

The International Effect of the Convention on Rights of Persons with Disabilities on Access in Society and Information

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Abstract. Accessibility standards across the world have changed drastically since the 1970s, with many social reforms, building access requirements, and information technology being modernized to accommodate the needs of the differently abled. This paper seeks to analyze how the United Nations (UN) Convention on Rights of Persons with Disabilities (CRPD) has affected the social atmosphere of various states around the world that have implemented the CRPD to various degrees. This social atmosphere consists of three core components: socio-political perceptions, laws, and information access standards within each sovereign state. Each are aspects that directly affect the quality of life afforded to persons with disabilities that are citizens of these states.

Keywords: Convention on the rights of persons with disabilities · Disabilities · Accessibility · International law · Human rights · Infrastructure · Health care · Education · Transportation · Government · Web

1 Introduction

The rights of persons with disabilities (PWD) are supported by various institutions through society and government, and there are many different factors that influence the standard of protection provided by various nations across the globe. Different states have varying aspects of their laws and societal standards that provide more rights to PWD in comparison to other states; in addition, the implementation of these laws and

the overall quality of life afforded to PWD varies from state to state. The United Nations (UN) Convention on Rights of Persons with Disabilities (CRPD), sometimes known as the UNCRPD was passed by the UN in 2007 to attempt to combat disparities in disability rights legislation [1]. This document acts to guarantee certain fundamental rights for PWD and ensures that the discrimination of PWD does not occur.

The CRPD aims to create the most accessible and inclusive environment for PWD. In Article 9, the CRPD requires that states who have ratified the document are obligated to eliminate any obstacle that can be identified as a barrier to PWD, both in physical and digital environments [1]. The CRPD plays a vital role in ensuring the social atmosphere PWD exist in is fair and accessible, and its effects reach down to most aspects of daily life for PWD. This includes general infrastructure and physical barriers that they may encounter, access to medical facilities and treatment, and the provision of accessible education. Each of these are an integral contributor to the quality of life of any given person, and the innate importance of their equitable provision is not exclusive to PWD.

The way these core aspects of human rights are provisioned has changed drastically since the advent of the digital age. The accessibility of most websites and applications on a technological device is often a second thought to most developers. To assist PWD in acquiring consistent standards of digital accessibility, the CRPD commits signees to promoting internet and information access in Article 9 of the document [1]. This article seeks to analyze the effects of the CRPD has had on each of the states selected based on aforementioned criteria, as well as the degree of ratification and implementation of the convention that the state has achieved. The expected conclusions of analyzing the effects in this way are that states that have ratified the CRPD will have more accessible environments than those who have only signed it or not signed it at all.

2 Methodology and Contextual Findings

The way in which global society views the way each state functions can be found by analyzing the nation's history of human rights and political movements. The style of governance it currently employs to manage its population and territory, whether its citizens have a high (or equitable) standard of living, and what the government provides for its citizens in terms of social programs and rights protections are also indicative of global perception. It is through these general criteria that each of these nations was chosen in order to present the most diverse range of findings, providing a snapshot into the lives of PWD under various conditions.

Each nation investigated in this paper is analyzed in terms of the quality of protections, services, and actualized quality of life its government provides to PWD through laws and societal norms. These may include the general rhetoric and language used when the topic of disability comes up in legal documents, the actualized access to medical facilities and social services that PWD have, the ease of movement they have in their environment, and other factors of access. Ultimately, this paper will primarily consider the digital interactions within these sectors. This paper will also hope to make connections between status of CRPD implementation and other laws and regulations that each state has.

By putting each state's socio-political atmosphere in context of the CRPD, a baseline measure for disability rights and accessibility can be determined, which we can measure against the digital accessibility of each state's website. There are multiple stages to the CRPD for states that choose to incorporate it into their legislation. The four stages of adoption are as follows: not signed, signed, ratified, and ratified with the optional protocol. The general assumption is that the quality of life afforded to PWD will increase as stages of signing and ratifying the CRPD increases. Seven states were selected based on various different statuses of ratification.

