellent course reviews, this program used collaboration with individuals with autism themselves, as well as the community and family members of those with autism to infuse empowerment throughout the course.

A specialization in disability studies can also be developed in conjunction with other departments (education, nursing, rehabilitation), university disability offices, or with University Affiliated Partnerships, as was the case described above. Given the expertise of faculty on disabilities research, the approach of both core and specialized content on disabilities in social work education may be feasible.

### **Implications for Social Work Cultural Competency**

In a study on attitudes of graduate social work students toward people with disabilities, for students without prior experiences with this population, affective experiences (such as field experience) were most successful in students' acquisition of knowledge, more positive attitudes



about people with disabilities, and more willingness to consider them as future clients (Begab, 1970). More recently, college students who personally knew someone with ASD had more positive attitudes toward their peers with ASD, consistent with the findings of previous research (Gillespie-Lynch, et al., 2015; Nevill and White 2011). Consistently, empirical evidence shows that contact with people with disabilities raises one's perception favorably.

For social work education, knowledge must be supported with cultural competency in practice with ASD. This entails practitioners' need to abandon assumptions about feelings, thoughts, beliefs and skills of people with ASD. Social workers can increase their cultural acumen in three ways. The first, discussed above, is to develop a curriculum on social work practice with ASD, or at the very least, a unit on this population within a broader course.

Secondly, social workers need to understand the communication differences present in those with autism and develop ways to reach them. A primary consideration for anyone working with someone with autism is to understand and cater to their sensory systems. If the lights are too bright, the environment is too noisy, or there are smells the person dislikes, no progress will be made. In the same vein, the wide range of communication abilities found in ASD means understanding how to communicate in a variety of ways. For those who are completely nonverbal, use of text to talk, iPad or assistive devices may be necessary. For those with some verbal ability, the rate of speech needs to be slower because the visual and auditory fields are out of sync in people with autism (Stevenson et al., 2014). Often, combining a slower rate of speech with a visual cue or picture is the best way to reach a person with autism, as well as checking for understanding. For those people with autism and with greater intelligence and verbal ability, being careful to avoid idioms or metaphors in conversations will help with communication because they do not understand them.

Finally, social workers need practice experiences with those on the autism spectrum. Some of the behaviors of people with ASD will be perplexing for practitioners not accustomed to this group. Expecting typical eye contact and ignoring self-stimulatory behaviors are cultural competencies that must be practiced. If a person with autism is in individual counseling, meeting at the same time each week is preferable because they thrive on predictability. In a practice field such as social work, there is no replacement for experience.

### **Conclusion**

In this paper, the author recommends the development of a curriculum on social work practice with ASD, including micro-, meso-, and macro-practice as vital to the development of an effective, culturally competent social work workforce. As the prevalence of ASD and research continues to grow, social work education must address this population because, unlike other professions, social workers are trained to examine a problem from multiple perspectives, a critical skill for working with such a complex condition. Other professions, such as education and rehabilitation in response to federal regulations, quickly developed coursework to address those with ASD, so social work should follow suit. One practical step is the development of a standard curriculum that would present up-to-date research, practice, and policy information. Effective treatments that can improve the quality of life for those with ASD and their families are available and should be offered. At the very least, a smaller unit on developmental disabilities could be developed and inserted into other social work courses. Embracing the strengths-based perspective inherent in neurodiversity is not only consistent with social work values, but also preferred by those favoring neurodiversity. Social work education would be strengthened by such a curriculum.

Desirability of Master's Trained Social Workers to Work with People with Autism

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This manuscript was submitted as partial requirement for the DSW Banded Dissertation. A special thanks to Dawn Brubaker, Doctoral Candidate for peer review of this article.

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### Abstract

Although social work as a profession prides itself on social justice and the eradication of conditions that allow oppression, segregation and poverty to exist, those with Autism Spectrum Disorder, (ASD) are an overlooked population in practice. In schools of social work, practice with persons with disabilities, and more specifically with ASD has been absent among course offerings (Depoy and Miller, 1996). To uncover the potential reasons, the purpose of this paper is to better understand what master's trained social workers understand and believe about people with developmental disabilities, specifically autism spectrum disorder. Using a cross-sectional internet based survey amongst master's trained social workers who have membership in the National Association of Social Workers (NASW) or the North American Association of Christians in Social Work (NACSW), this study examined how gender, knowledge about autism, attitudes toward people with autism and contact with people with autism predict the desire to work with such clients. Important findings include that contact with people with autism, female gender, cognitions and feelings about people with autism were predictive of one's desire to work with people with ASD. Implications for social work education, practice and research are discussed.

Autism Spectrum Disorder (ASD) is an enigmatic, misunderstood condition with wide variability in presentation and an overdetermined, unclear etiology. Because of the nature of autism, which manifests so differently across domains of development, as a pervasive condition, there is a great need for a multidisciplinary, trained workforce to serve people with ASD at each stage of life. Autism Spectrum Disorder is defined as the collection of symptoms of social and communication differences (difficulty using communication for social purposes, understanding contextual rules for conversations, and understanding inferential words) and behavioral differences (insistence on sameness and stereotyped motor movements) (American Psychiatric Association, 2013). The prior categories of PDD-NOS, Asperger Disorder, Retts and other terms that fell under the umbrella definition in the DSM IV were folded into the broader term of Autism Spectrum Disorder in the DSM5. Although a deficit model definition, the criteria set forth in the DSM-5 provides a common language that will be used throughout this paper.

There appears to be a disconnection between social workers, social work education, and supplying the disability workforce with social workers, who are often holistic practitioners, and could be effective with this population. With their casework skills, and unique orientation to using person-in-environment framework, social workers are, and should be, on such interdisciplinary teams, serving both the family member with ASD and the larger family. Schools of social work have not yet developed curricular materials specific to this population for social workers to be prepared for their role on such teams. The problem seems to be distributed among master's students when examining both foundation year master's students (14.2) and advanced-year master's students (14.6) who did not differ in knowledge scores regarding ASD (Dinecola and Lemeiux, 2015). Little content on autism specifically can be found in the social work undergraduate and graduate curriculum, despite the focus of diversity and value of human

rights inherent to the profession of social work (Dababnah, Parish, Brown & Hooper, 2011, Joyner, 2010, Laws et al., 2010). Surely, social work education can do a better job of preparation of social workers for this population.

In a study examining social workers' understanding of ASD, "parents of children with ASD reported that social workers did not understand the nature of autism, that they misjudged or underestimated the needs of these children and their families, and that they lack the skills to work with them" (Preece and Jordan, 2007, p. 926). Amongst community mental health providers, researchers have found inaccurate beliefs about ASD (Heidergerken, Geffken, Modi, Frakey, 2005), and therapists who have limited training in ASD are highly frustrated serving this population (Brookman-Fraze, Drahota, Stadnick, & Palinkas, 2011). Lack of training was the most frequently cited frustration of parents of children with ASD in community mental health settings (Brookman-Fraze, Baker-Ericzen, Stadnick & Taylor, 2012). Since social workers practice in community health care settings, these findings would apply to them as well.

The lack of social work education's attention to ASD is not new. As far back as 1993, Bishop and Rounds found less than two thirds of MSW students had training on disability related issues, with under half learning about available resources for those with ASD. Twelve years later, a study of master's students in one California program found that two thirds of second year masters students had received no training on disability related issues, but almost half had worked with a person with a developmental disability (Nash and Potts, 2005). This trend has continued today but has far greater impact given the rising numbers of ASD.

There are many reasons for this disinterest. According to Specht and Courtney, (1995) many social workers have turned away from the poor and more vulnerable populations for more lucrative careers in private practice settings, which shifted the profession away from macro

practice and social justice causes to work with individuals. Perhaps believing people with ASD do not benefit from insight-oriented psychotherapy inherent in delivery of services in private practice settings, social workers risk ignoring people with limited verbal and intellectual capacities (Russo-Gleicher, 2008). Some authors have argued that social workers are reluctant to work with certain groups due to the perception that psychotherapy is inappropriate for them (Aviram & Katan, 1991). Unfortunately, “social work has a long history of student disinterest in serving persons with developmental disabilities” (Burge, Druick, Caron, Oulelette-Kuntz & Paquette, 1999, p. 51). This is perplexing but could be partly due to the stigma that is prevalent in our society which views work with those with intellectual disabilities as less rewarding relative to other practice areas. Student interests are also an economic drive in higher education, so perhaps the absence of curricula reflects this phenomenon.

Workforce development is crucial given the striking numbers most recently released by the Centers for Disease Control and Prevention on the prevalence of ASD. Nationally, one in 59 children born in 2018 will be diagnosed with ASD; which represents a 15% increase from 2014 (Xu, Strathearn, Liu & Bao, 2018). The Centers for Disease Control and Prevention has tracked the prevalence of ASD through the Autism and Developmental Disabilities Monitoring Network, (ADDM) which collects data from eleven sites across the United States by examining ASD in eight-year-olds. Although there is great variability in the data, in 2006, approximately 1 in every 110 children were classified as having an ASD, which represented a 57% increase from the 2002 ADDM surveillance (ADDM Surveillance, 2009). When comparing data from 2002-2008, ASD had increased by 78% in the same monitoring sites (ADDM Surveillance, 2008). Even though diagnostic criteria changed in the DSM definition in 2013, prevalence rose to 16.8 per 1000, (1 in 59) by 2014, which represented a higher prevalence (Bao, Wiggins, Christensen, Maenner,

Daniels, Warren...Dowling, 2018). Even though some are critical of the ADDM's methods of case selection and other analysis (Fombonne, 2018) overall, ASD has increased 150% since 2000, and is an urgent public health concern (Xu, et al., 2018).

With a burgeoning research base about ASD, and a growing prevalence, social work education needs to develop curricula and practice at all three levels of intervention (micro, mezzo and macro) to more adequately meet the needs of people with autism and their families. Social workers, who champion the rights of vulnerable people, need to be more involved with this population, which entails a concerted effort in workforce development for social work education in the coming years.

The purpose of this study is to examine what master's trained social workers understand about ASD, and how their attitudes (stigma) may contribute to the reticence of working with those with autism. A cross sectional sample of master's trained social workers completed online surveys. Using linear regression, the desire to work with people with autism was regressed on gender, knowledge, attitudes and contact of people with autism. . The research hypothesis was that as knowledge about autism, more positive attitudes about autism (less stigma) and greater contact with people with autism increase, along with female gender, the desirability to work with people with ASD will increase.

### **Literature Review**

According to the recent report from the National Social Work Workforce (Salsberg, Quigley, Mehfoud, Acquaviva, Wyche & Silwa, 2018) of the 107 employed master's social workers in a healthcare setting surveyed, only 1.9% worked with people with physical disabilities, while 0.9% worked with people with developmental disabilities, which represents 0.3% and 0.1% of all MSW holders respectively. It is likely that social workers in a setting other



than healthcare do work with people with ASD, however, this information was not captured in the report. Nevertheless, given the sharp increase in prevalence of ASD mentioned above, it is important for the academy to address and better serve this population.

