

THE IMPACT OF MEDICAL INSTRUCTORS' ATTITUDES TOWARDS PATIENTS WITH
DEVELOPMENTAL DISABILITIES ON UNDERGRADUATE MEDICAL STUDENTS IN
NORTHERN ONTARIO

by

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Abstract

The attitudes possessed by health care professionals are an important factor in patients with developmental disabilities' (DD) ability to access services, particularly in rural and remote regions, such as Northern Ontario. Despite the expressed need for greater education in medical school on DD, students and providers often report discomfort when working with these patients. This major paper aimed to answer the question: *What impact do instructors and preceptors have on medical students' attitudes towards patients with developmental disabilities?* Social Power Theory (French & Raven, 1959) was used to explore the themes in the literature. A total of 56 articles published between 1980 and 2019 were identified and reviewed for this analysis. Three main themes were identified in the literature including: (1) Barriers to accessing health care, including both providers' and students' knowledge and attitudes; (2) Gaps in the health care curricula and formal education; and (3) the power dynamic and culture of medical education. The results of this review indicate that there is a lack of formal education and few clinical opportunities for students to learn about DD. Patients with DD have expressed a desire to be included in medical education in a professional capacity as an educator; this position of power may provide them with an opportunity to improve students' knowledge while reducing potential biases. Although medical educators are experts in their field, they are often not formally trained as educators. The implications of this lack of formal training are that much of preceptors' teaching styles are left to their discretion, which may include negative teaching approaches such as "ritual humiliation".

Keywords: Medical students, medical preceptors, medical education, health care providers, developmental disabilities, Northern Ontario.

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Introduction

Attitudes held by medical professionals are an important determining factor in patients with developmental disabilities' (DD) ability to access health care services (McColl et al., 2008). For the purpose of this paper, an attitude will be defined as an established way of thinking or feeling towards a specific being that may be reflected in one's behaviours (Stangor, 2014). If health care practitioners possess negative attitudes towards patients with DD, these attitudes can result in unfavourable impacts on the quality of care that individuals with DD receive, while also limiting the availability of important services (Tervo, Palmer, & Redinius, 2004). A negative attitude may occur when a health care provider views a disability as an undesirable characteristic or as though it is not "normal", which may result in social exclusion, discrimination, and stereotyping an individual as incompetent or dependent, among other outcomes (Daley, Phipps, & Branscombe, 2018; Tervo et al., 2004). Negative attitudes, in turn, can lead to poorer health outcomes for patients with DD compared to the rest of the population, such as higher mortality rates (Sinai, Strydom, & Hassiotus, 2013). Researchers have previously demonstrated that despite patients with DD having a greater need for access to physicians, having a disability makes them 50% less likely to receive necessary care (McColl et al., 2008).

Physicians often report feelings of discomfort when working with patients with DD. For example, in one study, 21.3% of physicians reported feeling uncomfortable with their patients with DD (Aulagnier et al., 2005). These feelings of discomfort may be a reflection of physicians' insufficient training in regard to working with patients with disabilities during their medical education (McColl et al., 2008; Symons, McGuigan, & Akl, 2009). While the lack of training on DD is a recognized challenge in the literature, researchers have often failed to examine the impact instructors' attitudes may have on undergraduate medical students' attitudes towards DD

(Hogg, 2001; Michael & Richardson, 2008). There should be further consideration of these negative attitudes, as researchers have previously indicated that the knowledge, attitudes, and skills of preceptors may considerably influence those of their students (Sinai et al., 2013). Medical preceptors hold considerable power over the reward and punishment of their students' knowledge, performance, and access to clinical opportunities, indicating that they have a significant influence on their students' knowledge and clinical skill development (Shannon et al., 2009).

As health care providers have expressed feeling ill prepared to assess and provide treatment to patients with significant deficits, it is critical that the health care curriculum teaches both the appropriate skills and information, while also having a positive influence on attitudes (Boyd, 2016). These attitudes are likely in part due to the training and education that physicians have received while in their undergraduate medical education, and these attitudes will likely be passed on to their students (Werner & Stawski, 2012). Physicians in particular will be the focus of this literature review, also referred to using various terms, such as medical professionals, health care providers, among others. Poor attitudes may be perpetuated by care providers who are insufficiently trained and may result in diminished care for patients with DD (Werner & Stawski, 2012). A study published by Boyd (2016) suggested that attitudes will not be altered by emotion alone.

Developmental Disabilities

Developmental disabilities (DD) are defined as those present at birth or developing before the age of 18 years of age, and which impact a person's ability to learn that is permanent in nature (Developmental Services Ontario, 2018). These disabilities can range from mild to severe and affect approximately 0.6% of the Canadian adult population (Statistics Canada,

2012). The term DD is an umbrella term and may or may not include those with an intellectual disability (ID). The prevalence of DD varies depending on the region of interest, with rates found to be higher in Ontario at 0.78% (Sullivan et al., 2011). These prevalence rates translate to approximately 160,500 Canadians and 66,484 Ontarians living with a DD. Traditionally, the most commonly reported DDs include Cerebral Palsy, Down Syndrome, and Autism Spectrum Disorder (Statistics Canada, 2012). DDs have been found to be highest among individuals between the ages of 15 and 24 years at 1.2%. This number decreases with age, with those 65 years and older having a prevalence rate of DD of 0.4% (Statistics Canada, 2012).

Though these prevalence rates have previously been reported at a population level in Canada, the rates of diagnosis of both Fetal Alcohol Spectrum Disorder (FASD) and Autism Spectrum Disorder (ASD) alone account for greater than 0.6% (Cook et al., 2015; Government of Canada, 2018). FASD prevalence rates have previously been estimated at 1 in 100 Canadians, or 1% of the population (Cook et al., 2015); however, recent estimates of FASD prevalence indicate that the true prevalence may be as high as 4% in North America (Flannigan, Unsworth, & Harding, 2018; May et al., 2018). Meanwhile, ASD has been reported in approximately 1 in 66 Canadians, which translates to 1.5% of the population (Government of Canada, 2018). Down Syndrome in Canada is estimated at approximately 1 in 750 live births, or 0.13% (Statistics Canada, 2017). One study suggests that the prevalence of Cerebral Palsy in Canada lies around 0.21% (Oskoui, Coutino, Dykeman, Jetté, & Pringsheim, 2013). Additionally, Canadian estimates for Fragile X Syndrome have been estimated to be approximately 1 in 4000 in males and 1 in 8000 in females (Coppus, 2013). The prevalence of these disorders alone constitutes more than the estimated prevalence rate of DD in general, indicating there are likely discrepancies in the literature regarding these rates, as well as recognition of DD amongst health

care professionals. While the estimated prevalence of DD in general was identified by Statistics Canada (2012) as 0.6% of the Canadian population, the prevalence of ASD, FASD, Down Syndrome, Cerebral Palsy, and Fragile X Syndrome combined conservatively add up to approximately 2.86%.

Patients with DD often have a large range of health complications when compared to those without disabilities, meaning they often need more specialized care (Jansen, Krol, Groothoff, & Post, 2004). These complications include issues such as high blood pressure, diabetes, chronic pain, and cardiovascular disease (Havercamp et al., 2004). It has also been found that there are inadequate mental and oral health services available for individuals with DD, as well as cervical and testicular cancer screens (Ervin et al., 2014). These issues are further compounded by the insufficient research on health care challenges for individuals with DD (Ervin et al., 2014).

It has also been reported that 76% of people with DD take prescription medication once a week or more (Statistics Canada, 2012). Prescriptions of antipsychotic medications in patients with DD occurs frequently, often without the appropriate psychiatric diagnosis (Lunsky et al., 2018). Upwards of 30% of individuals that were prescribed an antipsychotic drug did not have a formal diagnosis (Lunsky et al., 2018). One of the most frequently reported types of assistance received by individuals with DD is with intense household chores, with approximately 49% of respondents indicating that they required help (Statistics Canada, 2012). On the other hand, 80% of people with DD indicated that they did not live alone, and that they received assistance with everyday activities from family members in their household. Of those that do live alone, 56% stated that they receive help every day from family members (Statistics Canada, 2012).

The History of Disability: Deinstitutionalization and Health Care

Historically, discrimination against people with disabilities has been well documented. In Canada, institutions for people with disabilities have been used since as early as 1876 (Brown & Radford, 2015). These institutions, which were originally called asylums, resulted in individuals with disabilities being separated from their families and communities. The establishment of institutions arose from the industrial revolution in the 18th and 19th centuries, where asylums were conceptualized to house those who were perceived to not flourish in this rapidly changing and growing society (Brown & Radford, 2015). Methods of educating those who were considered to be “feeble-minded” were developed in Paris at the Salpêtrière Hospital, which inspired hope that individuals with DD could be taught in ways that were previously thought impossible (Brown & Radford, 2015). This educational approach, consequently, was a significant rationale for the construction and use of asylums, as they could be used for specialized rehabilitation for those with DD. These were proposed to be communities which were intended to provide individuals with the opportunity to work, develop various skills, and provide social supports (Brown & Radford, 2015). Unfortunately, residents often spent their lives in these institutions after they were admitted, and there were frequent reports of inhumane treatment, such as using insulin to shock patients into comas, lobotomies, and use of electroconvulsive shock therapy (Braslow, 1994). Patients would often be verbally, emotionally, physically, and sexually abuse by staff and other residents (Braslow, 1994). Men and women were segregated in asylums and sexuality was typically not allowed, or was strongly discouraged (Brown & Radford, 2015).

It was also during this period of time that Charles Darwin published his book on evolution, *On the Origin of Species*, and his cousin Sir Arthur Galton coined the term eugenics

(Gelb, 2008). Darwin's theory suggested that individual members of a species are more likely to survive and reproduce when they are fit for their environment (Gelb, 2008). These more "fit" individuals and organisms would be naturally selected for and go on to procreate and pass on their desirable traits; meanwhile, the weak or "unfit" would eventually be removed (Gelb, 2008). While fossil records were yet to exist, Darwin believed that there were living examples of this transition of evolution in the form of people with intellectual disabilities (Gelb, 2008). This description viewed people with disabilities as the gap between "civilized people" and apes, and depicts them as less than human.

As a result of the eugenics movement, the rights to make health care decisions for themselves were taken away from individuals with DD, when in 1927, the Supreme Court of Canada ruled that the state had the authority to perform forced sterilization (Kempton & Kahn, 199). This practice continued until the 1970's in Canada, when it was eliminated and cited as a human rights violation (Krahn et al., 2015). Compared to the rest of the population, people in institutions had higher rates of health care needs that were not met, as well as higher rates of chronic diseases, mental health issues, and unhealthy lifestyle behaviours (Krahn et al., 2015). Overcrowding and poor resources meant that the care patients received was largely custodial in which their basic needs were met (Nehring & Lindsey, 2016). One study conducted by Kennedy (2002) in Ontario found that 80% of participants with DD who had previously been in an institution had the *Helicobacter pylori* infection, which can lead to peptic ulcers and gastric cancer when left untreated (Kennedy, 2002). Some institutions had one nurse for everyone 400 patients, which resulted in poor care for those living there (Nehring & Lindsey, 2016).

While asylums had many downfalls, the medical professionals that worked in these institutions had extensive experience and knowledge with individuals with DD and would have

been experts in their field (Brown & Radford, 2015). In many communities, there was a lack of education and supports available, and there was concern over the toll that caring for an individual with a DD took on families. In theory, placing these individuals in an asylum meant that they had constant access to professionals who were adequately trained to care for them, and this “burden” was no longer placed on families (Brown & Radford, 2015). During this time, disabilities were also increasingly viewed as a medical issue, which was yet another justification for the use of asylums (Brown & Radford, 2015). Asylums were re-branded as hospitals that were then more focused on health care which was provided by nurses, doctors, and other medical professionals (Brown & Radford, 2015).