In order to qualify as a state with exceptional access standards, a state must incorporate inclusivity and access into the core of its legislative philosophy. By putting accessibility and civil rights first, a state in which every person, regardless of ability, race, or economic class is included in the system of government and culture is created. Laws that ensure building access, access to education that addresses the needs of persons with learning disabilities, and an inclusive political system are key in creating an atmosphere in which PWD are fully citizens of the state, with the same inalienable rights as persons without disabilities. The first section will detail aspects related to PWD and accessibility and the next section will connect that to the digital accessibility review that was done for this paper.

2.1 Canada

Canada has passed some of the most impressive legislature surrounding the fundamental rights of all citizens, central to which is The Canadian Charter of Rights and Freedoms. The charter guarantees fundamental freedoms, as well as a plethora of other rights that are incorporated into the lives of Canadian citizens [2]. The fundamental freedoms form the basis of the rights ensured to Canadian citizens in the rest of the charter. The freedoms are [2]: "Freedom of conscience and religion; Freedom of thought, belief, opinion and expression, including forms of the press and other media communication; Freedom of peaceful assembly; Freedom of association".

Nevertheless, these basic freedoms preempt further provisions of the Charter, following up the fundamental freedoms with sections that encompass democratic rights, mobility (residency) rights, and legal rights [2]. Each of these sections contain policies that ensure a more inclusive and equal environment for PWD. One of the most important sections within the charter to PWD is the Equality Rights sections. The Equality Rights section contains one of the most important clauses for protecting disability rights [2]: "Every individual is equal before and under the law and has the right to the equal protection and equal benefit of the law without discrimination and, in particular, discrimination based on race, national or ethnic origin, colour, religion, sex, age or mental or physical disability". This clause is vital as it ensures that PWD cannot be discriminated against due to a mental or physical disability, signifying that PWD have equal opportunity to exercise their rights as outlined in the Charter as much as any other citizen [2].

It should also be noted that the Charter contains sections outlining both enforcement as well as how the Charter is to be applied within society [2]. In general, the Charter protects a very wide variety of freedoms and rights, even though it lacks a lot of specificity.

The state also has the Canadian Human Rights Act. Perhaps the single most important clause for PWD within the Human Rights Act is [3]: “For all purposes of this Act, the prohibited grounds of discrimination are race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, family status, disability and conviction for an offence for which a pardon has been granted or in respect of which a record suspension has been ordered”.

Once again, PWD have their rights specifically protected in an official piece of legislation. Canada excels at explicitly articulating the rights of many groups of people and minorities. Canada also does well in the aspect that they have the resources available to both apply and enforce their legislation so that the idealized equal environment becomes a reality. The Canadian Human Rights Act also has an entire Discriminatory Practices section where it is made illegal to discriminate against anyone on the aforementioned list in any of the following situations. The Discriminatory Practices section outlines further anti-discrimination in the following aspects [3]: “Denial of good[s], service, facility or accommodation; Denial of commercial premises or residential accommodation; Employment; Employment applications, advertisements; Employee organizations; Accessibility standards”.

The “Accessibility standards” is of utmost importance, allowing legislation to be prescribed to PWD without infringement of other groups’ rights. It also allows officials to recognize that certain accommodations must be recognized and implemented so that the environment that Canada is trying to create is as equal as possible.

Many policy groups in Canada actively pass legislation that is practicable and pragmatic. These policy groups seek to expand the existing environment to make it more inclusive to all people, including those with disabilities. One example is the Accessible Transportation group. The Accessible Transportation Group seeks to “provide accessibility to the national transportation network without undue obstacles” [4]. This group seeks to improve the quality of life afforded to those with disabilities, and expand upon and ensure those rights that are promised by both the Human Rights Act and the Canadian Charter of Rights and Freedoms.