A plausible reason that social work has not taken the lead in working with people with ASD is due to not having a distinctly social work treatment approach. Indeed, social workers function as primary care coordinators for individuals (Claiborne & Vandenburg, 2003) where they were found to help clients have a voice in their treatment (of disease management) and actively participate in their own care. Social workers have been found to be helpful to family members of those with developmental disorders and mental health diagnoses (Davis, Barnhill & Saeed, 2008). However, as Werner and Grayzman suggest (2011) students in more practical fields, such as special education, occupational therapy, and speech and language therapy, might hold a clearer understanding of their role with this population (Casella, 2005; Hallgren & Kottorp, 2005; Kauffman & Hung, 2009) than do nursing and social work students (Rosen & Zlotnik, 2001). Similarly, one study found college students in engineering and physical science fields reported higher levels of comfort and willingness to interact with a peer with ASD compared to students studying arts or social sciences (Nevill and White, 2011). Holistic approaches to complex problems are one strength of the social work profession, but this also presents two distinct disadvantages: not knowing one's role on the interdisciplinary team, and lack of a specific intervention for those with ASD.

The trend in disabilities through the 1970's that shifted them away from an individual problem (the medical model) to a social issue (the social model) perhaps was a catalyst for other professional fields to research and develop curriculum and policies. Two critical pieces of federal legislation, the Rehabilitation Act of 1973, which prohibits discrimination of disabled

individuals in federal agencies, programs, employment and contracts with the federal government and the Education for all Handicapped Children's Act of 1975, which mandated a free, appropriate public education for all children codified these civil rights for the disabled (Rehabilitation Act of 1973, Education for all Handicapped Children Act of 1975). This brought about a new generation of individuals cognizant about their educational and civil rights, which potentially makes them more discerning consumers of services.

During this time, social work did not follow suit with their own treatment approaches. In a separate study of 50 U.S. schools of social work, "3 (6%) offered concentrations in developmental disabilities (DD) studies, with 2 of the 3 schools housed within concentrations of "mental health and disability" and "health, aging and disability" ...while the third offered field work with a DD concentration without coursework." (Laws, Parish, Scheyett and Egan, 2010, p. 326).

Instead, as early as 1970, the field of psychology advanced applied behavioral analysis (ABA) therapy as a treatment, developed by Ivar Lovaas, at the University of California Los Angeles. ABA uses behavior modification to target language development and behavioral manifestations of ASD and has been shown to be an effective intervention for children with ASD (Dixson, Garcia, Granpaneesh, & Tarbox, 2009).

Although it is poorly understood why, social workers generally are disinterested in working with people with disabilities. When the NASW did a survey in 2007, only 2% of social workers reported working in the field of developmental disabilities (Whittaker and Arrington, 2008). Across many studies, social work students reported less interest in working with disadvantaged client groups, including people with disabilities, compared with clients who have more resources and less severe problems, which is consistent with Courtney and Specht's

observations such as individuals and families with personal problems (Jack & Mosley, 1997; Krumer-Nevo & Weiss, 2006). Jack & Mosley found that the developmentally disabled and elderly populations scored lowest in interest among social work students in their longitudinal study. Similarly, Limb and Organista (2006) found that social work students gave the lowest ranking (of various types of clients) to practice with people with disabilities and the aged, both at entry and at graduation.

Social work is not alone in this disinterest, however. Studies have shown that working with people with intellectual disabilities is the least preferred client population amongst many professionals. Crowe and Mackenzie (2002) found occupational therapists students had no desire to work with adults with developmental disabilities, and this was related to their lack of field placements with that group, while nursing students had the least positive opinion of people with intellectual disabilities (Tervo, Palmer & Redinius 2004).

The lack of curriculum in social work education is not hampered by lack of faculty expertise; “of 50 schools sampled, more than half had tenured-line faculty with research backgrounds in issues pertaining to individuals with disabilities” (Laws, et al., 2010 p. 327-328). A more recent study found that a lack of faculty expertise did contribute to the problem of inadequate coverage of disabilities in the social work curriculum, with respondents reporting covering disability content in their curriculum slightly more than half the time (Ogden, McCallister and Neely-Barnes, 2018). There are few courses devoted exclusively to disability, and the above mention study found “six core curricular areas where disability content was covered inadequately” (p. 370). One study of nursing, education, social work, occupational therapy and communication disorders students asked about coursework specific to ASD and while each of the other professions had some courses, social work students reported none

(Werner, 2011). Nor is lack of satisfaction with social work practice with people with ASD a barrier; a qualitative survey of MSW social workers who practiced with clients with ASD found overwhelmingly positive stories of their practice experience, and that “generic” social work practice skills were helpful as they embarked on their careers (Russo-Gleicher, 2008).

To understand the reasons involved in this disinterest, four possible factors are described in the literature, and each will be examined in turn.

### **Gender**

A variety of empirical literature supports the idea that women are more interested in working with people disabilities of all types, including autism. In a study of college students, females rated a child with autism significantly more positively than men ( $F(1, 257) = 19.4, p < .001$ ) (Iobst, Nabors, Rosenzweig, Srivorakiat, Champlin, Campbell & Segal, 2009). Others found that women held more positive attitudes amongst college students (Alhborn, Panek & Jungers, 2008), hospitality and recreation students (Perry, Ivy, Shelar & Conner, 2008) and medical students (Tervo, Palmer and Redinius, 2004) in working with people with intellectual disability or ASD. Trochez (2015), found that men scored higher in perceived dangerousness of people with autism relative to women, but ironically also higher in positive attitudes towards them relative to women, a contrary finding from this literature.

Possible reasons for gender differences include that women are less accepting of stereotypes of other individuals than are men (Carter, 2006) or that they spend more time with children than men and so are more accustomed to their behaviors. Gender, then, is one of the predictors of wanting to work with people with autism.

### **Knowledge**

With no other client group is accurate knowledge about ASD more critical. ASD “has a wide variability to course and treatment response, and current lack of curative treatments render the disorder fertile ground for quackery” (Herbert, Sharp & Gaudiano, 2002, p. 24). Interventions such as Neurofeedback, energy therapies, facilitated-communication, animal-assisted therapies, and electroconvulsive therapy are empirically unsupported, yet are practiced by social workers (Thyer and Pignotti, 2015). Although the vaccine/autism controversy is beyond the scope of this inquiry, accurate knowledge about autism is vital. White (2014) asserts “social work is singularly positioned to utilize this first-hand knowledge to challenge pseudoscience interpretations” (p. 273), a finding echoed by Wray, Buskirk, Jupka, Lapka, Jacobsen, Pakpahan & Wortley (2009) who in a randomized controlled trial found vaccine safety messages provided to parents increased accurate beliefs about vaccines. Further, social workers are in a position to influence parent’s decisions (Copeland, 1996), which if unvaccinated, poses substantial risk to children. Beyond a simple risk analysis, adoption of empirically supported treatments is considered an ethical mandate for practice, according to the NASW *Code of Ethics*. Thus, having good foundational knowledge is critical to any human service professional, yet both bachelors and master’s students do not have sufficient knowledge about ASD.

There have been four prior studies to examine the knowledge base of social workers regarding ASD. Preece and Jordan (2007) found lack of knowledge among their sample (N=27) of practicing social workers in an autism program in England, including key facts about autism, inaccurate understanding of intervention approaches, and a more positive attitude towards their ability of generic services to meet client’s needs than was supported. Haney and Cullen (2018) found in their sample (N=793) from New Jersey’s licensed social workers who had uncertainty

about autism's etiology and uncertainty about the age autism can be first recognized and diagnosed, although the sample of social workers generally held strength-based attitudes.

Dinecola and Lemieux (2015) found master's level social workers had "low levels of understanding of symptoms, etiology, characteristics, co-occurring conditions and treatment of ASD with fewer than half (48%) of items on a questionnaire answered correctly" (p. 35). It is likely these inaccuracies undermined their work with those with ASD. Having a sufficient knowledge base about ASD, including classroom instruction, and personal or professional contact with that population increased the self-efficacy of master's level social workers in practice (Dinecola & Lemieux, 2015).

Pearson, Livingston, Brandon & Cunningham (2013) found that "a statistically significant relationship between attitudes toward autism and knowledge of autism ( $r = -.33, p \leq .01$ ) among African American college students" (p. 43). Other scholars have found that an online training program for college students, even though they had relatively high levels of baseline knowledge, the training program increased both knowledge and decreased stigma, with a greater impact on knowledge (Gillespie-Lynch, et al., 2015). Thus, knowledge and attitudes are highly correlated with this group, and possibly with other demographic groups.

### **Attitudes/Stigma**

Attitudinal barriers and endorsement of stigma is considered a barrier to learning about and practicing with those with ASD. In a qualitative study, the most frequent theme elicited from a variety of helping professionals was that working with people with autism was viewed as difficult and demanding and required a high degree of energy and patience. Respondents felt that lack of positive feedback and appreciation from their clients with ASD was a barrier (Werner, 2011).

Attitudes about autism get transmitted to others as well. It remains important to help the adults understand the disorder and to enhance acceptance of children with autism, because adults may transmit their attitudes about children with special needs to other children (Wiens & Gilbert, 2000; Yunker, 1988). As with disability, children observe adults' reactions to determine their impressions of others. Researchers Seligman, Mukai, Woods and Alfeld (1995) found parent knowledge of common myths (about AIDS) predicted their child's knowledge of those myths and willingness to interact with people with AIDS, for instance. Thus, better attitudes about disability among adults is important.

In another study examining stigma in a population of adults with Asperger's disorder (previously identified as a higher functioning individual with ASD) Butler and Gillis (2011) found less stigma was related to an increase in education, increased information on the internet, and more portrayals of individuals with mental illness in popular media including television, movies, and commercials.

Lack of information may contribute to an avoidance of working with this population. Werner (2011) found this reflected in the fact there were no relevant courses within the school of social work, (while there are courses on working with children and adolescents) thus working with disabilities was not appealing. In this study, stigma and fear were the most salient reasons given by social workers to avoid working with people with autism (Werner, 2011).

As the profession that champions social justice and advocates for the poor and other marginalized groups in society, social work has fallen short with this population. Adults with autism, for instance, have "staggeringly low levels of employment or satisfaction with their work and pay" (Milton and Sims, 2016, p. 525). Autistic people are "some of the most marginalized in

society, historically depicted as embodying ‘deficits’ in their social being, incapable of full socialization and personhood” (Milton 2014b, p. 1405).