By the 1960's and 1970's, advocates for change were lobbying for deinstitutionalization for people with DD to move home and live with their families (Krahn et al., 2015).

Deinstitutionalization occurs with the purpose of removing the restrictions that are placed on those with disabilities by improving the environments these individuals are surrounded by, such as living accommodations and the communities in which they live (Brown & Radford, 2015).

The reduction of environmental limitations would also allow for individuals with DD to be able to become part of their communities where they would still have access to the necessary services and supports that they required. Advocacy groups pushed for *normalization*, or the integration of people with DD into a “normal” environment and society with the same routines and housing as everyone else (Brown & Radford, 2015). The inclusion of people with DD into society meant the closing of institutions which led to the opening of Community Living Centres. By 1983, the Government of Ontario released a five-year plan for the closure of multiple institutions and included an expected 800 beds in community-based living (Brown & Radford, 2015). The final

three institutions in Ontario were closed in 2009, signaling the end of 130 years of oppression, abuse, and marginalization of people with disabilities (Brown & Radford, 2015).

As health care shifted from institutions to communities, new models of care delivery were implemented, and group homes were formed (Post, 2014). It has been demonstrated that the transition from institutions to community-based care can lead to improved quality of life, as well as standard of living (Turner, 2004; Young et al., 1998). Quality of life has been defined in health care in a variety of different ways, such as “The subjective evaluation of good and satisfactory character of life as a whole” or “The overall enjoyment of life” (Post, 2014, p. 171). In one study regarding DD, this particular definition of quality of life (QOL) was used:

Individual QOL is a multi-dimensional phenomenon composed of core domains that are influenced by personal characteristics and environmental variables. These core domains are the same for all people, although they may vary in relative value and importance. QOL domains are assessed on the basis of culturally sensitive indicators. (Morisse, Vandemaele, Claes, Claes, & Vandeveldel, 2013, p. 2).

In terms of increased QOL, individuals with DD in community living were found to use community leisure activities more than their institutionalized counterparts, which could be an important aspect of healthy living (Dagnan et al., 1998). Advances in the field surrounding conditions and treatments as well as therapy allowed for people with DD to live longer lives by the 1980's (Nehring & Lindsey, 2016). By the 1990's, managed care had begun, which had many advantages and disadvantages. Patient care now had case coordination, standards of care, and saved on cost because of the efficiency of services (Nehring & Lindsey, 2016). On the other hand, this transition was also marked by poor access to support and services, reduced quality of

patient care, and providers lacking expertise on DD (Nehring & Lindsey, 2016). These issues in health care for individuals with disabilities continue to persist in Canada today.

Comorbid Health Issues and Mortality Rates

The World Health Organization (WHO) defines health as a state of total mental, physical, and social well-being, not simply the absence of disease (WHO, 2018). WHO also states that achieving the highest standard of health is a fundamental right of every person. The *United Nations Convention on the Rights of Persons with Disabilities* recognizes that individuals with disabilities should have access to the same range, quality, and standard of free and affordable health care services that are available to others (The United Nations Treaty Collection, 2006). However, patients with disabilities remain 58 times more likely of dying before the age of 50 compared to those without a disability (Sinai et al., 2013). People with DD also have shorter life expectancies of 66.1 years, compared to the average of 81.7 years in the general population (Coppus, 2013; Statistics Canada, 2018). The fundamental right to access health care services can be impeded by the physical, social, and attitudinal barriers for patients with DD (McColl et al., 2008).

McColl et al. (2008) indicate that there are four areas in which patients with DD are likely to experience barriers in accessing care in primary health settings: finding a physician to treat them, obtaining appointments, physical access to medical facilities, and experiencing a reasonable standard of care. Physicians in Ontario have reported that patients with disabilities require more time than patients without disabilities, because of factors such as physical, cognitive, and communication difficulties, while their office may lack the specialized tools, equipment, or staff required to more effectively treat these patients (McColl et al., 2008; McMillan, Lee, Milligan, Hillier, & Bauman, 2016). Iacono, Bigby, Unsworth, Douglas, and

Fitzpatrick (2014) conducted a study and found that patients with DD have poor experiences when receiving health care likely because of institutional discrimination, neglect, and mismanagement. These factors and attitudes, therefore, may delay or prevent a patient's access to diagnosis and treatments (Iacono et al., 2014). Underreporting and inaccurate estimates of DD may be one of the contributing factors to the higher mortality rates in this population (Coppus, 2013).

People with DD experience barriers to care such as limited appointment times because of caretaker availability and transportation, financial barriers, inadequate communication with their physician or care provider, troubles when utilizing the health care system, negative attitudes, discrimination, and not receiving respect from others (Peterson-Besse et al., 2014). These individuals typically have difficulties acquiring services and providers with the appropriate specialized knowledge to treat disability-related health issues (Peterson-Besse et al., 2014). People with DD have been found to be one of the largest underserved populations with signs of health disparities compared to other groups (Drum et al., 2005). As disability is often assumed to be synonymous with illness, the notion of being healthy while also having a disability is considered to be a rather new concept (Drum et al., 2005). Proper quality medical care is a central aspect of good health, with primary care being crucial for those with DD, though patients with DD habitually report not having their health care needs met, and receive fewer services than the rest of the population (Drum et al., 2005). These patients have also been found to have a significantly greater requirement for access to physicians and health care services than the rest of the population (McColl et al., 2008; Ali et al., 2013).

The increase in mortality rates in this population are potentially preventable and are therefore not entirely contributable to their disability (Ervin et al., 2014). These mortalities are

sometimes because of insufficient health care that is delivered to patients by health care providers that have inadequate education and clinical experiences surrounding DD (Ervin et al., 2014). It should also be noted that there is an increased risk of injury in those with DD because of unintentional injury or violence (Krahn et al., 2015). These individuals are at a 1.5 times greater risk of being victims to violent, nonfatal crimes and have twice the likelihood of reporting having been raped or sexually assaulted compared to those without disabilities (Krahn et al., 2015). Women are at a higher risk of violence than men, while both men and women are in greater jeopardy of being subjected to violence with an intimate partner (Fogden et al., 2016). Researchers in one study indicated that 44% of perpetrators of violent acts against individuals with DD were acquainted with their victim through a disability service (Fogden et al., 2016).

Individuals with DD are also more likely to have comorbid health issues compared to those without disabilities (Sinai et al., 2013). Adults with DD have higher rates of comorbid mental health concerns such as depression, anxiety, schizophrenia, and bipolar disorder compared to the general population (Cooper et al., 2015). Additionally, adults with DD are seven times as likely to report not having adequate emotional support compared to adults without a DD. For example, Boyd, Diepstra, Elbard, Hamdani, & Lunsy (2018) found that access to mental health services for this population are also limited despite the increased risk of mental health disorders.

Additionally, not only are adults with DD found to be at a greater risk of living more sedentary lifestyles, they are also more likely to report that their health is fair or poor than those without disabilities (Havercamp et al., 2004). Nearly half of patients with Down Syndrome are diagnosed with a congenital heart condition, and are at a greater chance of developing Alzheimer's disease (Michael & Richardson, 2008). The limited access to appropriate mental

health and physical health services for this population produces a barrier that impedes full social inclusion and reduces access to suitable care (Boyd et al., 2018).

In regard to chronic diseases, Havercamp and colleagues (2004) have found that adults with DD were at a similar or greater risk of being diagnosed with four to five chronic conditions in comparison to the general population. A risk that also presented itself was the lack of use of breast and cervical cancer screens, which may also have significant negative consequences for the health of women with DD (Havercamp et al., 2004). While this population has a higher rate of chronic disease, as well as mental health issues, these patients also have a lower likelihood of receiving preventative care (Krahn et al., 2015).

People with disabilities are also more likely to face challenges with attaining proper care for a variety of physical health concerns. Oftentimes, sexual health in patients with DD is not addressed by physicians, as they assume that the patient is not sexually active because of their disability, which can lead to health consequences, such as cervical cancer. Their chances of being diagnosed with cardiovascular disease is also three to four times higher than the rest of the population (Krahn et al., 2015). These particular needs are often compounded by various other environmental factors, such as geographic location, which can further limit access to resources further (Bowen, 2001). Patients with DD have varying patterns of health care needs from others, and therefore require health care providers that are appropriately trained to treat this group (Michael & Richardson, 2008).

Rural and Northern Health

Northern Ontario is a central region of Canada that covers more than 800,000 km² and has a population density of approximately 1 person/km² (Hogenbirk et al., 2015). Just over half of residents in this area are grouped around five larger urban centers including Sudbury, North

Bay, Sault Ste Marie, Timmins, and Thunder Bay, with populations ranging from 43,000 to 161,000 people (Hogenbirk et al., 2015). Residents of Northern Ontario have been found to have more limited access to health services when compared to other regions in Ontario, and also have reduced use of medical services (Wenghofer, Timony, & Pong, 2011). Northern Ontario residents are also more likely to report a lower health status than other Ontarians, with that of Aboriginal and Francophone individuals being even worse (Hogenbirk et al., 2015).

Canadian researchers have also often shown that there are challenges in regard to equity concerning health care access, especially for certain locations and populations (Crooks & Schuurman, 2012). As a result, the distance and distribution of available health care can lead to a lack of services, which can prevent specific populations, particularly those who already struggle to receive adequate care, from accessing necessary resources (Bowen, 2001). The *Canada Health Act* lists accessibility of health care and services as one of the five principles that are a fundamental right of all Canadians (Bowen, 2001). Access to services may not necessarily be easily achieved in rural and remote locations, though, because of the vast geographic spread of these locations compared to urban centres (Crooks & Schuurman, 2012). A patient's ability to access primary health care has been found to have a positive impact on health outcomes, such as a positive correlation between number of physicians and life expectancy (Crooks & Schuurman, 2012).

Primary health care is also a more readily accessible form of care than specialists, especially in rural and remote northern locations (Crooks & Schuurman, 2012). As specialists are more often located in urban areas, these patients and their care providers must travel to receive services (Nicholson & Cooper, 2011). Individuals with DD in rural locations often lack access to specialized care and necessary supports, while health care providers may be limited because of

geographic location and training on disabilities, as well as willingness to deliver services to this population (Nicholson & Cooper, 2011). The impact of attitudes towards the care of individuals with DD may be a result of a cycle of few practitioners specializing in this area of care, in which case there are fewer training opportunities for students (Werner & Stawski, 2012).

Transportation to services is cited as one concern with accessing health care services for those with DD, while the service buildings in which services are located themselves frequently present physical barriers as well (Bowen, 2001; Davidsson & Södergård, 2016). The experience of traveling itself may cause great discomfort because of long times spent in a vehicle, or mobility when stopped for comfort breaks (Nicholson & Cooper, 2011). Financial constraints may also limit rural residents' access to services, as the cost to the individual may be greater because of the travel time, which can impact work and family life (Nicholson & Cooper, 2011). Individuals with DD who live in more rural areas often have to be heavily dependent on their family and friends for transportation, financial support, and adjusting their living environments to suit their needs (Davidsson & Södergård, 2016). This social support in rural communities appears to be an important aspect of patients accessing care. Though the Canadian Human Rights Legislation does include a generalized commitment to the provision of accessible services for individuals with DD, there is no set system to enforce these rulings (Bowen, 2001). As a result, physicians have a rather large degree of freedom in regard to what services they are and are not required to provide to patients with disabilities. This freedom could create discrepancies in both treatment and relationships between different physicians and their patients.