Aside from the Canadian Charter of Rights and Freedoms, The Human Rights Act, and policy groups, there are many pieces of significant legislature surrounding the lives of PWD. One such piece of legislation is, The purpose of the Employment Equity Act is defined as: “To achieve equality in the workplace so that no person shall be denied employment opportunities or benefits for reasons unrelated to ability and, in the fulfillment of that goal, to correct the conditions of disadvantage in employment experienced by women, aboriginal peoples, persons with disabilities and members of visible minorities by giving effect to the principle that employment equity means more than treating persons in the same way but also requires special measures and the accommodation of differences” [5]. The Employment Equity act can be seen as an extension of the Human Rights Act, as outlined in the Discriminatory Practices Section that discrimination in employment is unacceptable.

Canada has made plenty of legal provisions for PWD. An anti-discrimination policy, that include both physical and mental disability, is found in Section 15 of the Charter. The Human Rights Act protects Canadians from discrimination while being employed or receiving services from “the federal government; First Nations governments; and private companies that are regulated by the federal government” [6].

The Canadian government has also created an Intercity Bus Code of Practice; this “voluntary commitment” is made and upheld by bus operators of intercity bus routes and scheduled services to “serve people with disabilities in a safe and dignified manner,” [4]. This includes personal care attendants, wheelchair service, mobility assistance, carriage of aids and service animals, and many more; however, most of these services require an advance notice to the station or transportation service [4].

Health services in Canada and the implementation of laws is different in every province. For example, Ontario’s health care plan includes assistance to PWD so that they can live where they choose, whether that be at home or in a facility. The government also provides services that help individuals research and implement options for assistance and accommodations [7].

While all of Canada’s provinces have inclusive education policies, the implementation and specific laws supporting education differ from province to province, as does the definition of disability. One aspect that sets Canada apart from other states is that they attempt to set PWDs up for success not just with in school but after as well; plans to help PWD’s transition from grade school to higher education or the job market are developed at different ages for disabled students per province. Canada may need to make several improvements to their laws surrounding education for PWD. For example, the laws can be out-of-date with current standards for education; student assessments are too generalized and do not take into account individuals with disabilities. Teachers and education staff sometimes do not have an appropriate amount of individuals who are sufficiently trained to meet the needs of students with disabilities. Disability education in Canada follows one of three paths: separate classrooms for PWD (veering towards the idea of Special Education), classes containing both PWD and non-disabled students (inclusive classrooms), or a mixture where PWD spend time in a “normal” classroom and a segregated one [8]. The inclusive track with PWD fully integrated in “normal” classrooms has been shown to have a positive impact on children; however, a large portion of PWD have been put into the segregated track. However, according to the *Eaton v Brant County Board of Education* case, the Canadian supreme court ruled that a school board has the right to place a student into a special education class [9].

Overall, Canada has excellent documentation of fundamental rights and freedoms guaranteed to its citizens, especially to PWD. Canada has also ratified the CRPD, which only further intensifies what is outlined in the Charter and Human Rights Act [10]. On top of highly inclusive policy, Canada also has the resources to make much of the legislation implementable. On top of pre-existing laws that protect the rights of Canadian PWD, the additional rights protections promised by the CRPD make Canada an example state when it comes to creating an equal, accessible, and non-discriminatory environment for PWD.

2.2 United States

The United States’ society is advancing at a rapid rate, creating a more accessible, and equal environment for PWD, despite not having ratified the CRPD.

The United States has several pieces of legislature including the Rehabilitation Act of 1973, which defines what should and should not be done in certain societal aspects of the lives of PWD. Some of the more important sections in the act are [11]: Section 501; Section 503; Section 504; Section 508. Most of these sections require affirmative action on the part of the federal government, and all of them affect PWD, whether they ensure anti-discrimination policies, employment equity, or creating a digitally accessible atmosphere. Sections 501 and 503 both protect PWD from discrimination in the workplace, and Section 504 goes on to explain that “reasonable accommodation[s] for employees with disabilities” should be made in the workplace [11]. Section 508 finishes by stating that any electronic information developed be made accessible to PWD in a multitude of formats [11]. This signifies that the United States has not only ensured access to the physical world, but is also capable of recognizing the ever-expanding digital atmosphere.