It is encouraging to find that negative attitudes do not always prevail. In a recent study, social workers surveyed believed that people with ASD can contribute to society, do well in school and want to have friends, which indicates that social workers can discern differences within persons with autism, and do not subscribe to common stereotypes (Haney & Cullen, 2018)

### **Contact with people with autism**

A large body of research supports the idea that higher levels of contact (with people with autism or other disabilities) produce more positive attitudes towards ASD. Such contact is particularly salient in positive field placements and direct contact, which one study revealed was important among social work students (Jack and Mosley, 1997). Researchers findings (Stachura & Garven, 2007, Moyle, Iacono & Liddell, 2010), are consistent with “contact theory” which suggests that contact with people with disabilities is a major determinant of attitude and can reduce stereotyping and discrimination. Moyle, Iacono and Liddell (2010), for instance, found “lack of face to face contact with people with developmental disabilities during training influenced confidence during diagnostic or consultation processes” (p. 90), among medical students. In another large population-based study researchers “found that the odds of knowing the prevalence of autism with a high level of contact was 1.6 times those of little contact, and 2.3 times those with no contact” (Dillenberger, Jordan, McKerr, Devine, Keenan, 2013, p. 1563) Even psychiatric disabilities are included in the contact theory. A meta-analysis by Kolodziej and Johnson & Beutler (1996) reviewed 35 studies (N = 1,678) found the contact theory was



supported; adults' attitudes toward individuals with psychiatric disorders were less stigmatizing when contact occurred.

Numerous studies that have found the more people have contact with individuals with disorders, the less stigma they display. These findings support Allport's contact theory which proposes that prejudice and discrimination toward a group will decrease when contact is maintained...and all groups share equal status (Trochez, 2015, p.22).

One study, however, found that greater knowledge and contact did not, in itself, lead to more positive attitudes. Instead, it was the quality of contact that predicted more positive attitudes, and not just contact, per se. (McManus, Feyes & Saucier, 2011). Surprisingly, in a study using experiential learning and its impact on attitudes among various students, in a repeated measures ANOVA, there was greater change in attitudes from the beginning of the course to the beginning of their experiential camp experience, than the change that occurred by the completion of the camp experience, but there were positive changes throughout the course (Wozencroft, Pate and Griffiths, 2015).

Although Haney and Cullen (2018) examined the same question, their sample of licensed social workers from New Jersey limits the generalizability of the results. This study is the first to use a national sample of social workers extracted from two national professional organizations to answer the research questions.

### **Method**

This study employed a cross-sectional internet-based survey of social workers using Qualtrics Survey software (Qualtrics, Provo, Utah). This study was based on prior empirical studies that used linear regression to predict the desire to work with people with ASD, such as Haney and Cullen (2018), or structural equation modeling, by Werner and Grayzman (2011).

The present analysis, a linear regression, was completed using SPSS Version 16 (2007), where gender, knowledge, attitudes (stigma) and contact with people with autism were regressed on the desirability to work with people with autism.

### **Sample**

Because available names on list serves from two national professional organizations were used, the sample frame was a non-probability convenience sample. Master's trained social workers were selected for the survey because their advanced generalist practice education would allow for specialized practice in the curriculum relative to bachelor's level generalist practice (CSWE, 2015). Therefore, they would be more likely than undergraduate degree holders to have been exposed to social work knowledge, practice and policy as they pertain to disabilities. Additionally, masters trained social workers are more likely to have worked in the field for a number of years, and so would be more likely to interface with a variety of individuals, including people with autism and their families. For sample size, the recommendations of Tabachnick and Fidell (1989) of 50 surveys per predictor variable, (in this study's case, 50 times four, 200) is adequate to run multivariate analysis, were followed.

Two national organizations, the National Association of Social Workers (NASW) and the North American Association of Christians in Social Work (NACSW) were selected as the sample frame. In each case, a random sample was pulled from the larger pool of social workers with membership in the organizations. Three email blasts with 5000 names each (15000) were sent to NASW members, which after data clean up yielded 104 completed surveys, with a 0.69% response rate. NACSW provided 1,132 names of active members, who completed 177 surveys, a response rate of 15%. In order to ensure that participants who possibly had membership in both organizations were not given the survey twice, a visual check was

performed on IP addresses from the total sample. All responses were deidentified and analyzed in aggregate. The total sample size (N) was 281.

### **Measurement Instruments**

Four separate measures were used to measure the predictor variables. Knowledge, for this study, was operationalized as the composite score of the knowledge questionnaire related to autism. The Autism Stigma and Knowledge Questionnaire (ASKQ) is a tool to measure attitudes and knowledge about autism. This is a 42-item scale measuring knowledge of etiology, diagnosis, and treatment of autism and stigma. A group of 11 international autism researchers “rated the face, construct and cross-cultural validity of each item.... and included items if the mean rating was above a set threshold (> 3.15 out of 4), determined by the research team to meet a reasonable rating threshold that included all subcategories in representation, and could be clearly deemed true or false” (Harrison, Bradshaw, Naqvi, Paff and Campbell, 2017, p. 3284). Research on the psychometric properties for each subdomain, using test-retest analysis showed the “reliability of the classifications for the four subdomains were 0.982, 0.954, 0.984 and 0.933” (Harrison, Bradshaw, Naqvi, Paff and Campbell, 2017, p. 3288). In addition to the validity described above, ASKQ as identified using diagnostic classification model (DCM), the ASKQ also demonstrated high internal consistency” (Cronbach’s Alpha = 0.88) Harrison, Bradshaw, Naqvi, Paff & Campbell, 2017, p. 3288).

The second scale is the Social Worker’s Attitude Towards Disability Scale (SWADS). This 27 item Likert scale measures attitudes towards people with disabilities. “Content validity of the proposed scale items were assessed by an expert panel, recruited in the development of SWADS” (Cheatham, Abell & Kim, 2015, p. 385). The panel consisted of faculty from a large Southeastern university and expert panel members who specialized in disability related issues

who agreed to review the proposed items. For content validity, the experts rated each item but if mean scores for an item dropped below 3.5 (on a scale of 1 – 5), it was omitted from the scale, but if 3.5 or higher, the item was retained. Convergent construct validity was examined by comparing the subscales of the Multidimensional Attitudes Scale (MAS) three factor structure (thoughts, emotions and behaviors) to the subscales of SWADS where significant negative correlations among the three subscales were used as evidence for construct validity. Finally, through a process of “alpha-if-item deleted” coefficients for each item were examined, structural equation modeling confirmatory factor analysis was used to inform item deletion through multiple iterations” (Cheatham, Abell & Kim, 2015, p. 387).

In this study, for each of the items in SWADS, negatively worded items were re-coded so that higher numbers represented the greater amount of the construct measured. This scale was slightly modified by replacing “disability” with the construct of “autism.” “Reliability was measured and the alpha for both Feelings and Practices Subscales fell within an acceptable range” (Feelings  $\alpha=.85$ , Practice  $\alpha=.79$ ) however, the Cognitions Subscale did not ( $\alpha = .69$ ) (Cheatham, Abell & Kim, 2015, p.387).

There has been support for the idea that contact with people with disabilities increases the positive feelings about working with them (Dinecola and Lemieux, 2005, Yuker and Hurley, 1987). Seminal work by Yuker, Block, and Young (1966) suggested that factors such as age, gender, experience with persons with disability, and, to a lesser degree, knowledge of disability may be predictive of individuals’ attitudes toward persons with disability. When the Contact with Disabled People (CDP) was first developed, “construct validity was assessed by correlating contact scores with attitudinal scores obtained using the Attitudes Towards Disabled Person

Survey, by examining the extent to which CDP correlated with other variables” (such as years of rehabilitation practice or nursing practice) (Yuker, Hurley and Eisenberg, 1987, p.152).

As originally constructed the CDP was considered unidimensional, so later researchers completed exploratory and confirmatory factor analysis, and found the “CDP to have three distinct factors for 17 of the 20 items... general nonvalenced contact with people with disabilities... positively valenced and ...negatively valenced factors.” (Pruett, Lee, Chan, Wang & Lane, 2008, p. 217). The researchers also examined Pearson product-moment correlation coefficients of the CDP with factors from six other attitudinally related measures and found general and positive factors had significant positive relationships with two of them, which points to further validity of the CDP (Pruett et al., 2008).

For this survey, the Contact with Disabled Persons (CDP) scale of 20 items in five categories measured this idea, with a mean split-half reliability coefficient of 0.93, and alpha coefficient of 0.92, both of which are acceptable. This was slightly modified to the Contact with Autistic Person scale, where the word “autism” replaced references to generic “disability.” The scale developers agreed the scale could be “modified for specific disabilities” (Yuker and Hurley, 1987, p.148). The CDP had no subscales, but rather was summed for a composite score.

The fourth measure, a survey, titled Terry Desirability Survey was created to measure the dependent variable. Ten Likert-scale questions were summated to come up with a composite score, with negatively worded items reverse coded so that it measured the greater amount of the construct. Cronbach’s alpha for the overall ten item survey was adequate, ( $\alpha = .82$ ), as well as the two subscales of interest in working with ASD and preparation to work with ASD ( $\alpha = .73$  and  $\alpha = .80$ ) respectively.

To address validity of the survey and come up with shared meanings to survey questions two pilot tests of the survey instrument were undertaken (Converse and Presser, 1986). Pilot studies such as this help uncover difficulties encountered by respondents and their views on the format and language of the survey (Parahoo, 2006). Consequently, two master's level social work classes at a midwestern university were given a paper survey and asked to provide feedback. In addition to readability ease of the survey, master's students provided feedback on the length and breadth of survey questions. Feedback was generally positive, but some slight formatting changes helped make the survey more parsimonious.

The survey was administered using Qualtrics Survey software. An email message containing an anonymous link to the Qualtrics Survey was supplied to the non-probability convenience sample of social workers. The purpose of the study and consent form were introduced on the first page of the email message, and respondents had to click on the link to begin the survey. This action denoted informed consent, and each participant was given a unique identifier to maintain anonymity. For protection of human subjects, Expedited IRB approval [1164279-3] was obtained from the University of St. Thomas's Institutional Review Board.

To increase response rate, participants were offered an optional drawing at the end of the survey for a \$50.00 Amazon gift card. A separate Qualtrics link allowed participants to provide their home address for this purpose. Seven recipients were randomly drawn after the survey closed in July 2018 to receive the Amazon gift cards.

### **Procedures**

Data were downloaded from Qualtrics and put into an excel file, and two datasets, NASW and NACSW responses on the dependent variable were examined through box plots to visually determine if there were group differences, but none were found. Responses were

subsequently uploaded into SPSS. Missing data was addressed by omitting respondents that had greater than 20% of missing data; while those with fewer missing data were imputed to the mean.

Descriptive statistics were completed on each of the variables (See Table 2; See also Figure 2 Histograms). Subscales were created for ASKQ (knowledge, attitudes, stigma) and SWADS (cognitions, feelings, practice). Each of the scales were placed into the correlation matrix (See Table 3) to check for multicollinearity. With the exception of the two subscales of the TDS, which would be expected to have high collinearity, correlations among the predictors were low to moderate.