Rural and northern regions, such as Northern Ontario, are also faced with the challenge of attracting and retaining doctors and other healthcare professionals (Davidsson & Södergård, 2016; Pong, 2008). Only 9.4% of physicians in Canada practice in rural areas, though 21% of the

country's population lives in these areas (Pong, 2008). If a patient is unsatisfied with their physician's level of knowledge or care, they are therefore limited in their ability to access a new health care provider. The unequal and significant geographic distribution of health services in Northern Ontario means that patients may travel more than 100 kilometres to reach their closest physician, while specialists may be even farther (Al-Hamad & O'Gorman, 2015). These geographic barriers may be further compounded by the inclement winter weather conditions in Northern Ontario which can render driving and flying dangerous or impossible altogether (Browne, 2016; Brundisini et al., 2013). Therefore, individuals with DD who are more dependent on others for transportation may be even more limited, as they have to coordinate driving and appointment times with others in addition to the previously mentioned considerations.

Doctor-Patient Relationships and Satisfaction

Medical schools have some form of training or instruction on disabilities, though physicians will often still focus on the overall dysfunction of their patient instead of the patient's primary complaint (Ryan & Scior, 2014; Symons et al., 2009). Individuals with DD have also indicated that they do not feel as though their health care providers understand them, and that there is a concern with doctor-patient communication (Wullink, Veldhuijzen, Van Schrojenstein Lantman-de Valk, Metsemakers, & Dinant, 2009). Another concern presented by patients with DD is that they are treated like victims that are suffering because of their disability, rather than a patient presenting with a health concern (Symons et al., 2009). As a result, their concerns are frequently not addressed because of their physician's focus on their disability.

Diagnostic overshadowing is a term which refers to a patient's symptoms being misattributed to their disability (Shefer et al., 2014). This phenomena is frequently reported by patients as being a barrier to appropriate care (Iacono et al., 2014; McColl et al., 2008; Michael

& Richardson, 2008). A study conducted by McColl and associates (2008) found that one-fifth of doctors attributed their patients' symptoms to their disability, instead of considering their patients' primary complaint. Students may then, through observing their preceptors' attitudes and treatment of these patients, go on to make similar recommendations. An example of diagnostic overshadowing in clinical practice is a young male patient with DD who presented to his physician with chest pain that was not further investigated, even though his support staff requested it (Michael & Richardson, 2008). This man died of a heart attack not long after this event because of the physician attributing his pain to his disability and not thinking the test had merit for this patient. Meanwhile, Morrison and colleagues (2008) described how one of their participants with a visual disability often had their medical concerns disregarded by their physician, who would shift the focus of the appointment to their vision and eyesight instead. These, among other occurrences of diagnostic overshadowing, are unfortunately very common in the literature (Drainoni et al., 2006; Symons et al., 2009; Veltman et al., 2001). These experiences can not only be frustrating for patients with DD, but can also be life threatening (e.g., Michael & Richardson, 2008). Although an individual's DD may be of concern to the care provider, it is important that patients' needs, and concerns are considered so that diagnostic overshadowing is minimized.

Patients with DD are more likely to rate the quality of care that they have received as fair or poor compared to patients that do not have a disability (Culley & Altman, 2008). Patient age appears to play a role in their level of satisfaction, as older patients are more likely to indicate that their doctor was insensitive or oversensitive in terms of their disability (Veltman et al., 2001). An important determinant of an individual's ability to access health care services is their provider's view and understanding of disability (McColl et al., 2008). Negative attitudes not only

limit the quality of care that a patient with DD receives, but also the further development of the therapeutic relationship between provider and patient (Boyle et al., 2010). The therapeutic relationship between physicians and their patients has been recognized as an important aspect of health care as it plays a central role in the process of healing (Haidet & Stein, 2006). As researchers have shown, difficulties accessing primary care results in patients that are already at a disadvantage having even greater trouble accessing these resources (McColl et al., 2008). Poor access may not only result in a delay in services but can completely prevent patients from receiving the care that they require (McColl et al., 2006). Researchers have demonstrated that the ethics, empathy, and communications skills taught in medical school can improve the doctor-patient relationship (Rios, 2016).

Social Power in Medical Education and Academia

Social Power Theory, originally established by French and Raven in 1959, asserts that an individual's power or authority may significantly influence another's attitudes through social interactions (Shannon et al., 2009). This theory outlines five different bases of social power including coercive, reward, legitimate, expert, and referent power (Erchul & Raven, 1997). The sixth category, known as informational power, was later added by Raven in 1965. Reward powers relates to an instructor's ability to rewards or withhold reward for a student's behaviour. Expert power originates from the expectation that a person possesses expert information or knowledge on a subject that is valued by others. Referent power is founded on an individual's influence being in part due to the student's desire to identify with their instructor. Legitimate power is based on the belief that an authority figure has a legitimate right to influence others. Coercive and reward power are the ability of an individual to punish or reward another, respectively. Informational power relates to the influence held by an instructor as a result of the

relevance of the information that they are conveying to students. Each of these bases of social power are described in-depth below.

The first category of reward power refers to a preceptor's ability to reward or withhold reward for a student's actions. Medical preceptors may influence their students using rewards such as good grades or through the power that praise holds (Gabel, 2012). If a student recognizes that their ability to do well depends on following their preceptor's guidance, it is likely that they would more willingly adopt the attitudes that have been exhibited to them in clinical practice. The student is then incentivized to behave in a manner encouraged by the preceptor, through their ability to reward the student with, for example, a good grade. Reward power is considered to be an implicit form of communication, representing a preceptor's positive attempt to influence their students (Turman & Schrodt, 2006).

Expert power is typically defined as being exerted by a person who possesses expert information or knowledge because of specific skills or expertise on a subject that is valued by others (Goncalves, 2013). Researchers have indicated that preceptors are the only group of individuals that are commonly associated with the concept of expert power (Shannon et al., 2009). Students often anticipate that this type of power will be used in a classroom setting, and this kind of power has the ability to create positive changes in behaviour (Shannon et al., 2009). Therefore, contact with individuals with disabilities that are seen as holding expert power in an academic setting may assist in the formation of positive attitudes towards people with disabilities (Shannon et al., 2009). Likewise, if a student is placed with a preceptor that conveys incorrect, biased, or prejudiced attitudes towards people with disabilities, these experiences may result in a negative impact on the student.

Referent power concerns influence being, in part, due to the students' desire to identify with their preceptor (French & Raven, 1959). This type of power has also been nicknamed "charisma", where the preceptor's personality appears to make others want to identify with their beliefs (Gabel, 2012). For example, a student may be more likely to adopt their preceptor's behaviours and attitudes if they aspire to be like this individual. It would seem likely that doctors in training would aspire to be like their instructors who are medical professionals, and therefore, strive to be similar to these leadership figures. A student's desire to emulate their teacher would then mean that they may model behaviours and attitudes towards patients with disabilities portrayed by these preceptors.

Legitimate power is based on a student's feeling or belief that their preceptor has the legitimate right to influence them and their knowledge (French & Raven, 1959). This type of power is considered to be explicit and is easily recognized by students (Turman & Schrod, 2006). The student recognizes that their preceptor is a health professional that has been properly trained and certified by their governing entity. Students would then, in turn, readily accept the information that their preceptor is conveying, as they consider it to be "legitimate" or coming from a valid source. Physicians have been found to use this type of power frequently in their varying roles (Gabel, 2012).

Coercive power is founded on the idea that a preceptor has the ability to deliver consequences or punishment for a student's actions or lack thereof (French & Raven, 1959). Medical preceptors may influence students to study for a test with the use of coercive power based on the potential that they can distribute poor grades, fail the student, or assert social stigma associated with performing badly (Gabel, 2012). If a student believes that the information they found in a recent medical journal regarding patients with disabilities was correct, and their

preceptor contradicts them, they could risk failing a test or placement if they do not conform to their preceptor's beliefs.

For example, students have indicated that they receive differing nonverbal instructions from their preceptors in regards to recommendations about alcohol use during pregnancy depending on the patient (Coons, Watson, Yantzi, Lightfoot, & Larocque, 2017b). Attitudes may be passed on to students "not in words but in actions" in various situations in which students recognize signs that recommendations should or should not be made based on their preceptor's preconceived beliefs of individuals. Students are often unwilling to contradict their preceptors because of their positions of power, and therefore may more willingly accept information they may be uncertain of (Coons et al., 2017b). The risk of failing may be motivation enough for a student to modify their beliefs on a specific topic. Students may also risk the social stigma of disagreeing with what their superior has said, where they can be called out and potentially mocked by their peers and preceptor for disagreeing.

Lastly, the concept of informational power was later added by Raven in 1965, which refers to the influence held by a preceptor given the relevance of the information that they are conveying to the student (Raven, 1965). Medical professionals and preceptors are expected to know accurate information; therefore, informational power would aid in convincing students to adopt this knowledge with little question and be put into practice. This concept may overlap with the concept of expert power in many cases, as preceptors' expert status is achieved through the knowledge that they hold. Medical students will judge the preceptor's guidance that is being provided to be relevant because of the information that it contains. Compared to the other bases of social power, informational power can result in changed behaviour without continued social dependence on the influencer (Erchul & Raven, 1997). Therefore, even once removed from the

situation with a specific preceptor, informational power will continue to hold an influence over the medical students' behaviours and attitudes.

As a result of social power, the knowledge and beliefs that medical preceptors possess could potentially influence those of their students, and of particular interest, their attitudes and beliefs regarding patients with disabilities. Medical instructors have great control over reward and punishment of their students' knowledge, and they are often perceived to hold expert knowledge in their field (Shannon et al., 2009). While the idea that a physician holds expert knowledge is often a correct assumption, this belief may also result in different learning experiences between students. Consequently, students may demonstrate differing attitudes and behaviours when interacting with patients with developmental disabilities (Shannon et al., 2009). This student-teacher power dynamic therefore has the potential to impact what information a student will accept and then convey to future patients because of their desire to please and not question their superiors.

Researchers have also shown that the relationship created between preceptors and their students is an important component of undergraduate medical education, as well as students' capabilities to educate others in the future (Haidet & Stein, 2006). Haidet and Stein (2006) found that medical students and instructors are frequently placed in adversarial positions, where the student is not given a voice, or may even be emotionally attacked. The use and abuse of power by preceptors can lead to unfavourable learning outcomes for students, which may result in negative health consequences for patients with DD as the authority held by physicians is critical (Barrows & Tamblyn, 1980). The physician holds a medical license and degree, a high level of training in the health field, and is also often responsible for instruction (Barrows & Tamblyn, 1980). Consequently, these individuals could have an adverse effect on the attitudes of their

students towards patients with disabilities. The power of the physician's role as an instructor would also, therefore, indicate that they have the power to convey positive attitudes to their students.

Medical Model of Disability

Medical preceptors hold significant power regarding the information that is being taught to medical students. The instruction that students receive is often based on the medical model. The typical medical approach to disability remains rooted in the perspective that disability is a disorder that needs to be treated (Goering, 2015). Illness and disease classification are used in the medical field to help define the boundaries of practice and responsibility that are associated with care and treatment (Farre & Rapley, 2017). Though the term disease itself generally has a physiological definition, the term illness is more closely associated with the subjective experience of health and sickness (Farre & Rapley, 2017). Individuals with DD are in this way thought to need treatment from medical professionals to heal their disability as though it is an illness or disease (Beaudry, 2016; Goering, 2015). Conceptualization of disability in this manner can lead to patients with DD feeling excluded, being treated as though they are incapacitated, or like they do not fit into societal norms (Goering, 2015). This representation of disability as a negative or pitiable trait has therefore contributed to, at times, less than ideal medical treatment delivered to patients with DD (Retief & Letšosa, 2018). The medical model also ascribes significant power to the health care provider in diagnosing individuals using the criteria of societally "normal" and "not normal" (Retief & Letšosa, 2018).