Later, the United States passed Americans with Disabilities Act of 1990 (ADA), which implemented many changes to access in the states. It required publicly funded building built after the act was passed to be accessible to PWD, and that most public transportation systems be made accessible to PWD. Title I outlines that there cannot be discrimination of PWD in the workplace because of their disability [12]. This, coupled with Sections 501, 503, and 504 of the Rehabilitation act of 1973, make powerful workplace equity. The purpose of the ADA is that [13]: “the needs of people with disabilities [be accommodated], prohibiting discrimination in employment, public services, public accommodations, and telecommunications.”

The telecommunications aspect of the ADA outlines the potential for legislature that can/will be passed later in time. It also states that, “Telephone companies must provide systems for people who use telecommunication devices for the deaf (TDD) or similar devices. They cannot charge extra for these types of service.” [12]. This is important to note because without that part of the ADA, the smartphone community could be different for those who are deaf or hard of hearing.

The US has a strong background and way of interacting with PWD, and has strict guidelines as to how PWD should be treated and accepted in everyday life. According to United States Census Bureau, approximately 19 percent, or 56.7 million people, of the US population lives with a disability [14]. Because of the number of disabled citizens living in the US, the state has many laws and regulations that aim to give equality to everyone.

Infrastructure in the US is controlled by the ADA, which ensures that buildings and sites must meet access requirements. The ADA applies to buildings, sites, recreation facilities, streets, sidewalks, and transportation, with several exceptions. They are not, however, in areas that either lack funding or were created before the ADA was passed. These areas created before the ADA do not have to adhere to the accessibility standards laid out in new legislation.

In the US, PWD have “a number of options for health coverage” [15]. Medicaid and Medicare are the two largest health plans for PWD. PWD can, “fill out a Marketplace application to find out if you qualify for savings on a private health plan or for coverage through Medicaid” if they do not already have health coverage [15]. Both of these programs help those with disabilities get the attention they need, if they cannot provide it for themselves.

The Individuals with Disabilities Education Act (IDEA) has been implemented into American society, which is instrumental in providing the right to accessible education for PWD [11]. The main focus of IDEA is outlined in six defining principles [16]: Principle I: Zero Reject; Principle II: Nondiscriminatory Identification and Evaluation; Principle III: Free, Appropriate Public Education; Principle IV: Least Restrictive Environment; Principle V: Due Process Safeguards; Principle VI: Parent and Student Participation and Shared Decision Making.

The Individuals with Disabilities Education Act (IDEA) is a law ensuring services to children with disabilities, and affects upwards of 6 million students. [17]. PWD are also protected under Section 504 of the Rehabilitation Act of 1973. “The Section 504 regulation requires a school district to provide a “free appropriate public education” (FAPE) to each qualified person with a disability who is in the school district’s jurisdiction, regardless of the nature or severity of the person’s disability” [18].

Citizens of the United States have many fundamental rights guaranteed by the Constitution, and while the Rehabilitation Act and the ADA is largely directed toward PWD, it only further aids those who may have been overlooked by the Constitution. One flaw of the laws concerning PWD in the United States is that the United States has signed, but not ratified the CRPD [10]. Ratifying the CRPD could have a significant impact on improving the rights of PWD, so it is still a question as to why the CRPD has not been ratified and implemented within contemporary American society. Two-thirds majority in congress is needed to pass the CRPD. The resources are present, but the United States has not ratified it, so the inclusivity of the social environment in the United States could be improved by this commitment.

2.3 South Africa

In the past 25 years, South Africa has emerged from being one of the most repressive states to being highly inclusive. In the transition from apartheid government to democracy, South Africa has revolutionized the way all citizens’ rights are protected, including PWD. The transitional government ensured that there were many layers of protection for all marginalized groups. While apartheid had primarily affected the black Bantu people, exclusive minority rule also led to Afrikaner and British PWD having incomplete protections of their rights.