### **Analysis Plan**

Univariate statistics were run for each variable. ASKQ was a dichotomous binary variable with yes/no responses. The SWADS scale was a 27 item, 7-point Likert scale of attitudes, with higher numbers indicating greater agreement on statements, with a range of 27 (for strongly disagree to all statements) to 189 (for strongly agree with all statements) in responses, ( $M = 5.53$ ,  $SD = .77$ ). The CDP was a 20-item frequency composite scale with the range of 0 for no contact to 100 for contact that occurred very often ( $M = 2.53$ ,  $SD = .74$ ). The Terry's Desirability Survey was a 10-item, 5-point Likert Scale with a range of 1 (strongly disagree) to 5 (strongly agree) statements; thus, producing a possible range of 10-50 on the total scale ( $M = 3.09$ ,  $SD = .61$ ).

The data for this sample (See Table 2) showed that except for the ASKQ, the assumption of normality was met according to George and Malley's (2010) criteria (skewness range of  $-2 - 2$  and kurtosis range  $-2 - 2$ ). Histograms were also visually inspected for normality. Since the ASKQ was a dichotomous variable (yes/no responses) normality is not important. The lack of

normality in the ASKQ stigma subscale suggests that social workers in this sample hold positive attitudes about those with ASD, as almost none endorsed stigmatizing attitudes.

To address the assumption of linear regression, several methods were used. First, to get a reasonable estimate of least squares regression equation in the population, a probability sample, in which every master's trained social workers had an equal probability of being chosen for the survey, would be ideal (Allison, 1999). However, the sample was non-probability because not every master's social worker had the opportunity to participate in the survey, only those with membership in the aforementioned organizations. Secondly, to check for the uncorrelated disturbances, least squares coefficients were used. Third, mean independence assumption, in which the independent variables are unrelated to the random disturbance, a thorough literature review of predictor variables and the selection of measurements that have good internal and external consistency reduces the possibility violating this assumption in the linear model (Allison, 1999). To check for multicollinearity the creation of scatterplots of the residuals (error) versus the predicted values was done (Casson and Farmer, 2014). Also, in the final model, examination of the Variance Inflation Factors (VIF) was performed. Generally, multicollinearity will impact the interpretations of the coefficients, which can become unreliable. VIF's above 10 are considered problematic (Myers, 1990). In this study, gender and the interaction of ASKQ/gender had high VIF's (390 and 389 respectively). However, since the final model had interaction terms, the disturbance is an expected consequence of interaction terms, and is not problematic in making predictions. To check for homoscedasticity, scatterplots in a correlation matrix were examined, and the degree of scattering around the regression line was roughly the same, indicating homoscedascity (Allison, 1999).



After data clean up, SWADS was centered, and interaction effects were examined. The ASKQ scales did not significantly add to the model, except as an interaction effect with gender. The predictors were all correlated with one another, and since ASKQ did not add much to the model, only the interaction effect was included in the final model. Likewise, the individual interactions between SWADS subscales and CDP were checked, and each interaction individually was significant when others not included in the regression.

In developing the final model residual versus fitted plots of the data were examined, and there was no pattern to the data that would indicate a lack of fit (See figure 2). The Normal Q-Q plot, comparing the ordered standardized residuals to what one would expect if the distribution was normal was examined, and the data looked approximately normally distributed (See Figure 3). Similar results were obtained by examining standardized residuals on the fitted values, and with the residuals versus leverage plots, because there were no high leverage points, the model was deemed appropriate for regression analysis (See figure 4).

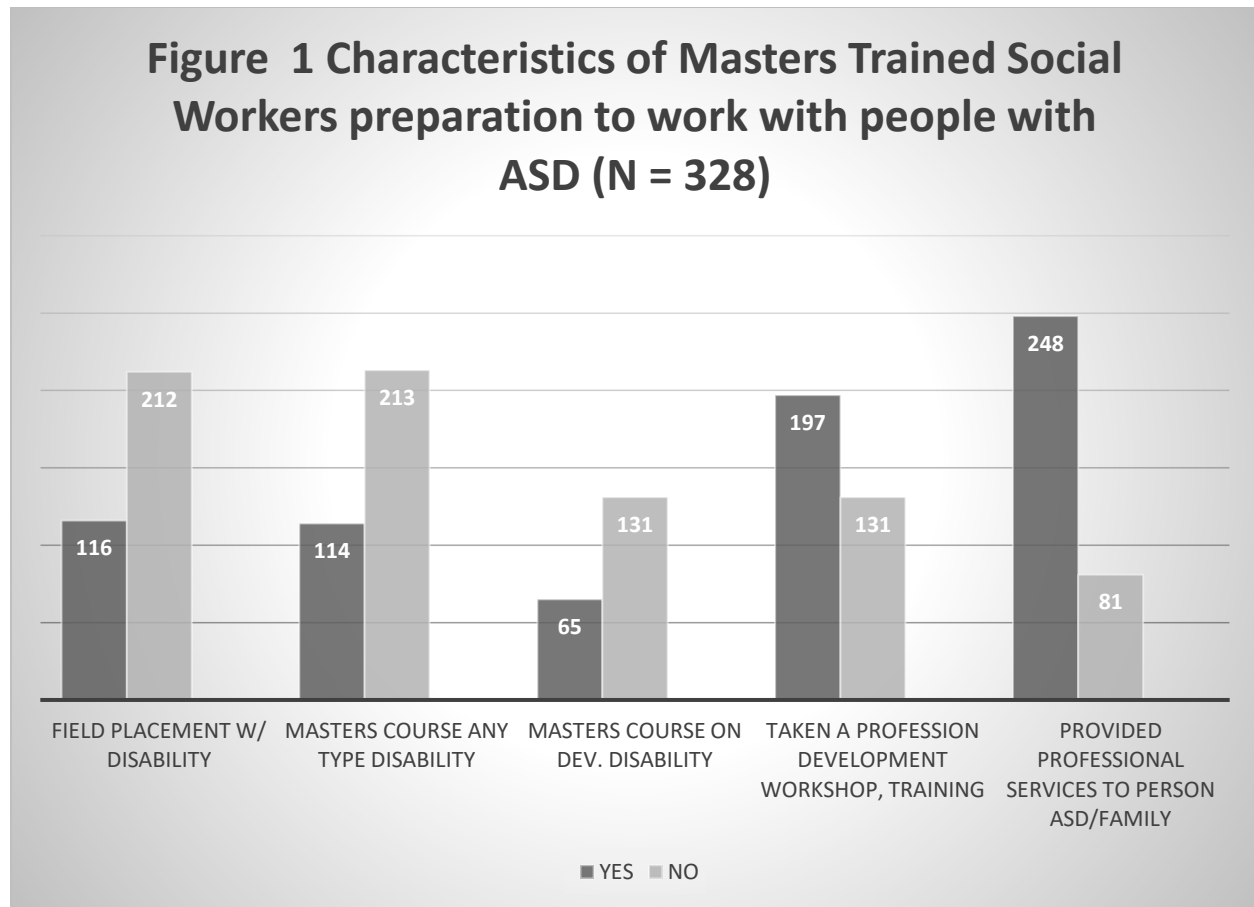
A standard multiple regression analysis was performed between the dependent variable (Terry's Desirability Survey) and the independent variables (ASKQ/gender, CPD, SWADS cognitions, feelings, CPD interaction effects cognitions/feelings). Analysis was performed using SPSS Regression.

## **Results**

Several items within the survey queried about each respondent's preparation in their master's training, subsequent training, and if they had ever provided professional services to a person with autism. (See Figure 1). This is interesting to note because 248 out of 328 respondents (76%) reported having provided professional services to a person with ASD or a family member, yet most had not taken graduate level coursework, nor had a field placement for

with this specific population. Such a finding runs counter to the NASW's Code of Ethics, which stipulates competent, comprehensive training for individuals working with client populations and mandates social workers provide only those services within their area of expertise....and social workers should only accept responsibilities and employment that match their level of competence (Laws et al, 2010, NASW Code of Ethics, 2017). However, supervision of social work practice as well as professional development has always been prevalent, and is needed for state licensure, so it appears most practicing social workers ( $n= 197$ ) use those avenues to increase their knowledge and practice. Still, as a profession, given the burgeoning research base regarding autism spectrum disorders, the academy needs to develop at least a foundational curriculum to address the unique needs and concerns of this group.

Some interesting results were found on the Autism Stigma and Knowledge Questionnaire. First, evidence of a strength-based perspective in the sample was found by all but one respondent ( $n = 281$ ) who reported "no" to the statement: Autism is due to cold, rejecting parents. Similarly, only five respondents endorsed "yes" to the statement: Autism is caused by God or a supreme being ( $n=280$ ) while 275 did not agree with the statement. Nearly all of the respondents ( $n = 283$ ) had heard of autism, and all but one knew that children with autism have sensory reactions ( $n = 282$ ). Most people (278) correctly knew that autism affects people of all races and ethnicities, while only three answered incorrectly ( $n = 281$ ).



There were some inaccuracies and myths represented by incorrect answers from this sample. On the understanding of most children with autism may not look at things when you point to them, 126 reported “no” and 151 reported “yes” ( $n = 277$ ), indicating a lack of knowledge about joint attention which is part of the DSM5 diagnostic criteria (i.e. reduced sharing of interests, emotions or affect and reduced understanding in use of gestures) (American Psychiatric Association, 2013). On the understanding that vaccinations cause autism, 269 correctly answered “no” but 12 respondents ( $n = 281$ ) incorrectly believe in a causal link. There was some confusion about the idea that there is no medical test to diagnose autism as 94 ( $n = 280$ ) believed that there was such a test, while 185 correctly agreed that there was not; rather ASD is diagnosed on behaviors. The age of diagnosis appeared to cause some confusion among participants as 37 people believed it was not possible to diagnose the condition by 18 months,

while 243 correctly identified that it was possible ( $n = 235$ ). There seems to be a perception that people with autism are aggressive and hyperactive as 175 disagreed with this statement, but 101 believed they are aggressive ( $n = 276$ ). Lastly, there was some confusion about autism as a brain-based disorder: 227 correctly identified that it was, while 54 did not ( $n = 281$ ).

The descriptive statistics (See Table 1) show mostly positive attitudes towards persons with autism, while overall positive cognitions were strong ( $M=5.70$ , scale of 1-7). The training factor of the Terry Desirability Survey showed training, ( $M= 2.35$ , on a scale of 1-5), was relatively low, while the interest factor ( $M= 3.56$ ) was higher, a finding consistent with the thesis of this dissertation. This finding showed that social workers are unprepared for work with people with autism, and even if they desire to work in that field, their training has left them unprepared.