Medical Culture

North American medical schools are based on a traditional system that have core structures such as a hierarchical teaching system, focus on the acquisition of knowledge,

subjective and periodic assessment in comparison to classmates, training within a certain set period of time, and a summative assessment upon the completion of training (Ferguson et al., 2017). “Culture” indicates a set of behaviours and beliefs that are representative of a specific group or society, and in this case refers to the education of medical students (Ferguson et al., 2017). The medical tradition itself has additional characteristics that are not necessarily beneficial; first, students are taught by pressure, suffering, and stress that is considered a rite of passage (Rios, 2016). Second, the hierarchy is not solely based on knowledge, but on power (Rios, 2016). The notion that if students are not tough enough to cope with the stress and demands of medical school that they should likely seek another path continues to exist (Slavin, 2016). While this belief has lessened over the years, some more established educators continue to argue that there is a “softening” in medical culture and among students (Slavin, 2016, p. 2195).

Medical students are taught in a variety of settings, such as in classroom settings, practicums, and clerkships. Students’ education, combined with their personal and volunteer experiences, can contribute to the formation of their attitudes towards patients with DD. Practices, pressure, and limitations that cannot be attributed to the formal curriculum, and that are frequently overlooked, are known as the “hidden curriculum” of medical education, which can have a tremendous influence on students (Lempp & Seale, 2004). It has been noted that there must be formal recognition and change made regarding the hidden curriculum to improve the culture of medical education (Lempp & Seale, 2004). Components of the hidden curriculum include things such as the importance of the hierarchy, being competitive to get ahead, physician overload, and a lack of feeling personal accountability towards patients (Rajput et al., 2017). Medical students often are faced with intimidation, public shaming, and humiliation, among other tactics, that are employed to ensure that students choose the “correct” answers to questions

(Haidet & Stein, 2006). While a student may have certain beliefs surrounding disability and care, these beliefs could be relatively easily overpowered by an instructor's attitudes and the medical hierarchy. The danger of the hidden curriculum is that it can cause students to become more emotionally detached, cynical and irritable, which may impair patient care (Mahood, 2011).

Methods

Rationale

As discussed above, the health care needs of patients with DD differ from those of the general population and are often left unmet by medical practitioners. The subsequent gaps in services and quality of care necessitate a need for change in the health care and medical education systems to improve health outcomes. The purpose of this major paper is to investigate the influence that preceptors' knowledge and attitudes regarding patients with DD have on medical learners, and how these can translate to patient care. In this paper I will explore the ways preceptors' knowledge and attitudes may influence those of their students, and the potential adverse outcomes associated with negative attitudes when working with patients with disabilities. By studying the effect that preceptors have on student learning, there is an opportunity to determine where early intervention in preventing negative health outcomes for patients, at the systemic level, is needed.

Research Question

The question that this paper seeks to answer is: *What impact do instructors and preceptors have on undergraduate medical students' attitudes towards patients with developmental disabilities in Northern Ontario?* For this paper, I conducted a literature review of previously published Canadian and North American literature to demonstrate the impact of preceptors' knowledge and attitudes on medical students towards patients with developmental

disabilities. Social Power Theory was also used as a theoretical model to guide my analysis and to consider the social influence that medical instructors have on students, and how this influence may create barriers, including attitudinal barriers for patients with developmental disabilities (French & Raven, 1959). Various components of Social Power Theory have been used in the literature for similar research (e.g., Gabel, 2012; Shannon et al., 2009; Turman & Schrodtt, 2006).

Search Strategy

Articles used for the purpose of this paper were found through Google Scholar, PsycINFO, PubMed, Elsevier, and National Centre for Biotechnology Information (NCBI). The Laurentian University Library databases were also used to obtain specific information regarding the Canadian population. Exclusion of specific literature occurred only when articles were based on populations from areas that had significantly different health care and educational systems compared to Canada so that a broad range of data was included. For example, a study conducted in Peru was excluded because the region lacks universal health coverage (Jain & Alam, 2017). Countries such as Australia, the United Kingdom, New Zealand, and the Netherlands share the commonality of universal health care systems, being highly industrialized, and all holding membership in the Organization for Economic Co-operation and Development (OECD) where some of the literature used for this paper was published (Valle, 2016).

The above-mentioned countries have also all ratified the *Convention on the Rights of Persons with Disabilities* put forward by the United Nations, which aims to protect the rights of individuals with disabilities (The United Nations Treaty Collection, 2006). The changing curriculums and atmospheres of medical schools were taken into consideration across the time periods that were assessed. The attitudes and content of medical curricula varied greatly during the time period being investigated. The search broadly included papers that had a focus on

individuals with DD in their research. Journal articles were chosen based on their relevance to the topic in question, as well as how this information can be applied to concerns in Northern Ontario. Papers were selected primarily from North American literature, but other geographic locations with health care and medical education systems similar to Canada were also included.

Articles were identified using specific keywords, including the terms: “developmental disabilities”, “medical students”, “attitudes”, “instructor attitudes”, “health care”, “social power”, “social power theory”, “medical education”, “curriculum”, “physicians”, “health consequences”, “physical health”, “mental health”, “preceptor”, “doctor”, “medical school”, “disability” and “health”. The articles used in this study were published between the years of 1980-2019. Articles were chosen from this time frame as a greater volume of literature began to emerge during this period, likely in part because of the shift in attitudes towards people with disabilities and the increase of deinstitutionalization (Lemay, 2009).

Results

In total, 56 papers were reviewed for this analysis. There were three main themes that were consistently reported in the literature that were identified and investigated in this review: (1) Barriers to Accessing Health Care – Providers' & Students' Knowledge and Attitudes; (2) Teachers Not Taught to Teach – Gaps in the Formal Curriculum; and (3) The Power Dynamics and Culture of Medical Education. These themes were further broken down into subthemes for the purpose of this paper, as outlined in Table 1. First, the articles were coded for relevant data which was documented in a table. Next, common themes and subthemes were identified across the literature and were then named based on their content. Once these themes were analyzed, they were linked back to the research question.

Table 1. *Themes and Subthemes*

Themes	Subthemes
Barriers to Accessing Health Care – Providers' and Students' Knowledge and Attitudes	<ol style="list-style-type: none"> 1. Outside of Their Scope of Practice 2. Communication Difficulties 3. Feelings of Discomfort and Avoidance Tendencies 4. Providers' Biases and Attitudes 5. Students' Knowledge and Attitudes 6. Medical Curricula and Student Knowledge
Teachers Not Taught to Teach – Gaps in the Formal Curriculum	<ol style="list-style-type: none"> 1. Lack of DD Education and Teacher Training 2. Preceptors Don't Feel "Expert" Enough to Teach Content 3. "Nothing about us, without us" – The Inclusion of Individuals with DD in Medical Education
The Power Dynamics and Culture of Medical Education	<ol style="list-style-type: none"> 1. The Student-Teacher Power Dynamic: Compliance and Teacher Confirmation 2. Hierarchy of Medicine and Education 3. Teaching Using Humiliation and the Hidden Curriculum 4. The Power of Educators as Role Models

Of these 56 total articles, 19 were published in the United States of America, 17 in the United Kingdom, 12 in Canada (Ontario), 6 in "Other" regions, and 2 in Europe. Three of the articles from the United States of America compared both American and Canadian literature.

Theme 1: Barriers to Accessing Health Care

Providers' Knowledge and Attitudes

Difficulties with patient-provider communication, lack of training and education specific to DD, and physician discomfort working with patients are all often cited in the literature as barriers to optimal care (Ali et al., 2013; Aulagnier et al., 2005). General practitioners often report that they do not view themselves as the most appropriate professional to be providing care to individuals with DD (Hogg, 2001; Kerr et al., 1996; Stein, 2000). Preceptors' biased attitudes or inaccurate knowledge may also influence quality of care by limiting patients' access to certain services (Tervo et al., 2004). Subthemes regarding providers' knowledge and attitudes of DD that were identified include: (1) Outside of their scope of practice; (2) Communication difficulties; (3) Feelings of discomfort and avoidance; and (4) Providers' biases and attitudes. Medical preceptors play a critical role in educating and training future generations of providers, and so it is crucial that they are conveying correct information and have appropriate skills themselves.

Outside of their scope of practice. While individuals with DD have historically been treated by specialist physicians in institutions and group homes, deinstitutionalization saw a significant shift to primary care providers (Sullivan et al., 2018; Wullink et al., 2009). Despite this shift in care to primary care providers in the community, some professionals still perceive treating people with DD as being outside of their field of expertise (Morrison et al., 2008). These beliefs and attitudes could be rooted in providers' feelings of discomfort because of insufficient

training on the topic (Aulagnier et al., 2005). Preceptors in this position may, consequently, have inaccurate or insufficient knowledge to teach students regarding DD.

There is also the possibility that these preceptors may opt not to provide instruction on DD to their students at all. Some physicians even go as far as to suggest that DD exceeds their scope of practice, and that it should be its own fellowship for those who are interested in it (Morrison et al., 2008). Another study conducted by McMillan and associates (2016) reported that physicians found that the low patient volume of those with mobility challenges meant fewer opportunities to obtain and put new knowledge into practice, and were therefore unable to justify continuing education on DD. Specifically, the physicians in this study indicated that they were not able to justify the cost involved in investing in specialized equipment for these patients, nor pursuing continued education. Many physicians suggested specialized clinics as a solution that would be more efficient than referring each patient to a specialist (McMillan et al., 2016).

These studies demonstrate a potential lack of interest on the part of physicians or the inability to obtain more education on how to better serve their existing patients with disabilities, and the belief that this practice should become an independent specialty. The view that patients with DD are outside of their scope of practice, combined with low patient volume reducing their desire to pursue continued education, is likely a contributing factor to patients' struggle to access equitable health care.

Communication difficulties. One of the frequently cited barriers to care for patients with disabilities is problems with communicating with staff and health care providers in a way that patients and caregivers are able to understand (Ali et al., 2013; Hogg, 2001). Ali and associates (2013) found that some patients felt that they were being ignored if their caregiver was present, and that staff would not modify their communication to fit the needs of the patient. This lack of

accommodation may potentially be because of insufficient knowledge or training on how to effectively communicate with patients with DD (McMillan et al., 2016).

Other authors have suggested that there is a need for increased formal training on communication skills with patients with DD, as there are significant deficits that currently exist between patients and health care providers which can negatively impact adherence to treatment and quality of care (Ervin et al., 2014). The authors of one study reported that communication issues between patients and physicians created a barrier to care for 21.2% of participants (Aulagnier et al., 2005). Health care providers themselves have also expressed that they feel improperly prepared to assess and treat patients with communication deficits (Boyd, 2016).

Communication abilities are important as they are associated with referent power, which is a skill that assists in establishing stronger patient-provider relationships (Gabel, 2012). Good communication skills appear to have the ability to increase the referent power of health care providers, while improving concordance between patients and their physicians, and therefore their compliance with treatments (Gabel, 2012; Kerse et al., 2004). In fact, Canadian medical schools must teach and assess their students' communication skills to remain accredited as these skills are considered to be crucial competencies in health care (Casson et al., 2019; Makoul & Curry, 2007). Although students are taught the principles of how to effectively communicate with patients in class, if their preceptors are not demonstrating proper skills, students may infer that these abilities are not a significant part of patient care (Haq et al., 2004). When students are taught proper communication skills, it helps to improve the quality of care that their future patients will receive as a result of the improved doctor-patient relationship (Rios, 2016).

Feelings of discomfort and avoidance tendencies. A study by Aulagnier and associates (2005) found that greater discomfort was associated with shorter consultation times, which can

lead to fewer accessible resources for patients. Shorter consultation times would also mean that students are receiving less clinical exposure with patients with DD when compared to other populations. The authors of another study also found that almost half of the physicians who participated in their interviews indicated that they felt apprehensive caring for patients with DD (McMillan et al., 2016). As a result, these physicians stated that they would be less inclined to perform physical exams because of the amount of time it would take and viewed them as a burden. When patients have severe disabilities, physicians have been found to demonstrate avoidance tendencies (Duckworth, 1988). When physicians experience greater levels of discomfort, they also tend to dedicate less consultation time to these patients (Aulagnier et al., 2005; Hogg, 2001). These barriers are a concern for patients with DD, as they have often been reported to require longer consultation times because of physical, communicative, and cognitive impairments (McColl et al., 2008).