During apartheid, the South African government implemented the “medical model” of disability as its primary directive in distributing services to PWD [19]. This model, like other deficit models, treats disability as a condition which must be treated. Rather than adapting their environment to the needs of PWD, it focuses on a person’s weaknesses, rather than their strengths, and attempts to “fix” the person’s disability. In order to execute this framework, very basic government programs provided rehabilitation services such as prosthetics and physical therapy to PWD. The medical model of disability is often criticized for neglecting to take into account the role that having a barrier free environment and the same universal rights as other citizens can have in ensuring the dignity of PWD and as such, it is regarded by most disability experts to be outdated and restrictive. The oversights of the medical model were further exacerbated by racial and patriarchal division under apartheid, leading to black PWD having

dramatically fewer rights than white PWD [20]. The services provided to white PWD were significantly superior to those accessible to black PWD, with the gap in service quality and availability exacerbated even further by The Black Homeland Citizenship Act of 1970. The act forcefully relocated blacks into designated “Bantustans”, segregated ghetto townships stricken with poverty [21]. This left most blacks with no reliable access to healthcare and other social services. What services were available were extremely underfunded [20].

This all changed in the transitional stages of South Africa’s government. The new constitution that was introduced is widely regarded as one of the most libertarian and inclusive constitutional documents in the world today. In chapter 2 Section 9, the “equality clause” guarantees fundamental human rights to all citizens, stating that “The state may not unfairly discriminate directly or indirectly against anyone on one or more grounds, including race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, disability, religion, conscience, belief, culture, language and birth.”, which is extremely robust language protecting all civil, social and political rights of the citizens [19]. This clause is further clarified by The Promotion of Equality and Prevention of Unfair Discrimination Act (PEPUDA) which defines discrimination as “any act or omission, including a policy, law, rule, practice, condition or situation which directly or indirectly (a) poses burdens, obligations or disadvantage on; or (b) withholds benefits, opportunities or advantages from any person on one or more of the prohibited grounds” [22]. PEPUDA also has a clause specifically dedicated to protecting against discrimination of PWD, requiring the removal of barriers to access and preventing the deprivation of facilities that are necessary for their functioning in society. The constitution also establishes a Pan South African Language Board in chapter 1, Section 6, which is required to “promote, and create conditions for, the development and use thereof” many languages, including sign language [19].

Throughout the transition, many legislative documents and organizations within the government were created which completely revamped the way in which disability was discussed and how disability services were disseminated to the people. Within the presidency, the Office on the Status of Disabled Persons (OSDP) was established, as well as within the offices of the premiers of the 9 provinces [23]. The OSDP started its work with the White Paper on an Integrated National Disability Strategy (INDS), enacted on December 3rd 1997 [23]. The main goal of the INDS was to introduce the “Social Model” of disability as the primary directive of disability rhetoric in South Africa. The INDS was drafted in response to The Disability Rights Charter of South Africa, a document produced by the collectivized PWD of South Africa to assert their rights in the transition [23]. INDS addressed how the current legislation did not protect the rights of PWD and exacerbated the conditions of unemployment, poverty, and societal exclusion that many were subjected to at the time. It also specifically addresses the struggles of blacks with disabilities by acknowledging that they had been systematically disadvantaged by the apartheid system. Through this, they had been more likely to be subjected to severe conditions of poverty, malnourishment, illiteracy, homelessness and racially and politically motivated violence as a result of systematically enforced inequality [23]. Having acknowledged this, INDS sought to rectify this institutionalized exclusion by adopting the social model of disability and beginning to work on creating a barrier free environment [23].

INDS was highly effective in what it sought to do. In changing disability rhetoric and creating a framework for barrier free access in all fields, the rights of PWD were revolutionized nearly overnight. While it was extremely progressive at the time it was introduced, it was updated and replaced by the White Paper on the Rights of Persons With Disabilities (WPRPD) on December 9th, 2015. The updates were introduced chiefly to comply with the requirements of the CRPD, which South Africa had signed and ratified without hesitation in 2007 [19]. While the WPRPD did not explicitly introduce any changes in policy, simply reiterating that the primary responsibility in ensuring equality for PWD lies with the federal government of South Africa with the vision of creating a “free and just society, inclusive of all as equal citizens”. In order to do this, the WPRPD established nine strategic pillars to “task duty-bearers with the responsibility of eradicating the persistent systemic discrimination and exclusion experienced by persons with disabilities” [19]. By laying out a specific plan as to what needed to be accomplished and how it would do so, the OSDP provided a framework for progress in ensuring equality through this document [19].