**TABLE 1: Descriptive Statistics  $N=281$**

<b>Variable</b>	<b><i>M</i></b>	<b><i>SD</i></b>	<b>Skewness</b>	<b>Kurtosis</b>
<b>Scale/Subscale</b>				
<b>ASKQ composite</b>	.91	.04	-.64	.03
ASKQ diagnosis	.87	.09	-.08	3.67
ASKQ etiology	0.9	.06	-.06	3.20
ASKQ stigma	0.03	.06	2.10	6.83
ASKQ treatment	0.94	.74	-1.13	4.76
<b>CPD composite</b>	2.53	.61	.13	-.47
<b>Terry Desirability Survey Composite</b>	3.08	.60	.29	-.22
TDS interest	3.56	.85	.00	2.96
TDS training	2.36	.77	.57	2.90
<b>SWADS composite</b>	5.53	.73	-.15	-.68
SWADS cognitions	5.70	.96	-.43	-.42
SWADS feelings	5.49	.95	-.35	-.60
SWADS practice	5.40	.77	-.25	-.41

A correlation matrix (See Table 2) revealed low correlations among the variables, but the subscale of the TDS had high correlations with the composite scale, which would be expected in

that the composite scale is comprised of the subscales. Also, there were moderate positive correlations on the CDP with the other variables, and moderately high correlations with SWADS and CDP and the TDS overall scale and the interest subscale.

This showed the independent variables had minimal correlation with one another, and so had minimal multicollinearity. In this study, correlations between the predictors fell in the low range. Higher collinearity can create unreliable estimates of the coefficients of the variables that are collinear (Allison, 1999). In this study, gender and the interaction of ASKQ/gender had high VIF's (390 and 389 respectively). To minimize the effect of the unreliability of the coefficients, interaction terms were added to the model (ASKQ and gender) and some of the subscales were centered (SWADs and cognitions, SWADS and feelings, Contact and SWAD/ cognitions, Contact and SWAD/feelings). Multicollinearity will impact the interpretation of the coefficients but the specific values of the coefficients of the participating terms are less relevant.

In developing the final model, residual versus fitted plots of the data were examined, and there was no pattern to the data that would indicate a lack of fit (See Figure 3).

The Normal Q-Q plot, comparing the ordered standardized residuals to what one would expect if the distribution was normal was examined, and the data looked approximately normally distributed (See Figure 4).

Similar results were obtained by examining standardized residuals on the fitted values, and with the residuals versus leverage plots, because there were no high leverage points, the model was deemed appropriate for regression analysis (See Figure 5). The residuals are evenly dispersed throughout the graph, which indicates variation is constant. In looking at the residuals versus leverage plot there are no excessively high leverage points (See Figure 6). Cook's distance, a test for problematic outliers in the data that would affect the regression model, was

checked. Values greater than one have suggested concern (Cook and Weisberg, 1982), but this data had no problematic cases. Further, there was no evidence of homoscedasticity, which would violate assumptions for regression. Because each of the variables did add some explanation to the regression analysis, each was included.

Regression analysis revealed that CDP, contact with people with autism is the greatest predictor in the model. For every one-unit increase in the CDP, there was an increase in desirability to work with people with autism by 0.22, which was significant,  $p < .001$ . The interaction effect between the ASKQ and gender (male) similarly predicted the desire to work with people with ASD as for every one-unit increase in ASKQ/gender interaction variable, being male reduced the desire to work with people with ASD by -2.48, at  $p < .05$ . For the Social Worker's Attitude Towards Disability subscale of cognitions, for every-one unit increase in cognitions, there was decrease by 0.05 in the Terry Desirability Survey, significant at  $p < .01$ . This is somewhat perplexing since usually more knowledge points to a greater level of comfortability with those with disabilities.

For the SWADS feeling subscale, for every-one unit increase in feelings, there was a corresponding increase in the Terry Desirability Survey by 0.09,  $p < .05$ . This demonstrates that more positive feelings towards people with autism does predict a desire to work with them. There were slight interaction effects for both CDP/cognitions and CDP/feelings such that an increase in those predictors increased the scores on the Terry Desirability Survey by .05 ( $p < .01$ ) and .08 ( $p < .05$ ) respectively.

Overall, the model significantly predicted the desire to work with people with autism  $F(6, 272) = 36.3$ ,  $p < .0001$ ,  $R^2 = 0.51$ , Adjusted  $R^2 = 0.50$ . As Table 3 displays the standardized

and unstandardized regression coefficients (B), the intercept, standard error, standardized regression coefficients ( $\beta$ ) for each variable and p value.

**Table 3 Regression Non-Standardized and Standardized Coefficients**

<b>Variable</b>	<b>b<sub>1</sub></b>	<b><math>\beta</math></b>	<b>SE</b>	<b>t value</b>	<b>p value</b>
(Intercept)	3.28	-0.08	0.89	3.56	>.001
Gender (male)	2.45	0.067	1.39	1.76	>.05
ASKQ	-1.11	0.083	0.62	-1.73	>.05
CDP	0.22	0.274	0.04	5.25	<.001
SWADS cognition	-0.05	0.095	0.15	-0.39	>.01
SWADS feelings	0.09	0.467	0.11	0.84	>.01
CDP/cognitions	0.05	-0.199	0.06	0.90	>.01
CDP/feelings	0.08	0.048	0.04	1.80	>.05
ASKQ/Gender	-2.64	0.093	1.54	-1.71	<.05

The regression analysis suggests that, as a sample, these social workers reported Contact with Disabled People (with autism) added the largest explanatory power in the dependent variable Terry's Desirability Survey. This is consistent with prior empirical studies (Stachura & Garven, 2007, Moyle, Iacono & Liddell, 2010, Dillenberger, Jordan, McKerr, Devine, Keenan, 2013) regarding people with disabilities. . The variables most predictive of a positive desirability to work with people with ASD included contact, (CDP) and the interaction effect of knowledge and gender (ASKQ/Gender). While the composite ASKQ did not add much in the variance of the Terry's Desirability Survey , the interaction effect between ASKQ and gender (male) was negatively associated with social worker's desirability, and this is consistent with prior research as well, suggesting that females are more amenable to working with people with autism.

This study's hypothesis that greater contact with people with autism, being a female, and positive cognitions and feelings about people with ASD would increase the desirability to work with them, is supported. It was surprising that knowledge alone did not add to the desirability because it is through knowledge that accurate information is obtained, and old stereotypes and myths are squelched. As outlined above, there are still misunderstandings about the etiology,

diagnosis, and characteristics of autism, even among experienced social work practitioners. The greatest predictor contact with people with ASD is not surprising, but it points to a critical need to address cultural competency among social work students during their preparation. Increasing the contact with people with autism amongst students is also important because two variables, cognitions and feelings towards people with autism can theoretically be improved by having more contact with people with ASD. In this way, there is an additive effect of positive contact with people with ASD reflected in this data.

### **Discussion**

As expected, most master's trained social workers in this sample were not well prepared for practice with people with disabilities as most did not have field placements, courses on disabilities nor a course specific to developmental disabilities. Perhaps the sample were older social workers who were trained in a time that autism had just been included in the DSM III. Therefore, it may reflect more about the sample and may be less generalizable to more recent graduates, particularly those learning the new DSM5.

A positive finding was that most social workers from this sample held positive attitudes towards people with ASD, which is consistent with findings from Haney and Cullen (2018). Prior studies, including a qualitative study on female students' attitudes towards people with developmental disabilities found stigma emerged as a common theme, which respondents attributed to low levels of professional knowledge and lack of educational opportunities related to ASDs. As compared to respondents in other disciplines, social work students were more likely to believe that the benefits of working with individuals with ASDs were limited, but the experience (of working with them) provided opportunities for personal and professional development" (Werner, 2011, p.134-135).



Perhaps because Werner's study was done in 2011, the more positive attitudes found in this research could be an artifact of better general awareness of ASD that is more prevalent today. Certainly, the change in the DSM5 in 2014, which broadened the diagnostic criteria for ASD, lends credence to this notion as those with higher functioning ASD were placed alongside those with lower functioning in the "spectrum" of ASD. Other studies have found that it is the behaviors of people with ASD, rather than the label itself that influence stigmatizing attitudes (Butler and Gillis, 2010). However, other scholars have found that even with increased knowledge and understanding of autism in society, attitudes were resistant to change (White, Hillier, Frye & Makrez, 2016).

Another significant finding is that most master's trained social workers reported relying on ongoing professional trainings to become more competent. This is no surprise as most practitioners will do so to maintain licensure. What was more surprising was that most social workers from the sample had provided professional services to a person with ASD or their family regardless of practice area, even though presumably their master's program did not prepare them for serving this population. As Preece and Jordan discovered, "parents of children with ASD reported that social workers did not understand the nature of autism, that they misjudged or underestimated the needs of these children and their families, and that they lack the skills to work with them" (2007, p. 926). It appears that social workers may overestimate their competency when working with children with ASD, and presumably adults as well.

Consistent with other literature, contact with people with autism was a significant predictor of one's desirability to work with them. It may be that people fear what they don't know or understand, and so increasing contact boosts understanding and competence simultaneously. Recently, the media has incorrectly portrayed people with ASD as violent, and

this could add to the reticence of practicing social workers. Recently, the media has incorrectly portrayed people with ASD as violent, and this could add to the reticence of practicing social workers. For instance, Brewer, Zoanetti & Young, (2017) found in their sample of college students which found “media-fueled links between crime and ASD could have widespread unintended negative consequences” (p. 120). A two-pronged approach of better media imagery, (The Good Doctor and Julia on Sesame Street) and increasing integration in the community, which would allow for more contact for everyone with people with ASD are good ideas, particularly since inclusion simultaneously benefits those with ASD.

### **Strengths and Limitations**

Although this study was the first to use a national sample of social workers to address this question, it is limited in several ways. First, the scope of this study is just masters trained social workers and so results cannot be generalized to other professions. The convenience, non-probability sampling frame suggests caution in interpreting the results beyond the specific demographics captured with the sample. Each organization randomly selected individuals from a larger set of master’s trained social workers, so internal and external validity are addressed with this randomization.

Secondly, the online format of the survey drawn from two professional organizations is biased in that only those social workers who had professional memberships within the organizations were surveyed, and further, only if they had valid email addresses. The population sample is significantly larger than social workers with these professional affiliations, so caution should be used in generalizing the findings. It is possible that those without professional memberships may be entirely different than those who are members. In addition to the selection issues of professional membership and internet access, which is suggestive of higher levels of

education and computer literacy, like other survey research, there may be a selection bias in the participants who actually took the survey. Comley (2000) identified relationship with the website and respondent interest as important factors that affect response rates. It is likely that those with an interest in autism were more likely to complete the survey, and thus the actual sample may represent those with a personal relationship with someone with ASD, which, although good for purposes of power, may skew the results more positively towards their desirability. Another limitation to this study is that use of mean imputation (single) to substitute missing data when the missing data is not completely random could result in bias (Malhotra, 1987).