Providers' biases and attitudes. While great progress has been made over the past 100 years regarding perspectives on disabilities, negative and biased attitudes continue to persist in health care today. The literature has demonstrated that patients frequently experience discrimination in health care because of poor attitudes and knowledge of those treating them (Ali et al., 2013; Boyd, 2016). It is not uncommon for physicians to not speak to DD patients' concerns, or in some cases not address the patient at all if a caregiver is present, while others believe treating individuals with DD is not within their scope of practice (Ali et al., 2013; Morrison et al., 2008; Ryan & Scior, 2014). This discriminatory behaviour on the part of health care providers can have significant impacts on their patients' abilities to access appropriate care, treatment, and referrals which can have long term health consequences for people with DD. These attitudes may impact the allocation of services away from patients with disabilities when

there are less services available, which would likely be exacerbated by the already limited resources in northern, rural, and remote regions (Duckworth, 1988). Proper education for health care students and providers ensures that they have the appropriate knowledge and skill set, but also the ability to positively influence attitudes (Boyd, 2016).

Relationship-centered care has been recognized as playing a critical role in the relationship between the patient and health care provider, as well as in the healing process (Boyd, 2016; Haidet & Stein, 2006). Despite the importance of relationship-centered care, researchers have found that there is a breakdown of skills and attitudes through the course of medical education (Haidet & Stein, 2006). This discrepancy between the formal curriculum and the attitudes that are observed has been described as a consequence of the “hidden curriculum” which exists in many medical schools (Haidet & Stein, 2006; Lempp & Seale, 2004). The hidden curriculum can have an overpowering influence on the behaviours of medical professionals and preceptors as they influence students’ understanding of what is appropriate and inappropriate practice (Haidet & Stein, 2006). The concept of the hidden curriculum is discussed further in Theme 3.

Biases and negative attitudes towards patients with DD can lead to frustration on the part of the patient and exclusion from appropriate health care services (Goering, 2015; Iacono et al., 2014). These attitudes can lead to delays in diagnostic evaluations and the provision of services (Iacono et al., 2014; McColl et al., 2008). In fact, patients have gone so far as to state that attitudes and discrimination are the most significant barriers they face in accessing the health care services that they require (Symons et al., 2009; Tervo et al., 2004; Veltman et al., 2001). Caregivers of individuals with DD have reported patients being shown a lack of respect because of negative comments during emergency room visits (Werner & Stawski, 2012). Patients with

DD also did not receive sufficient attention and indicated that their physicians spoke with their care providers instead of themselves. One example of bias is physicians believing that patients with DD do not have the same range of health problems as those without disabilities, and that they may be at higher risk for certain conditions, which can interfere with patient care (Iacono et al., 2014; Morrison et al., 2008). Furthermore, women with disabilities are significantly less likely to receive and be up to date on their pap tests and mammograms than those without disabilities as physicians assume they are not sexually active (Drainoni et al., 2006; Havercamp et al., 2004; Krahn et al., 2015; McColl et al., 2008; McMillan et al., 2016). Physicians report that they are uncertain as to when these tests should be offered or further pursued by patients with DD, which often leads to them not offering them altogether (Hogg, 2001; Krahn et al., 2015). These misconceptions and biases surrounding DD can potentially lead to physicians withholding services that are necessary for patients despite their disability, so it is important that they are addressed early to allow for optimal provision of care. While improving negative attitudes remains difficult, researchers have indicated that providing new information that challenges the current beliefs of an individual is a useful tool in doing so (Shannon et al., 2009). Students are likely influenced, at least in part, by the power dynamic between themselves and their preceptors, which impacts the information that they are told (Coons et al., 2017b).

Students' Knowledge and Attitudes

Health care curricula can influence the attitudes and unconscious biases of students, while also teaching competencies such as respectful care for individuals with DD (Boyd, 2016). Despite the importance of attitudes, Haidet and Stein (2006) found that they tend to deteriorate during undergraduate medical education. The attitudes held by medical students regarding DD are important for future care to ensure that patients receive appropriate care, and these beliefs

should be fostered while they are still in their undergraduate education while they are more susceptible to preceptors' positive attitudes (Ryan & Scior, 2014). The number, quality, frequency of interaction, as well as the attitudes of their preceptors with these patients have been suggested to be important factors in developing positive or negative attitudes (Ryan & Scior, 2014; Shannon et al., 2009). Medical students learn how to be physicians through the observation of their preceptors in the classroom, as well as through clinical interactions with patients (Rios, 2016). It is therefore crucial that these providers are demonstrating positive attitudes, such as addressing the patient and their concerns, so that these practices and approaches are then passed on to their students.

Students' reported attitudes surrounding patients with DD varies by study. Duckworth's (1988) study indicated that students hold similar attitudes towards people with DD as the rest of the population when measured on the Attitudes Towards Disabled Persons (ATDP) Scale, and Sinai et al. (2013) found that the attitudes of medical students in the UK were generally positive. The worsening of student attitudes may be the influence of their preceptors, patient interactions, or even colleagues. One study by Tervo et al. (2002) reported that compared to male students, female medical students held more positive attitudes regarding patients with DD. However, Tervo et al. (2004) found that there was no attitudinal difference associated with gender in students in their study. In both studies, medical students with more experience working with individuals with DD described greater feelings of comfort towards this population (Tervo et al., 2002, 2004).

Furthermore, one study by Shannon et al. (2009) described that the training that students receive can influence the attitudes that are developed regarding DD. 'Didactic' has been defined as "the ability to pass on skills, knowledge and insight" (Kloek et al., 2012, p. 264), and can be

described as a traditional style of instruction that is teacher centered (Johnson & Hayes, 2016). This finding is encouraging as it would appear to suggest that preceptors who have a DD have to the power to positively influence attitudes in students (Sinai et al., 2013). Students who do not receive enough clinical and didactic training on DD during their education are more likely to report feelings of discomfort when they go on to treat these patients as physicians (Aulagnier et al., 2005; Symons et al., 2009). It is crucial that students are able to obtain the necessary education during their schooling years so that they feel prepared to work with patients with DD. Educational interventions, such as the *Curriculum of Caring* developed by Boyd (2016), have been used to help improve student attitudes and practices. As a result, students have indicated that they feel more comfortable, confident, and competent when working with patients with DD. Although DD teachings in some form are common in medical education, a few hours alone are unlikely to allow for the development of knowledge and skills (Shakespeare & Kleine, 2013). Casson and associates (2019) found that students' main learning experiences are in clinical encounters with patients with DD. This finding is supported by Shakespeare and Klein (2015), who found that when students were tutored on DD by those with disabilities, their feelings of comfort working with this group increased, as did their understanding of DD. The literature on student discomfort consistently indicates that more clinical encounters and education from individuals with DD leads to increased comfort and knowledge when treating these patients as practicing physicians.

Medical curricula and student knowledge. Undergraduate medical curricula on DD often varies as there is no national standard on this topic, and it is often dependent on a properly educated preceptor who will advocate for this content to be taught (Boyd, 2016; Ervin et al., 2014). As a result, medical curricula may not be equipping students with the appropriate

knowledge that they require to go on and treat this population (Hogg, 2001; Morrison et al., 2008). General practitioners have themselves stated that they did not gain much knowledge from their undergraduate medical training on DD and recognize that they lack related expertise on this topic (Hogg, 2001). While contact with this group can reduce prejudice, medical education continues to require increased education of DD to improve the care of the population, while also improving knowledge, skills, and attitudes (Ryan & Scior, 2014).

When students receive education that incorporates patients with DD, it can help to create more positive knowledge, attitudes, and feelings of comfort, all the while increasing students' willingness to care for these patients (Boyd, 2016). Moreover, preceptors who model unbiased treatment of these individuals to students can potentially support more positive attitudes. One encouraging study of two medical schools in Ontario found that the majority of students had received some degree of didactic instruction on DD and clinical training (Burge et al., 2008). On the other hand, in this same study, many Canadian medical schools had no specific DD training as part of their undergraduate education. Half of these students stated that the amount of didactic teaching they received in their undergraduate training was not sufficient, and 93.3% reported a need for improvement in their training (Burge et al., 2008). These reports are upheld by Symons et al. (2009) who identified that medical students, as well as their superiors, have demonstrated inadequacies in knowledge surrounding even the most common of disabilities, such as Cerebral Palsy. Further, students are often uncomfortable when working with patients with DD (Shakespeare & Kleine, 2013; Symons et al., 2009).

Theme 2: Teachers Not Taught to Teach – Gaps in the Formal Curriculum

The authors of many studies have documented the lack of formal training and education for health care providers on DD in classroom and clinical settings, as well as the opportunity for

learning once they are working in practices (e.g., Aulagnier et al., 2005; Boyd, 2016; Ervin et al., 2014). Not only have patients stated that they felt as though their physicians had inadequate training, but physicians themselves also reinforced these reports, stating they felt they were not providing the best possible care and resources (Morrison et al., 2008). If educators lack the formal education and knowledge to work with patients with DD, it would seem unlikely that they would be able to educate students on how to do so. One of the potential challenges to implementing greater emphasis on DD education is that preceptors may not have this knowledge to convey. Previous literature has outlined the importance and use of expert power in teaching students, and so this lack of feeling like an expert on DD could result in teachers not conveying information that they do not feel confident in (Gabel, 2012; Hogg, 2001).

Lack of DD Education and Teacher Training

An important consideration that should be taken in to account is that physicians are often not trained as educators; while they are experts in the field of medicine, many have no formal education in teaching (Hartford et al., 2017; MacDougall & Drummond, 2005; Rios, 2016). Although teaching is centered around the learning needs of the students, it is highly dependent on the patients that are presented and the environment in which students are being taught (Hartford et al., 2017). There are no strict guidelines for conduct for preceptors and their behaviours, which leaves much of their teaching to their personal discretion (Rios, 2016). The experiences and ways in which preceptors learn informs the way that they will go on to teach future generations of students (MacDougall & Drummond, 2005). Physicians indicated that they had not been taught to teach formally, but rather through trial and error (Hartford et al., 2017).

Preceptors' life experiences are also associated with the medical environment they work and train in, which both contribute to their knowledge of being a teacher (Hartford et al., 2017;

MacDougall & Drummond, 2005). These preceptors have also indicated that role models were an important aspect of their development as medical teachers, and many spoke of negative personal experiences that had impacted their teaching. The interpersonal relationship and caring aspects of medical care contribute an unavoidable and critical emotional component to medical education (Crowe et al., 2017; Haidet & Stein, 2006; Hartford et al., 2017). The social powers exerted by preceptors on their students may be tied to their feelings of fear and shame, and have significant influence over the information that they retain and go on to use in their clinical practice (Crowe et al., 2017; Haidet & Stein, 2006).

Preceptors Don't Feel "Expert" Enough to Teach Content

Medical preceptors have the opportunity and ability to model correct physical exams, how to reduce discomfort, and how to interact with individuals with DD to their students when they are familiar with these practices (Casson et al., 2019). Casson and associates (2019) suggest that one of the challenges for these preceptors is that they may not feel "expert" enough to teach students how to appropriately care for patients with DD. This expert power type is one that is frequently used by medical preceptors, and students often expect their preceptors to hold this kind of power and knowledge (Gabel, 2012). When preceptors utilize this type of power, students are more likely to imitate the behaviours of their superior who on go on to be leaders. This ability may be hindered by general practitioners' lack of training or expertise on DD which they are cognizant of (Hogg, 2001). Preceptors have been found to be hesitant regarding their personal skills, as they are concerned that they do not meet the needs of what is being asked of them (Ferguson et al., 2017). These health care educators are accustomed to a traditional training system, and some are concerned that potential changes to this approach to medical education will place increased demands on them.