Threats to validity and reliability inherent in internet-based surveying, like lack of internet or server capabilities or restrictions by some respondents of their email for non-work-related tasks may have been present (Dillman, Smyth and Christian, 2009). Additionally, people's ability to use the internet varies significantly, so perhaps those who are less comfortable with navigating the survey ended their participation early. (Dillman, Smyth and Christian, 2009).

Secondly, the response rate was exceptionally low, with NASW's survey completion rate of 0.69% and NACSW's return rate of 15% so the findings are preliminary at best. Attempting generalizations from low response rates can result in non-response errors (Umbach, 2005), or non-representativeness of the population (Granello & Wheaton, 2004). Further research using larger sample sizes to replicate these findings would lend support to these findings. Finally, survey-based research is subject to acquiescence and other threats to validity. "Longer surveys can affect data reliability if respondents lose concentration and interest before completing the survey" (Lefever & Matthíasdóttir, 2006, p. 579). Since the survey was rather long, perhaps respondents tired of the task, and answered perfunctorily, which would add to the error and possibly skew the results.

Another limitation is that demographic variables, such as race, income, age of respondents, and years of practice experience may have added additional information to the analysis; however, they were not included due to length of the survey.

The Terry Desirability Survey is not a standard scale that has undergone the rigorous tests with regards to measurement and psychometrics. Although factor analyzed to be adequate for this study, the development and use of the Terry Desirability Survey , which had only 10 items, could be strengthened for greater robustness.

### **Implications for social work education**

Before discussing social work education specifically, it is important to note that higher education institutions have an important role to play in encouraging students with ASD. For example, resources should be put into place to provide appropriate academic accommodations, but also planning for campus wide acceptance and opportunities for social integration and more quality contact between students with and without disabilities (Hurewitz and Berger 2008).

Given the results of this analysis there are implications for social work education, practice and future research. In social work education, Ogden, McCallister and Neely-Barnes recently found that although social workers articulate that knowledge of the needs of persons with disabilities and their support systems are important, “much of disability content follows the medical model, and denies the oppressive value system of *ableism*...that contributes to exclusion and ostracism of people with disabilities (2017, pp. 361-362).

Central to the argument of social work education and practice with people with disabilities is the philosophical orientation that one holds. Disability studies focus on the social exclusion of people as a consequence of impairment and the social and political changes that are necessary to create an inclusive society (Morgan, 2012, Oliver M. and Barnes, C. 2012).

Rothman (2010) and others argue that social workers need both the medical and social model of disabilities to adequately serve clients: the medical model is the gateway to justify access to services, while the social model advocates for greater access of individuals in society. Therefore, combining the two models, a person-in-environment perspective is a more reasonable tactic given today's health care systems and governmental policies. The medical model provides the doorway to services, but once there, more strength-based models, such as social disability and neurodiversity can prevail.

Nearly 48 years have passed since the deinstitutionalization movement in this country, yet people with developmental disabilities are not fully integrated into society. Given that the results of this study support the contact theory, which was a large predictor of desire to work with a person with ASD, it is no wonder social workers feel less enthusiastic about working with people with ASD. Despite federal civil rights protection, full inclusion in society is unrealized for people with developmental disabilities.

The need for content in the social work curriculum has been well documented in the literature (Gilson & Depoy, 2002; Mackelprang, 2010, Werner, 2012), and the insufficient knowledge base has translated into poor services and frustration on the part of client's families (Wilkins, 2015). Social work content was found to be focused more on physical disability, lacking a strength-based perspective, and is shallower than other disciplines, particularly as it relates to intersectionality (Ogden, McCallister, & Neely-Barnes, 2017). CSWE's Council on Disability and Persons with Disabilities is well positioned to answer the call to work on solutions to the lack of disability focused curricular materials. Materials that emphasize a strength-based model of practice, such as neurodiversity does with the autism community, would move social work towards its vision of social justice and empowerment (Gourdine & Sanders, 2002; May and

Applewhite, 2006; Shankar, Barolow & Khalema, 2011). By developing curriculum and practice resources, social work education could effectively improve the workforce and the lives of millions of people with ASD and their families simultaneously.

As the results of this study suggest, social work education should be intentional to prepare for greater contact with those with disabilities of all types, including those with ASD. Use of volunteering in disability related programs, attending community events, and accessing speakers with autism from the community for classroom presentation would help provide inroads for such contact. Particularly in an applied field such as social work, greater contact provides more comfortability, understanding, and better cultural competency among all marginalized groups, including those with ASD.

### **Implications for social work practice**

Working with a person with ASD now requires a new cultural competency: neurodiversity. Understanding that people with ASD have fundamentally neurologically differently wired brains, with heightened perceptual abilities and increased systematizing systems, practice with this population requires changes in communication, and a strength-based outlook. Adoption of this new conceptual framework would help students understand ASD from a strength-based perspective, rather than just focused on the deficits. In addition to developing curriculum on ASD, that highlights the strengths of those with autism, providing opportunities for greater contact through guest speakers, special events in the community, or field placements would help develop the social work skills needed for practice in a supervised setting.

### **Implications for future research**

In the U.S. autism research, spurred on by organizations like Autism Speaks, has primarily focused on genetic and neurological research, “while the amount of research funding

dedicated to improving the immediate circumstances in which autistic people find themselves remained very low, with few studies being funded to understand and promote family functioning and services—a pattern that has been heavily criticized by some members of the autism community” (Milton and Bracher, 2013; Pelicano, Ne’Eman and Stears, 2011; Pelicano, Dinsmore and Charman, 2014, p. 757). Autism research has been highly imbalanced in the U.S., with most studies focusing on young children and genetic or biological markers for risk of ASD. Pelicano, Dinsmore and Charman found:

a general consensus that future priorities for autism research should lie in those areas that make a difference to people’s day-to-day lives. There needs to be greater involvement of the autism community both in priority setting and in research more broadly to ensure that resources reach where they are most needed and can make the most impact (2014, p. 756).

What is most needed is a strength-based approach to researching about ASD. Toward this end, participatory based research would work well with higher functioning individuals and organizations, particularly adults. This is consistent with what Frazer, Dawson, Murray, Shih, Snyder-Sachs & Geiger (2018) recently found in their survey research; “people with autism want to be included in research, science priority development and funding processes” (p. 3969). For those with fewer abilities, case management and support would work well, provided the individual is empowered as much as possible toward their own goals. Within the autism community, teaching self-advocacy would be an essential part of the work that a social worker could support.

## **Conclusion**

As this paper has attempted to demonstrate, social work education has not developed curriculum and competencies tied to people with disabilities, let alone the specific disability of autism. With the growing prevalence of ASD and the burgeoning research base, it is an appropriate time to develop curricular materials that would add to the cultural competency of social work practice. This research has shown that contact with people with ASD is an important factor that can increase cultural competency and downplay the medical model of social work practice, which dominates in the academy. This could easily be accomplished by having autism awareness events on campus, getting guest speakers with ASD to present to social work students, and allowing classroom credit for volunteering in some capacity with people with ASD.

Social work practice with people with ASD is an outgrowth of the values of empowerment, social justice, and human dignity for all people. Social workers are trained to have a broad, multiple perspective approach to working with people across a wide range of systems, and, given the complex nature of ASD, are well suited to be able to practice with people with autism and their families. It is time to help prepare the workforce for social work practice with ASD.



Neurodiversity: The New Cultural Competency in Social Work Education

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### **Abstract**

Even though social work is founded on social justice ethics, practice with persons with disabilities, more specifically with autism spectrum disorder (ASD), has been sparse among course offerings in schools of social work. Often, disabilities are embedded within other coursework which shortchanges this population. This poster explores the historical advent of a new conceptual framework in disabilities, namely neurodiversity, that has arisen from the autism community. The fundamental notion is that rather than seeing autism as a deficit, dysfunction or even as a mental health disorder as it is currently classified in the DSM 5, it is regarded as a naturally occurring cognitive variation. Neurodiversity has far reaching implications for social work curriculum development, practice and policy and could be considered as a new cultural competency. Schools of social work will need to consider adding core curricular courses or expanding diversity curriculums to include the unique needs, perspectives, and strengths of those with ASD and their families. Neurodiversity is an ideal framework to do so.

*Keywords:* disability, neurodiversity, autism, social work education, social work practice, cultural competency

## Introduction

This e-Poster presentation was presented at the Council on Social Work Education's Annual Program Meeting on 11/11/2018 at 8:45am. in Orlando, Florida. This presentation was developed from a conceptual article and represents a partial fulfillment of the banded dissertation for the University of St. Thomas/St. Catherine's University DSW program.

**St. CATHERINE UNIVERSITY**

**NEURODIVERSITY: THE NEW CULTURAL COMPETENCY IN SOCIAL WORK EDUCATION**

Katie Terry, LISW-S – Doctoral Candidate – School of Social Work

**UNIVERSITY OF St.Thomas**

**Abstract**

Even though social work is founded on social justice ethics, practice with persons with disabilities, more specifically with autism spectrum disorder (ASD), has been sparse among course offerings in schools of social work. Often, disabilities are embedded within other coursework which shortchanges this population. This poster explores the historical advent of a new conceptual framework in disabilities, namely neurodiversity, that has arisen from the autism community. The fundamental notion is that rather than seeing autism as a deficit, dysfunction or even as a mental health disorder as it is currently classified in the DSM 5, it is regarded as a naturally occurring cognitive variation. Neurodiversity has far reaching implications for social work curriculum development, practice and policy and could be considered as a new cultural competency. Schools of social work will need to consider adding core curricular courses or expanding diversity curriculums to include the unique needs, perspectives, and strengths of those with ASD and their families.

Neurodiversity is an ideal framework to do so.

Please use the headings above to navigate through the different sections of the poster.

This ePoster is part of a banded dissertation product for the Doctor in Social Work Degree at the University of St. Thomas/St. Catherine University

**Figure 2** Poster Presentation Abstract. This is the abstract of the entire poster presentation.

The image shows a presentation slide for a video. At the top left is the St. Catherine University logo. The top center has a purple header with the title 'NEURODIVERSITY: THE NEW CULTURAL COMPETENCY IN SOCIAL WORK EDUCATION' and the author 'Katie Terry, LISW-S – Doctoral Candidate – School of Social Work'. The top right is the University of St. Thomas logo. On the left is a vertical navigation menu with items: Abstract, Video (highlighted in yellow), Perspectives, Origins, Outcomes, Drawbacks, Competency, Implications, Education, and References. Below the menu is a note: 'Please use the headings above to navigate through the different sections of the poster.' The main area is a video frame showing a woman with glasses and a green top. Overlaid on the video is the text 'Neurological differences like autism or ADHD'. In the top right corner of the video frame is a logo that says 'NOW THIS OPINIONS'.

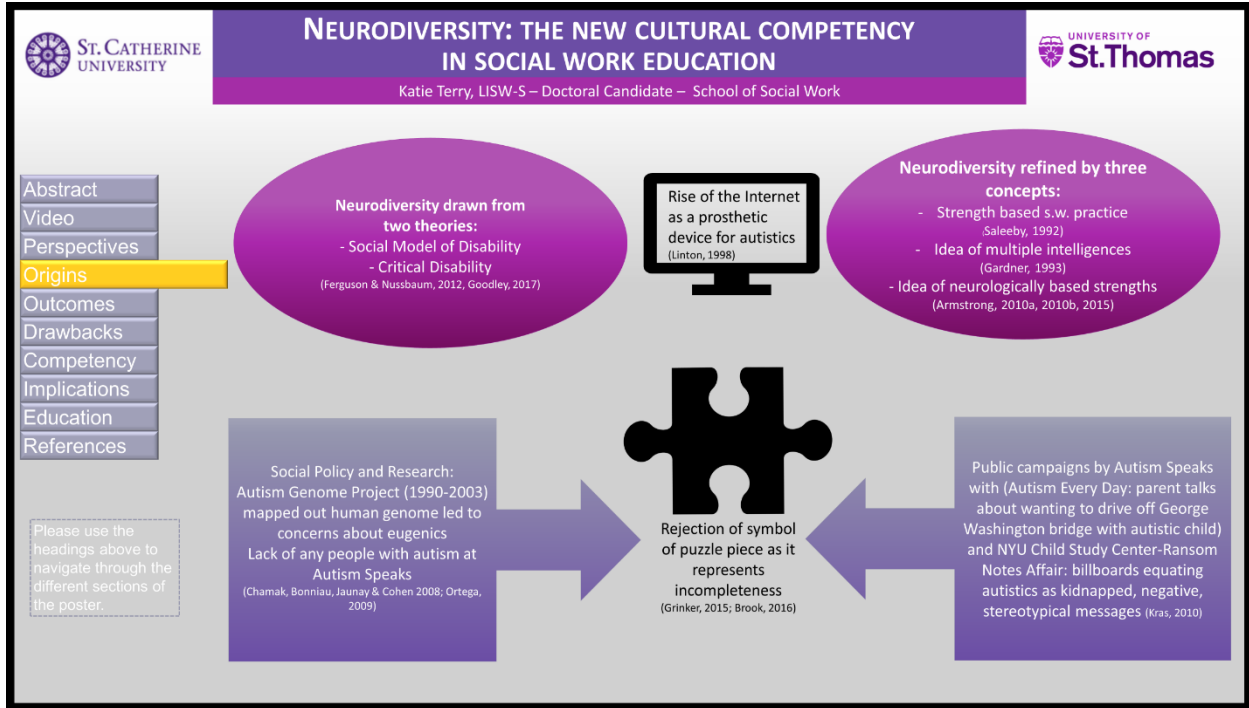
**Figure 3** Neurodiversity video slide. This is a 3-minute video on the concept of neurodiversity from Now This. The author, Devon McEachon describes the positive aspects of the neurological differences' characteristic of autism, and how in certain environments, persons with ASD may do better than neurotypical people. This is a strength-based perspective on ASD, and one consistent with changing the environment to better suit those with ASD as suggested by the ecological model.

The slide features a purple header with the title and author information. A navigation menu on the left includes 'Abstract', 'Video', 'Perspectives', 'Origins', 'Outcomes', 'Drawbacks', 'Competency', 'Implications', 'Education', and 'References'. The main content is a table comparing two perspectives on autism.


Neurodiversity Perspective	Popular Perspective
Autism as natural difference	Autism epidemic
Autism as specific strengths	Autism as behavioral disorder
Autism naturally in genetics	Cure, treatment of disorder
Acceptance of autistics	Treatment to make them more like neurotypicals
Social model of disability	Medical model disability
Autism as identity	Autism as incomplete (puzzle piece)
Led by people with autism	Research and treatment led by caregivers

Please use the headings above to navigate through the different sections of the poster.

**Figure 4** Comparative Perspectives slide. This slide compares the neurodiversity perspective with the current discourse on ASD. Neurodiversity arose partly as a response to parent-led and parent-funded advocacy organizations, with Autism Speaks being the largest. It contrasts the discourse that one sees regarding ASD and highlights the underlying philosophical differences between these views.




**Figure 5** Development of Neurodiversity slide. This slide depicts the conceptual and historical development of the neurodiversity movement. Theoretically, neurodiversity draws from the social model of disability (where society creates barriers for people with disabilities) and critical disability studies (the academic side of disability rights as a social movement). This slide also shows how the overreliance on genetic research, including the Autism Genome Project and the lack of representation in Autism Speaks of individuals with autism sparked the neurodiversity movement. Even the symbol of autism used by Autism Speaks and other organizations, the puzzle piece, has been studied and found to represent incompleteness, missing something, and a lack of fit.



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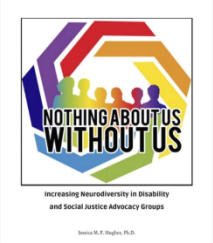
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- Abstract
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**Neurodiversity gave rise to:**

- “Nothing about us without us” (empowerment battle cry of those with autism)
- Internet being used as a prosthetic device: many blogs and websites used to give voice to those with autism who feel excluded



- Groups like Autism Society of America
- Autistic Self Advocacy Network
- GRASP- Global and Regional Asperger's Syndrome Project
- AWN – Autism Women's Network
- SABE – Self Advocates Becoming Empowered

**Figure 6** Neurodiversity Movement slide. This slide, following from the last, shows how neurodiversity has taken hold in our culture. The internet had a role to play in the development of many online forums. The battle cry of neurodiversity advocates “Nothing about us without us” is consistent with social work’s self-determination and empowerment practices. Examples of autistic-lead organizations are presented.

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### Neurodiversity Drawbacks

- Proport to speak for everyone with autism
- Better model for those higher functioning autism (Jaarsma and Wellin, 2012)
- Still face oppression and discrimination (Robertson, 2010)
- Offers no treatment but many struggle with self-injurious behaviors, compulsive rituals
- Comorbid disorders must be treated
- Caregivers and family members need to communicate with loved ones

**Figure 7** Drawbacks of Neurodiversity slide. This slide shows the limitations of the neurodiversity conceptual framework. The central drawback is that neurodiversity is a better model to explain people on the higher functioning end of Autism Spectrum Disorder, what had previously been known as Aspergers Disorder prior to the revision of the Diagnostic and Statistical Manual of Mental Disorders.



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Cultural Competency

- Knowledge of different conceptualizations of disability helps social workers think critically and discern their own frameworks and praxis.
- Medical model
- Social model of disabilities
- Cultural/anthropological conceptualizations
- Neurodiversity

**Figure 8** Cultural Competency with ASD. This slide offers a bridge in the presentation between the theoretical and historical advent of neurodiversity and the practical application in social work. Cultural competency includes both knowledge about different theories of disability and discernment of the framework and practice implications.

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**Implications for Cultural Competency**

- Meet at the same place & time
- Assume competency
- Don't expect eye contact
- Consider the sensory environment
- Speak slowly: think Mr. Rogers
- Use assistive technology (iPad) if needed
- Avoid figurative language & metaphors
- Breakdown questions into smaller parts
- Use receptive languages with pictures: "Point to the car."
- Ask "Am I understanding you?"

Please use the headings above to navigate through the different sections of the poster.

**Figure 9** Implications for cultural competency. This slide offers ten suggestions for working with people on the autism spectrum. The idea that social workers should assume competency is another strength-based practice because people with autism may have better receptive language than expressive. There are practical ways that the communication and language barriers can be overcome when working with people with ASD, and some are highlighted. Ideas for using their particular strengths and needs in social work practice are offered.

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**Implications for Social Work Education**

- Social workers are disinterested in working with intellectual disabilities (Burge, Druick, Caron, Oulelette-Kuntz & Paquette, 1999; Werner and Grayzman, 2011).
- One study found parents of children with ASD reported that social workers “did not understand the nature of autism, that they misjudged or underestimated the needs of these children and their families, and that they lack the skills to work with them” (Preece & Jordan, 2007, p. 926).
- Newer study found social workers have a strength based perspective of ASD, yet still have misunderstandings (Haney & Cullen, 2018)
- Rising prevalence of ASD and new generation of consumers that are knowledgeable about their education and civil rights
- CSWE report found 0.9% of MSW’s entering health care worked with people with developmental disabilities, 0.1% of all master’s social workers (Salsberg et al., 2018).

Please use the headings above to navigate through the different sections of the poster.

**Figure 10** Implications for social work education slide. This slide presents data on how social work education has dealt with people with autism. The research suggests that social workers are less interested in this client group compared to others, yet parents are reporting social workers underestimate the needs of their children, which is problematic. The future of social work education in which autism is included in the curriculum is important due to the rising numbers of people diagnosed with ASD and they represent a generation of consumers that are more aware of their civil rights.

**Table 2: Correlation Matrix of All Variables**

	ASKQ	ASKQ/ Stig	CDP	TDS	TDS/int	TDS/tr	SWAD	SWAD/ cog	SWAD/ feel	SWAD/ pr
<b>ASKQ</b>	1									
<b>ASKQ/stig</b>	-0.24	1								
<b>CDP</b>	0.21	-0.11	1							
<b>TDS</b>	0.00	-0.05	0.54	1						
<b>TDS/int</b>	0.00	-0.06	0.48	0.87	1					
<b>TDS/tr</b>	0.00	-0.03	0.46	0.86	0.52	1				
<b>SWAD</b>	0.12	-0.10	0.57	0.66	0.66	0.49	1			
<b>SWAD/cog</b>	0.12	-0.07	0.31	0.42	0.47	0.26	0.78	1		
<b>SWAD/feel</b>	0.12	-0.09	0.56	0.65	0.62	0.51	0.90	0.55	1	
<b>SWAD/pr</b>	0.07	-0.10	0.56	0.62	0.62	0.46	0.09	0.56	0.74	1