Other studies have also indicated that one of the many barriers that individuals with DD face in receiving proper care is expertise-related (McColl et al., 2008). A physician's inability to correctly diagnose and manage their patient's disability can prevent them from receiving optimal care, and many physicians, though experts in their field, stated that they required more information on disabilities to improve health care (McColl et al., 2008). If physicians lack this knowledge and are uncomfortable themselves when working with patients with DD, this behaviour could be easily passed on to their students. Meanwhile, medical students will receive less instruction on disability and will go on to be physicians who are not adequately prepared to work with this population or teach future generations about DD. The absence of adequate education would likely go on to create a cycle of instructors who do not feel confident in their knowledge and students who go on to also lack this information, as seen in Figure 1.

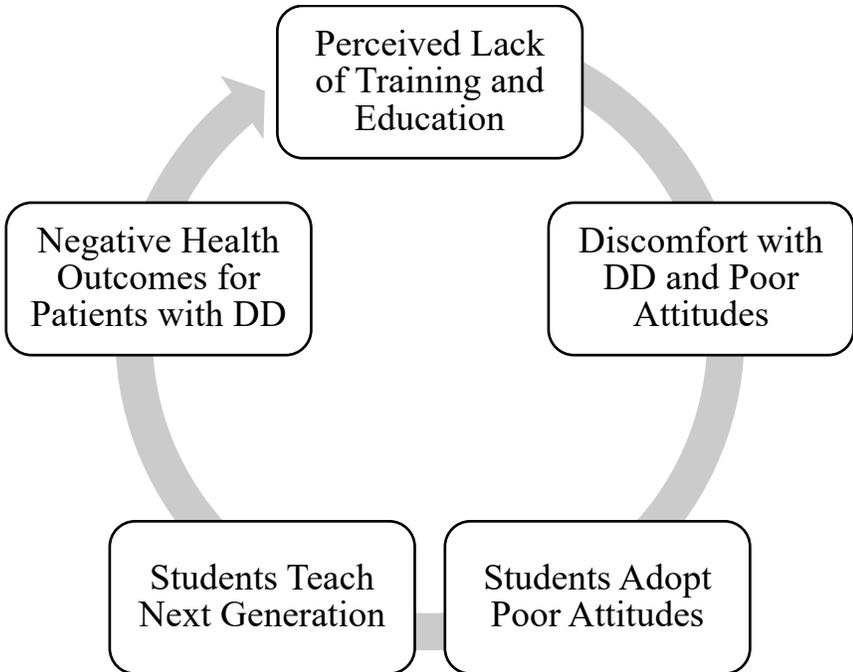


Figure 1. The preceptor-student knowledge cycle.

“Nothing about us, without us” – The Inclusion of Individuals with DD in Medical Education

Almost all of the articles made recommendations regarding the inclusion of individuals with DD, their families, and caregivers in the education of medical professionals and students (Morrison et al., 2008; Ryan & Scior, 2014; Shannon et al., 2009; Sinai et al., 2013; Tervo et al., 2004). Many authors made the recommendation that medical schools should hire professionals with disabilities to teach medical students about specific DDs and care (Morrison et al., 2008). Ryan and Scior (2014) also identified the inclusion of individuals with DD in teaching as a solution to improve training, as contact with groups can reduce prejudice, as well as provide students with the opportunity to gain clinical experience to improve attitudes. Challenging an individual's negative beliefs by providing unbiased and clinically accurate information provided by patients with DD could be an important factor in improving student attitudes by providing greater education on this topic (Shannon et al., 2009). In cases where patients have profound disabilities and need assistance communicating, their family members and caregivers could also become involved in the teaching process.

Patients with DD have reported that they often need to educate their own physicians on the basic components of their disabilities when in appointments (McMillan et al., 2016; Morrison et al., 2008; Symons et al., 2009; Tervo et al., 2004; Veltman et al., 2001). The results of these studies corroborate other findings which suggest that the task of DD education is placed on the shoulders of patients that require care, which often requires a considerable amount of time and effort (Veltman et al., 2001). This need for patient education is again likely because of a lack of knowledge on the part of the physicians (Symons et al., 2009; Veltman et al., 2001). While having the ability to educate health care providers about their disabilities can hold advantages, such as receiving “customized” care, many patients ultimately do not want to have to provide

this instruction (Morrison et al., 2008). Multiple participants in this study indicated that they think cooperative communication is important, but that they don't appreciate having to educate their physicians: "...why don't I just go to medical school myself?" (Morrison et al., 2008, p. 649).

Likewise, a mother whose child has a DD detailed an incident where her daughter had a seizure and was brought to a hospital where there were no available neurologists (Drainoni et al., 2006). As the other staff were not fully educated on her daughter's condition, she had to instruct staff on what to do to help her daughter. While this experience may have been frustrating, it also places the patient in a dangerous position, and makes the mother into a "professional parent" (p. 109), holding more knowledge than the physicians treating her child.

When students are able to interact with people with DD when they are at equal status, or even with those with DD in a power position, positive attitudes are more likely to develop (Tervo et al., 2002). Consequently, it is also important for medical students to have instructors and role models who display positive attitudes towards patients with DD (Tervo et al., 2002). Medical education has historically been "doctor-led" (Bleakley & Bligh, 2008, p. 95), in which the preceptor is a physician who is the students' source of information, values, and skills, as well as being a role model for what is acceptable in clinical practice. As students have traditionally been found to develop their identity through role modelling behaviours, a preceptor who demonstrates negative behaviours or attitudes could have a detrimental effect on those of their students (Bleakley & Bligh, 2008).

Expert power is considered a "soft" power type, or one that is more subtle and less coercive, which has been linked to improved cognitive learning (Elias & Mace, 2005). Expert power is also considered to be a pro-social type of power which is closely related to students

feeling valued by their professors (Turman & Schrodt, 2006). Instructors with DD who are considered to possess expert power as educators would therefore hold the ability to influence and improve the attitudes and knowledge of their students (Shannon et al., 2009). Contact between groups of medical students and instructors with DD provides the appropriate training to reduce prejudice and biases and allows for an excellent opportunity to gain relevant clinical skills and experiences to improve attitudes (Ryan & Scior, 2014). Physicians themselves have even mentioned that “the biggest teachers have been the patients” (Morrison et al., 2008, p. 648), which gives an optimistic outlook on the inclusion of patients with DD as teachers (McColl et al., 2008). Providing students with this training while they are still in their undergraduate medical education creates an early intervention so that these future health care providers move forward with accurate and complete knowledge to properly treat this population.

Theme 3: The Power Dynamics & Culture of Medical Education

The Student-Teacher Power Dynamic

Students may not feel capable of questioning their preceptors' recommendations because of the power dynamic that exists between them (Coons et al., 2017a; Crowe et al., 2017; Haidet & Stein, 2006). There are also the underlying assumptions that physicians do not make errors, that it is acceptable for them to be rude because the work they are doing is important, and that the hierarchy of medicine is necessary so you should not question the doctor (Haidet & Stein, 2006). This dynamic may also potentially impact the information that students are more likely to accept or reject. Students should be given the opportunity to feel prepared to participate in critical conversations with their colleagues and superiors during their education and once they enter their field (Coons et al., 2017a). Many students are either unwilling to, or do not feel prepared to, question their superiors, and this student-preceptor power dynamic likely has the ability to

influence what information students do and do not accept (Coons et al., 2017a; Haidet & Stein, 2006).

Compliance. Students will often comply with the requests made by their supervisors out of concern for the possible negative outcomes if they do not, such as poor grades or humiliation in front of their peers (Elias & Mace, 2005; Gabel, 2012; Seabrook, 2004). For example, Haidet and Stein (2006) describe a case of “pimping” where preceptors use a form of intimidation that pushes them until they break in front of others to demonstrate their own power and to encourage students not to question them. Student compliance also may be impacted by how far into their academic careers they are when an instructor uses social power (Elias & Mace, 2005). Although legitimate power is typically more effective in first year students, as their education progresses, referent and expert power become more effectual (Elias & Mace, 2005). Students have often been found to be compliant or noncompliant irrespective of the power type that preceptors are employing (Elias & Mace, 2005). The student-teacher relationship that is created is determined by the individual’s personal characteristics and traits (Rios, 2016; Turman & Schrodt, 2006).

Teacher Confirmation. Teacher confirmation is the process of supporting their students’ identity through confirming and disconfirming behaviours, and can be used to improve student-teacher interpersonal relationships (Turman & Schrodt, 2006). Disconfirming behaviours include those that are rude, belittling, or embarrassing in nature. These types of behaviours have been associated with students’ affective and cognitive learning, as well as motivation (Elias & Mace, 2005; Turman & Schrodt, 2006). It has also been described that when students feel recognized and acknowledged as being valued by their preceptors, they are more likely to view their instructors as possessing pro-social forms of power when teaching (MacDougall & Drummond, 2005; Turman & Schrodt, 2006). These pro-social power types include expert,

reward, and referent bases of power (Turman & Schrodt, 2006). The benefits of a pro-social teaching style may be a motivator for preceptors to modify their teaching styles in a way that creates an atmosphere of support for their students to foster positive interpersonal relationships and promote optimal learning.

Hierarchy of Medicine and Education

One of the processes that occurs during medical education is the students' acceptance of the hierarchy that exists, where preceptors and medical professionals are placed at the top, and medical students are at the bottom (Lempp & Seale, 2004). The hierarchy often asserts that students must deal with harsh treatment by their preceptors to prove their worth, which is often demonstrated through teaching that utilizes humiliation (Crowe et al., 2017; Lempp & Seale, 2004).

The hidden curriculum, though often not taken fully into consideration, can affect the behaviours and attitudes that students develop during their education (Branch et al., 2001; Haidet & Stein, 2006;). The knowledge that is conveyed to students can hold strong messages about medicine and the hierarchy, and may have a greater impact than educational components of the formal curriculum (Branch et al., 2001). The hidden curriculum, though not explicitly laid out in any textbook, includes unarticulated rules, customs, and ways in which students are expected to behave that can leave a lasting impression with continued exposure (Lempp & Seale, 2004). Students and their preceptors are frequently placed in adversarial roles, where they learn what is expected of them by making errors instead of being explicitly told what the expectations were (Hexter, O'Dowd-Booth, & Hunter, 2019; Seabrook, 2004).

Lempp and Seale (2004) identified the acceptance of this hierarchy as one of the processes that occurs during medical education. Adaptation in the medical system is rare, though,

as the way in which it operates is generally resistant to change (Duckworth, 1988; Ferguson et al., 2017). Many preceptors are comfortable with the traditional training system because of the feeling of stability it brings them, and the thought of change creates feelings of apprehension and resistance (Duckworth, 1988; Ferguson et al., 2017). The resistance to change may create a challenge in the implementation of increased DD education and training if preceptors are unwilling to modify their teachings. Another argument from preceptors is that the medical school curricula taught currently is already overloaded with content, and that the addition of more DD content would put additional strain on students and preceptors (D'eon & Crawford, 2005; Duckworth, 1988).

Teaching Using Humiliation and the Hidden Curriculum

The literature on medical education frequently discusses the “Culture of Medicine” which is used to describe “...the behaviors and beliefs characteristic of a particular group in society” (Ferguson et al., 2017, p. 599; Haidet & Stein, 2006; Seabrook, 2004). Medical culture can have a long lasting impact on what students will consider acceptable and unacceptable practices in medicine (Haidet & Stein, 2006). The culture of medical education and the hidden curriculum are essential aspects of professional development as students are exposed to the ruling culture for extended periods of time (Lempp & Seale, 2004). This dominant culture often puts the student in a passive position where they are the recipients of information where the preceptor holds the power (Rios, 2016). In this system, students have often reported incidents of humiliation, intimidation, and unhealthy competition, through methods such as pimping, being picked on by preceptors, and being made to feel inadequate (Haidet & Stein, 2006; Seabrook, 2004).

Three quarters of medical students in their final years of education have reported that friendliness and approachability are important factors to them (Hexter et al., 2019). Students

place value in preceptors they perceive to be role models and as a result adopt more positive attitudes (Branch et al., 2001; Hexter et al., 2019). One study conducted by Hexter et al. (2019) found that students were more likely to attend operations when they perceived the environment to be welcoming and where they were able to participate. As emotions play a significant role in the retention of knowledge, feelings of being welcomed by their preceptors could result in greater knowledge retention for students (Haidet & Stein, 2006; MacDougall & Drummond, 2005). These positive attributes are valued by students but are frequently not encountered. One of the most prevalent themes in the literature reviewed for this paper was preceptors' use of intimidation, humiliation, and public shaming in medical education (Haidet & Stein, 2006; Lempp & Seale, 2004; Rios, 2016; Seabrook, 2004).

The use of intimidation can be either implicit or explicit. Students may be "picked on" during question periods, blamed when things go wrong, or be made to feel as though they are stupid (Seabrook, 2004). One of the primary methods with which students are taught about the importance of the hierarchy of the medical field is through incidents of humiliation, with as many as 58% of students reporting situations where they have encountered such issues (Lempp & Seale, 2004). This hierarchy is not solely based on a physician's knowledge but also on the power that they exert (Lempp & Seale, 2004; Rios, 2016). As a result of the humiliation they experienced, students indicated that it made them want to hide what they did not know and stopped them from asking questions for fear of looking stupid or experiencing further humiliation (Haidet & Stein, 2006; Seabrook, 2004). The concern with teaching through humiliation is that students will then not ask further questions on topics they do not feel fully confident in, such as DD. While this fear of asking questions may be damaging in all areas of

knowledge, the fact that students already lack training in DD could compound these issues regarding disabilities.

In response to these claims, doctors have acknowledged that “ritual humiliation” does take place as they believe it to be an effective tool to motivate students (Lempp & Seale, 2004; Rios, 2016; Seabrook, 2004). When addressed, doctors discussed that medicine deals with issues of life and death and that medical school needs to prepare students for the challenges they will face; there is a prevailing sentiment that those who are not “tough” enough to handle this treatment should not be in medicine (Seabrook, 2004; Slavin, 2016). Physicians felt as though they would be failing their students if they did not effectively prepare them for their future professions, and stated that this teaching style helped them learn (Seabrook, 2004).

Most students tolerated this type of treatment, not because it motivated them, but because they realized there would be serious implications if they wanted to challenge the current status quo (Crowe et al., 2017; Seabrook, 2004). An important factor that should be taken into consideration by preceptors is that emotions play a significant role in their students' ability to retain knowledge and their future behaviours (Haidet & Stein, 2006). Key regions of the brain that are responsible for emotional processing are also intimately connected to those that store information that is being learned (Haidet & Stein, 2006). The association between emotion and learning would mean that teachings which are learned in the context of specific emotions may be impacted. If students are learning about DD in an environment where they are afraid to ask questions out of fear of looking “stupid”, this situation could potentially create a negative association between these emotions and individuals with disabilities and consequently, negative attitudes.

The Power of Educators as Role Models

Researchers have demonstrated that feelings of social inclusion are an important factor that can have a positive influence on student learning (Hexter et al., 2019; Turman & Schrodt, 2006). Observing their preceptors in class and clinical environments are how students learn to be doctors, and students value preceptors that are positive role models (Hexter et al., 2019; Rios, 2016).

Medical preceptors need to have effective leadership skills not only for patient care, but also so that they are able to successfully teach students (Gabel, 2012; Saravo et al., 2017). One way in which they can do this is through “transformational leadership” (Gabel, 2012, p. 1155), which is a leader’s capacity to encourage the members of their team to work towards a common goal through modeled behaviour (Saravo et al., 2017). Preceptors who are modeling goal-based behaviour and who utilize legitimate, positional, and informational power in their roles, are typically viewed as transformational leaders (Gabel, 2012). As a result, preceptors are placed in a powerful position of being able to model positive care behaviours, and students have been found to value those that they can look up to as a mentor (Casson et al., 2019; Hexter et al., 2019).

When preceptors convey to students that they think they can do well in their class, answer students’ questions in full, and take the time to get to know their students, they are viewed as using expert, referent, and reward power (Turman & Schrodt, 2006). These pro-social forms of power could be used to motivate preceptors to modify their behaviours in this way to best support their students. Part of the human dimension of caring is learned through this observation of physicians in various settings (Branch et al., 2001). Students with preceptors who provide them with knowledge and information, and demonstrate the care considerations that must be made, are more likely to become leaders with similar positive qualities when compared to those

who are just told what to do (Gabel, 2012). It is therefore important that medical students' role models are displaying positive attitudes towards patients with disabilities because of the long-term influence that they can have (MacDougall & Drummond, 2005; Tervo et al., 2002).

Discussion

Difficulties with patient-provider communication as well as a lack of training and education specific to DD were cited in the literature as significant barriers for individuals accessing appropriate care (Ali et al., 2013; Hogg, 2001). Feelings of discomfort can lead to avoidance tendencies, which can be problematic as they are associated with shorter consultation times for patients with DD (Aulagnier et al., 2005; Duckworth, 1988; Hogg, 2001). As a result, individuals with DD have more limited access to health care resources and services. The attitudes and biases held by health care providers can influence those of their students, which have been shown to become less positive during their medical education (Haidet & Stein, 2006). Physicians have reported that they have not received enough training on DD, and that they feel unprepared to treat this population (Aulagnier et al., 2005; Symons et al., 2009). These physicians are often also not formally trained as educators and have reported not feeling expert enough to teach this content to students. Therefore, barriers to care, including attitudinal barriers for patients with DD may be expertise related (Ferguson et al., 2017; Hogg, 2001). Students indicate that they do not feel prepared to question the information provided by their preceptors as a result of the student-teacher power dynamic, the hidden curriculum, and the hierarchy of medicine (Coons et al., 2017a; Haidet & Stein, 2006). The acceptance of the medical hierarchy is a large part of student education, which includes teaching using humiliation. The use of humiliation can have a long-lasting impact on what students deem to be acceptable practices

(Haidet & Stein, 2006). Educators have the power to be role models for their students and demonstrate positive attitudes towards people with DD.

Implications for Research

In this paper, I sought to determine the influence that medical preceptors have on their students' attitudes and whether this influence can lead to negative health outcomes in patients with DD. The literature reviewed for this paper repeatedly pointed to the importance of physicians possessing accurate and unbiased knowledge regarding the diagnosis and treatment of individuals with DD so that they are able to provide optimal care for this population (Tervo et al., 2004). Patients often report that a lack of physician knowledge, diagnostic overshadowing, and communication difficulties are some of the most prevalent barriers to care (Aulagnier et al., 2005; Iacono et al., 2014). It was found that when physicians lack the knowledge and comfort to treat these patients, they will dedicate less consultation time to them, which can limit their access to resources and care (Aulagnier et al., 2005). Likewise, patients frequently indicate that when they were provided with adequate time with their physicians, their primary concerns were often overlooked and the focus of the appointment was shifted to their disabilities (Drainoni et al., 2006; McColl et al., 2008; Michael & Richardson, 2008). These experiences can lead to patients' health concerns being ignored and may result in more serious negative health outcomes when their symptoms are not addressed appropriately (Michael & Richardson, 2008). This diagnostic overshadowing may be in part because of communication difficulties or biases that physicians hold. Challenges with communication is one of the most commonly cited issues in the literature, with patients with disabilities indicating that they often feel ignored by their physicians (Ali et al., 2013).

Based on the findings of this review, future research is needed regarding the communication training needs of physicians when working with patients with DD. Researchers should explore in which circumstances physicians feel that they lack effective communication skills with individuals with DD, and what training that they feel is necessary for them to improve their ability to work with these patients. By identifying where improvements can be made, solutions can be created specifically to target patient and physician concerns regarding communication and care. Researchers could also further investigate the origin of physicians' negative attitudes, and if they are pre-established or a reflection of medical training.

Teaching student's effective communication skills is a necessary component of medical education to ensure optimal care for patients. Educating students on how to address patients with DD with and without the help of caregivers is a vital element of ensuring patients are satisfied with their care. As patients have expressed concerns regarding their physicians not addressing them or their concerns directly, providing patient-centred care-based skills could help students communicate more effectually (Haidet & Stein, 2006). While many studies explore why patients are not satisfied with their physicians, it might be helpful to explore the relationships in which patients are satisfied with their care (Gulley & Altman, 2008; Veltman et al., 2001). By exploring successful patient-physician interactions, we can begin to understand what is most valued in these relationships, and how this can be applied to others.

The attitudes of students reported in the literature varied based on the study. Some authors reported generally positive attitudes towards DD, while others reported deteriorating attitudes during medical education because of their experiences and lack of education (Duckworth, 1988; Sinai et al., 2013; Tervo et al., 2002). Contact with patients with DD can help to reduce biases and improve knowledge, so it is crucial that they receive this training early in

their education so that they feel confident treating their future patients (Ryan & Scior, 2014). Training with this group has also been found to improve the willingness of medical students to work with patients with DD in the future (Boyd, 2016). Future studies could investigate the effectiveness of including individuals with DD as educators and as standardized patients in improving student knowledge and skills, and if these positions of authority help to improve students' attitudes. Through social power, placing preceptors with DD in positions of authority can influence their students' attitudes towards this population. Educators with DD could present information in both lectures and clinical settings in the form standardized patients. Students have indicated that the medical curriculum is already overloaded, so by including standardized patients in their clinical training, they gain experiential learning without the additional course content.

Another aspect of medical education that was identified in the literature was that physicians seldom have formal training as educators (Hartford et al., 2017; MacDougall & Drummond, 2005; McMillan et al., 2016). There are no firm guidelines for how medical preceptors should teach and behave, and so much of their instructional style is left to their discretion (MacDougall & Drummond, 2005). Researchers could suggest a set of guidelines or a course that medical schools could implement to help teach their instructors effective and appropriate teaching strategies within medical education pedagogy. A previous study has recommended the use of informal faculty development programs, but these programs might vary depending on the school and faculty being trained (Hartford et al., 2017). Meanwhile, MacDougall & Drummond (2005) state that teaching these skills should begin while students are still in medical school through formal coursework so that they receive feedback on their performance and obtain mentorship from preceptors.

Shannon and colleagues (2009) also found that students who had interactions with instructors with disabilities held more positive attitudes, indicating that expert power held by this population can potentially have positive educational outcomes. *Relationship-centered care* is the term that has been coined in the literature that refers to the importance of relationships in medical care amongst health care practitioners, family members, and other professionals providing health care (Haidet & Stein, 2006). There has been an increasing concern regarding the dehumanized nature of medicine where health care providers may not consider a patient's social, spiritual, or psychological needs (Branch et al., 2001; Haidet & Stein, 2006). The "hidden curriculum" that is referenced in the literature is then translated to medical education. Therefore, future researchers should consider providing educators with the option of formal course content on teaching methods, as well as less formal means, such as online modules and resources, which could be a beneficial first step in improving comfort levels in the classroom. These feelings of comfort and "expertness" are important components of the teaching process, as this is the power type that students most often anticipate in the classroom (Gabel, 2012). Students are also more prone to imitating the behaviours of their preceptors who display expert power. Likewise, improving their general teaching abilities could increase their skills to effectively motivate their students.