Figure 11 Histograms of All Variables

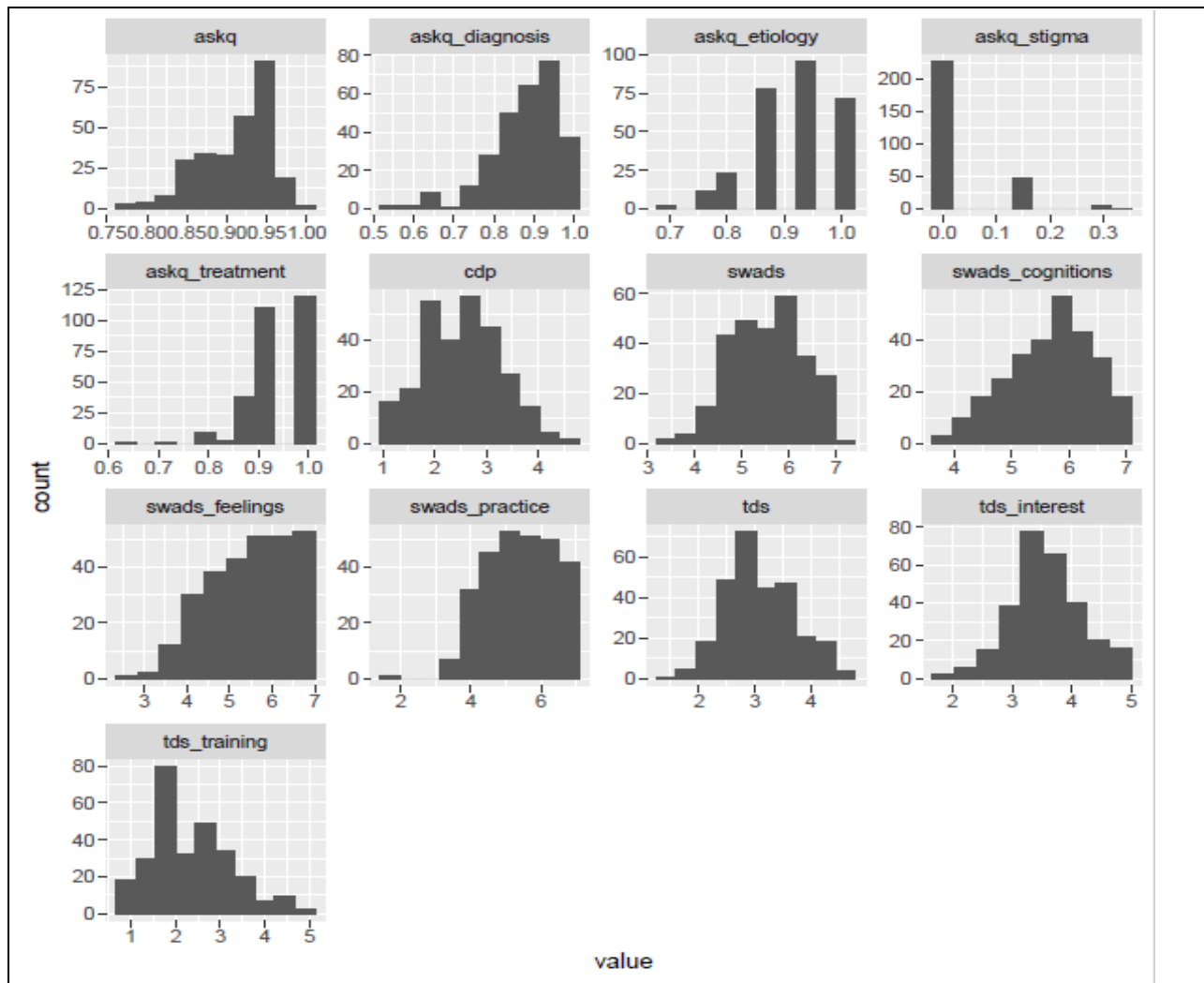


Figure 12: Residuals vs. Fitted

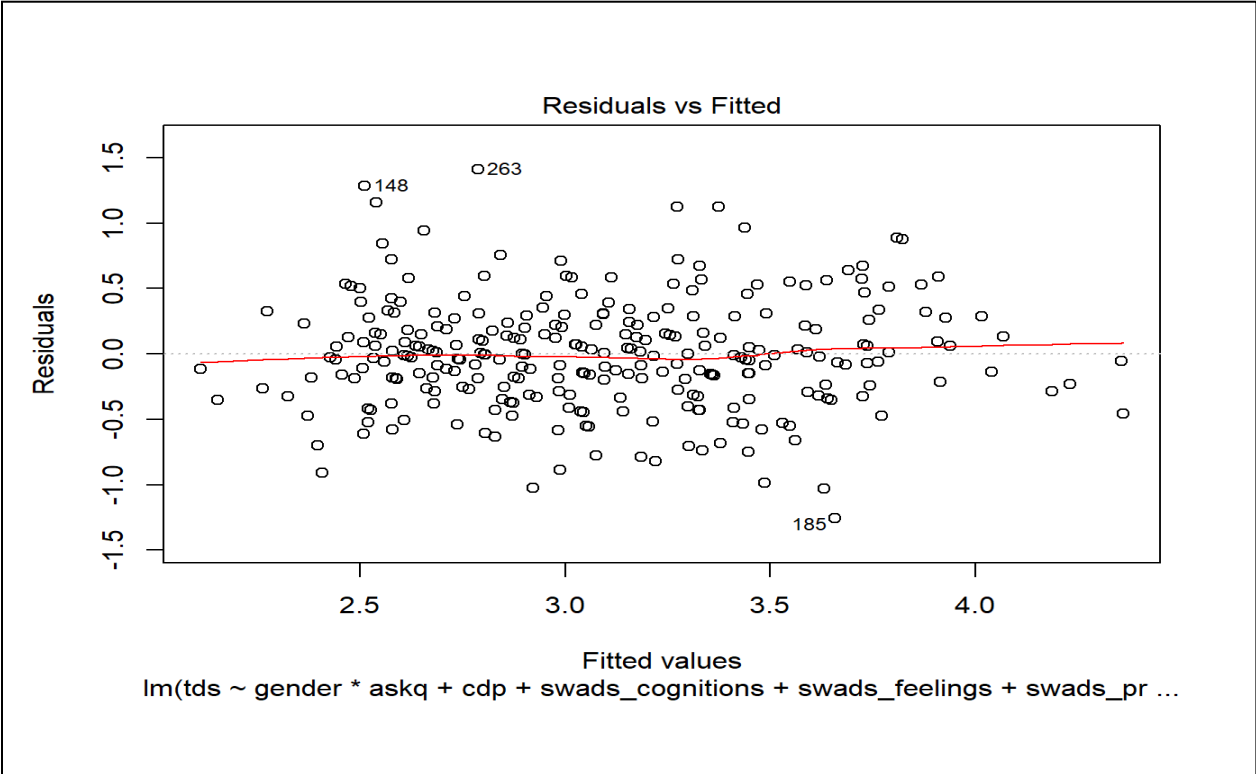


Figure 13: Normal Q-Q Plots

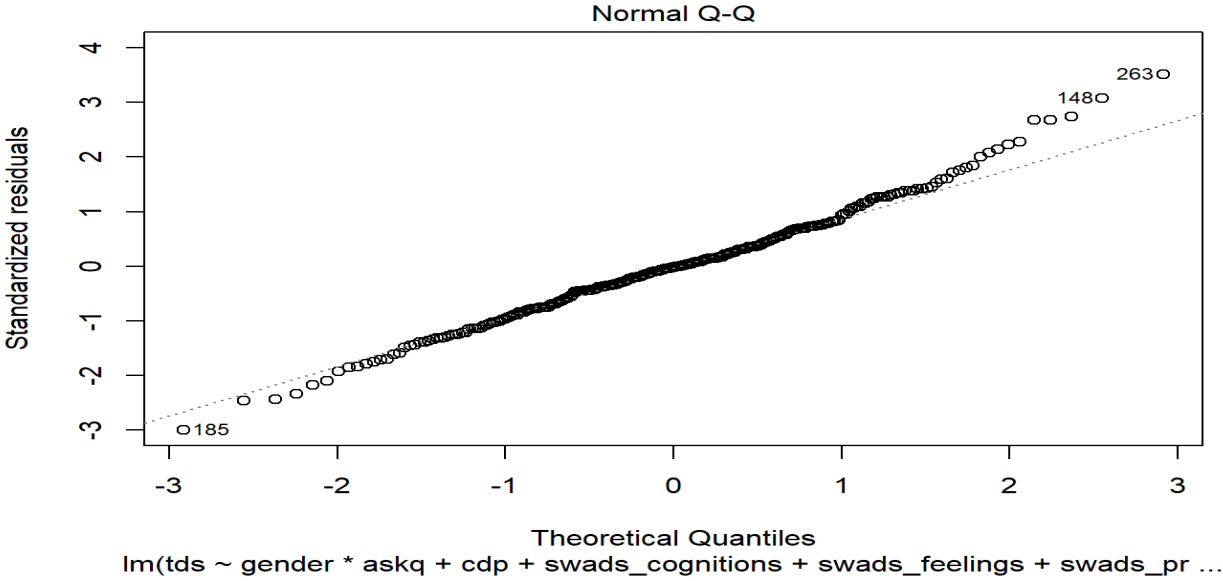
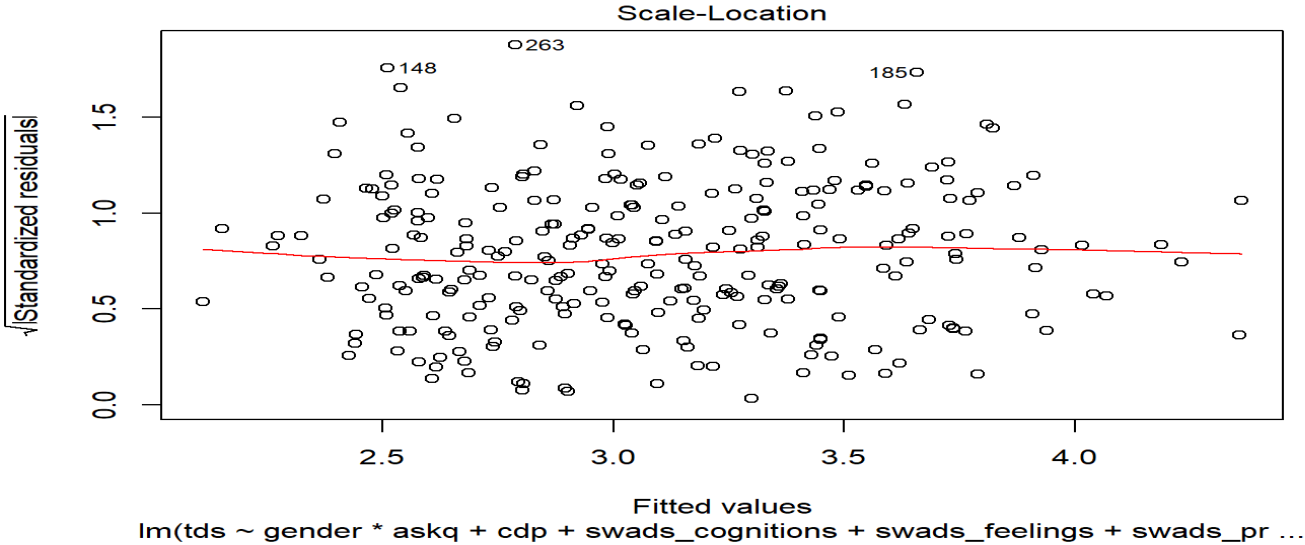


Figure 14: Standardized Residuals





**Figure 15: Standard versus Residuals and Cook's Distance**