Implications for Practice in Northern Ontario

Historically, patients with DD have lived and had health care provided to them through institutions and group homes (Sullivan et al., 2018). The shift resulting from deinstitutionalization to community-based care has resulted in more care responsibilities for individuals with DD being placed on primary care providers than in the past. Although physicians are now largely accepted as providers of care for these patients, many physicians believe that treating patients with DD lies outside of their scope of practice, and believe that this

care should be its own specialty (Morrison et al., 2008). The belief that they should not be required to treat this population might put their patients at risk of receiving less diligent care and means that the physicians might not be properly educating their students on DD. Furthermore, the view that patients with DD should be treated by “someone else” is in opposition with the UN Convention on the Rights of Persons with Disabilities. The UN states that persons with disabilities should have access to the same range, standard, and quality of health care that are accessible to others, which might be hindered by physicians believing this should become its own specialty. The denial of equal services to this population is a Human Rights violation which could threaten the health of individuals with DD. If this mentality is held by practitioners in rural and northern locations in Ontario where patients already have limited access to physicians and specialists, patients with DD will be at an even greater risk of health inequalities (Nicholson & Cooper, 2011).

Physicians also report that because of the low volume of patients with DD in their practices, there are fewer chances for them to put knowledge on this subject into professional practice (McMillan et al., 2016). Low patient volume could be a contributing factor to why physicians often feel uncomfortable when working with this population, as they are unsure how to treat them and often lack exposure to diverse disabilities with associated strengths and challenges (McMillan et al., 2016). Based on the literature that was reviewed, these physicians are not receiving sufficient training and education on DD during their medical education, and so they are unprepared to work with these patients and teach students in the future (Aulagnier et al., 2005; Symons et al., 2009). As a result, patients with DD are then faced with limited resources and properly trained health care professionals.

Limited access to resources for patients with DD is a particular issue in Northern Ontario and is compounded by the challenges of reaching health care providers (Nicholson & Cooper, 2011). Likewise, physicians in this region may also experience lower patient volume if they are located in remote locations. Conversely, if a physician is the only health care provider accessible in a region, they may be the only available provider to patients with DD. It is therefore crucial that they are properly educated to care for patients with DD as they are the sole physician available to these individuals.

Meanwhile, these physicians are also given the responsibility of teaching the next generation of medical students. Preceptors have identified that they have less training and expertise than they believe is necessary, making them more cautious concerning whether their skills meet patient demands (Ferguson et al., 2017; Hogg, 2001). These feelings of uncertainty often lead physicians to avoid treating patients with DD. Consequently, preceptors may not be teaching students the necessary skills and knowledge required when working with this population. Preceptor are vital in conveying knowledge and clinical skills on DD; therefore, it is important that they possess the confidence in their understanding of the topic to support student learning. Instructors may have not been in the position of student “learner” for many years by the time they begin teaching, and so much of their practical and theoretical knowledge may have been forgotten if it has not been used frequently. It is thus required that medical preceptors hold relevant information as well as the ability to pass this information on to their students. It may be necessary for preceptors to participate in “refresher” courses on certain DD related topics to establish greater comfort and familiarity with the content they must teach, particularly if they do not often encounter these patients. For example, a simple solution could be the use of online modules that can be completed independently when instructors have time available, or

continuing education courses. For example, CanFASD offers online programs such as the “Foundations in FASD” course, which provides training for those working with individuals with FASD. The Foundations in FASD course allows health care providers to obtain continuing professional development credits, while also allowing them to receive the training that they may not otherwise be able to obtain. Online courses are also offered by The Centre for Addictions and Mental Health (CAMH) and The University of Western Ontario.

There exists an atmosphere of humiliation and shame in medicine surrounding not possessing specific knowledge, and students are discouraged from questioning their preceptors. One of the primary hurdles in ensuring physicians have appropriate knowledge regarding DD is that they are unlikely to admit to what they do not know or ask questions. This fear of shame and humiliation that is instilled in them early in their education is likely to have followed them into practice, where they are held in even higher esteem and are expected to know everything. Students should feel comfortable enough in their environments that they can ask questions without the fear of being embarrassed by their preceptors or peers. Having the confidence to ask about what they do not know ensures that they are receiving more complete knowledge and clinical skills. Having the confidence to ask questions is particularly important regarding training with DD, as they typically receive little information and training on the topic.

While the evolution of medical education to best fit the needs of students is required, preceptors may be reluctant to make these changes. Instructors who have been teaching for decades are accustomed to the deeply rooted traditional medical training system and have expressed concerns that change will place greater demands on their shoulders (McColl et al., 2008). The strain of increased demands is a valid concern for physicians who are often already overworked, especially in rural and remote areas where they may be the only health care

provider responsible for an entire region. Despite these concerns, the necessity of change to provide optimal care for patients persists. The cycle of ritual humiliation will only be broken through the challenge of the status quo in medicine. Many mature medical students are less willing to be subjected to the treatment that many younger students accept without question (Seabrook, 2004). Teacher confirmation plays a significant role in the student-teacher relationship, and can impact the cognitive learning, motivation and attitudes of their students (Elias & Mace, 2005; Turman & Schrodt, 2006). Therefore, if preceptors who have control over resources, such as grades, educational opportunities, and praise, are experts based on their DD, students would not have to risk questioning knowledge from this source.

The culture of medicine often also coincides with the hidden curriculum, which rests outside of formal training and is often not articulated, though holds significant influence (Haidet & Stein, 2006; Lempp & Seale, 2004). The medical hierarchy is not just based on the knowledge held by a preceptor, but also the power that they exert (Rios, 2016). Preceptors have openly recognized that humiliation is routinely used in medical education as a method of motivating students despite evidence demonstrating that this is not an effective strategy (Lempp & Seale, 2004; Rios, 2016; Seabrook, 2004). Humiliation may include embarrassing students in front of their peers, asking them questions until they cannot answer correctly, and being made to feel that they are stupid (Seabrook, 2004). The use of fear, shame, and other emotions elicited during the process of educating students is in and of itself a form of social control that is used to prevent students' questioning of their authority (Crowe et al., 2017). Students are then expected to demonstrate their worthiness and conform to these social rules to be accepted into the group. As a result, students have indicated that they would not feel comfortable asking their preceptors questions as they could be further humiliated or embarrassed in front of others (Haidet & Stein,

2006; Seabrook, 2004). Students may then miss gaining greater knowledge when they are afraid to question their superiors.

As medical students are already reporting receiving too little training on DD, it is important that they feel the necessary confidence to request further information from their preceptors so that they are appropriately educated on the needs of these patients. The fear of being humiliated acts as a significant deterrent for student who are seeking information. If students are not able to find these answers from sources other than their preceptors, they will move forwards with gaps in their knowledge and ability to treat patients. Students that are already receiving fewer educational opportunities with patients with DD then may be at an even greater disadvantage if they are then not asking questions. The more exposure students receive to patients with DD, the greater the experiences they are able to gain without directly asking questions. When preceptors demonstrate leadership skills, they have the ability to improve patient outcomes for individuals with DD, as well effectively connect with and educate future generations of physicians (Gabel, 2012; Saravo et al., 2017).

Medical professionals who do not feel prepared to effectively educate their students may also then not model the appropriate behaviours or convey correct information to their students (Casson et al., 2019; McColl et al., 2008). Physicians are expected to hold this type of expert knowledge, and students are more likely to emulate their preceptors when they are perceived to possess it (Gabel, 2012). Meanwhile, if physicians hold negative attitudes and biases towards patients with DD, they can limit patients' ability to access resources and proper care (Goering, 2015). The risk is that these attitudes are then accepted by medical students when taught by these preceptors, in which the cycle of poor care is perpetuated. Negative attitudes held by students should be identified during undergraduate education so that they can be addressed early, and so

that students feel prepared to work with patients with DD in the future (Ali et al., 2013; Morrison et al., 2008).

(Symons et al., 2009). In particular, students report a desire for increased clinical contact, which is a feeling also held by patients with DD (Burge et al., 2008; Morrison et al., 2008). It is impossible for physicians to learn everything about disabilities, or any other topic for that matter, a critique that is not lost on the author. It is therefore important that students and physicians have access to supplementary materials, such as online resources, where they can further seek out information if they require it. There are various online organizations that offer educational content and resources particular to certain disabilities, such as CanFASD, Autism Ontario, and The Canadian Down Syndrome Society. Important resources include The Curriculum for Caring: Fostering Compassionate, Person-Centered Health Care, The Physician Handbook from Autism Canada, and online courses offered by CanFASD all contain valuable content of DD that are easily accessible online for health care providers. Keeping in mind the culture of humiliation, access to these resources would allow for students to gain important information while not needing to risk being embarrassed by a superior.

Patients often indicate that they have needed to educate their health care providers about their disability, which can be frustrating, as well as limiting to the quality of care they are receiving (McMillan et al., 2016; Morrison et al., 2008; Tervo et al., 2004). When individuals with DD who hold expert power are placed in a position of authority, they then have the ability to positively influence the attitudes and knowledge held by their students (Shannon et al., 2009). The benefits of including individuals with DD as preceptors in medical education would then be twofold; students are gaining important clinical knowledge experiences with these individuals

that they need and desire, while also ameliorating their negative attitudes towards this population.

The inclusion of preceptors with DD may provide other benefits as well, as students may not feel comfortable questioning a preceptor's knowledge or recommendations on DD because of the student-teacher power dynamic (Coons et al., 2017a; Haidet & Stein, 2006). It is not uncommon for students to report that they will comply with preceptors' requests for fear of being punished or humiliated (Elias & Mace, 2005; Gabel, 2012; Seabrook, 2004). Another potential solution is for medical schools to hire professionals with DD to teach medical students on this topic (Drainoni et al., 2006). Individuals with DD could be invited into medical education as standardized patients, lecturers, or even as guest presenters. Schools might also consider including caregivers, family members, and varied service providers with either in-depth training or experience with individuals with DD. Integrating patients with DD into the healing process is an important component of high-quality health care delivery (Boyd et al., 2018). While disability and illness are likely to overlap in terms of health care, this view of disability as an illness perpetuates the sick role and takes power away from the patient (McColl et al., 2008).

Limitations and Considerations

Because of the nature of a literature review, there are various limitations of this major paper. As each paper reviewed itself had limitations, these are compounded by this research; some of the articles were specific to a limited number of disabilities, many used various attitude scales, and some only took into account the voices of caregivers and not the patients themselves. Although a concerted effort was made to use data from Canada, and Northern Ontario in particular, a significant portion of the articles found were outside of this region. Papers were therefore selected from regions with similar health care and medical education systems so that

they were applicable to the topic of interest. Articles were drawn from peer-reviewed journals and publications, and the results found between studies were fairly homogenous. Themes were assessed until saturation occurred, in which similar themes were repeatedly generated across articles.

Conclusion

The results of this major paper suggest that there is a lack of formal education and clinical opportunities for medical students to learn about DD. There was an expressed interest in more occasions to work with these patients as well as more educational resources. Patients with DD also articulated a desire to be involved in medical education in a professional capacity to improve knowledge and attitudes so that there is improved care. Through the use of social power, this position of authority may provide the opportunity for improved clinical knowledge and eliminating biases that students may hold.

While medical preceptors hold expert knowledge in the field of health care, they are often not formally trained as educators. Preceptors who lack formal training as educators leave much of their style of teaching to their discretion, which some may use as an opportunity to perform ritual humiliation. While this teaching style is frequently cited as commonplace in the literature, it can have serious negative consequences for student learning and their willingness to participate in discussion. Students desire preceptors who demonstrate qualities of a positive role model, and where they feel welcome. When employed correctly, instructors could use referent power to pass on unbiased attitudes and knowledge regarding DD to their students through in-class and clinical learning experiences. Quality patient care is the priority and reducing the barriers that patients with DD face through system level changes will aid in improved health outcomes for this population. Medical education cannot cover every topic, and the curriculum is often already

overloaded with content. By including individuals with DD in clinical training that is already occurring, students are not experiencing an increased strain that accompanies more information. Students are then gaining an experiential learning opportunity from experts with DD.

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