The most recent development in South African disability legislature is the unveiling of the National Development Plan 2030 (NDP). This document outlines the government’s aims to eliminate poverty and reduce inequality by 2030, doing so by “by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society” [24]. While its overall goals are not central to the discussion on disability rights, it makes specific mention of disability and poverty as codependents in a vicious circle and outlines ways in which the cycle may be broken through social assistance programs, programs designed to reduce unemployment among the disabled, and ensuring access to quality education for disabled children [24].

With the ratification of the CRPD and the adoption of these post-apartheid regulations, things have changed greatly for South Africa as a whole, and especially so on the front of medical service availability and affordability. In the INDS, methods for improving health care for PWD are discussed with the policy object being to make accessible health care tangible for those with disabilities. Beginning with the “development of a comprehensive universal health care system, at primary, secondary and tertiary level, that is sensitive to the general and specific health care needs of people with disabilities”, the OSDP instituted a form of socialized medicine that works toward making quality care more accessible for all South Africans [20, 25]. Provided Furthermore, by following the guiding principles of the constitution and the CRPD the updated White Paper seeks to ensure that an “integrated and holistic basket of accessible and affordable healthcare services at a district and community level” is provided to PWD [19]. By these provisions, programs have been developed to ensure transportation and medical insurance is to those in need that cannot afford it.

In addition to revolutionizing medical care, South Africa has taken inclusion in the schooling systems seriously, as inequality in public schooling was a key part in the development and enforcement of the apartheid state. To ensure inclusion, many reforms to integrate schools have been instituted, although progress in this regard has been slow. This is partly due to the fact that many Afrikaner and British citizens send their children to private schools, making racially integrated public education a difficult thing to achieve [26]. While the White Paper has attempted to ensure equity for learners

with disabilities in its schools by provisioning for programs to meet the needs of intellectually disabled students and training in South African Sign Language, it has fallen short in implementation due to lack of resources in schools and insufficient teacher training in Universal Design for Learning [19, 27]. It's likely that increasing the training around Universal Design for Learning would have an impact on the digital accessibility of educational resources as well.

South Africa has a plan set in place to help the infrastructure in the state reach the standards laid out in the CRPD, but the infrastructure currently is not accessible to those standards. The National Infrastructure Plan, adopted in 2012 as part of the NDP, seeks to improve all of the state's public infrastructure to ensure ease of movement and access to basic services such as clean water and electric power to all of its citizens [19]. The plan will take place over the next few years, however, due to lack of funding, the plan is off to a slow start. South Africa's failure to fund this plan is a result of prioritizing assets that require renovation more urgently [19]. In addition, South Africa also has specified architectural design standards for ensuring public facilities are accessible as evaluated in terms of "safe, comfortable and convenient use of the site, building or facility by persons with disabilities" [28].

2.4 India

India is the world's fastest growing nation in terms of population and economy, on track to exceed China as the world's most populous state by 2022 [29]. With poverty rates reaching nearly 30% [29], it is clear that the state has difficulty ensuring equality and adequate standards of living. This is important because poverty disproportionately affects PWD due to inequity in education access and employment.

While India's constitution does not explicitly protect citizens from discrimination on a basis of disability, there is other legislation that presumably extends the discriminatory protections outlined in article 15 to PWD [30]. However, it does "make effective provision for securing the right to work, to education and to public assistance in cases of ... disablement", delegating this responsibility to the states [30]. While these clauses are not especially robust when compared to many modern constitutions, they do fulfill a basic understanding of human rights and the need to protect those who are systematically disadvantaged.

The Rehabilitation Council of India was established in 1992 for "regulating the training of rehabilitation professionals and the maintenance of a Central Rehabilitation Register", providing regulation in the rehabilitation and therapy industry for PWD [31]. It established minimum education requirements for professionals, and defined disability in a legal sense for the first time. However, the legislative act that provided for the council's inception uses terminology and rhetoric that is now considered offensive, using "handicapped" as opposed to the now preferred "disabled" and even using "mental retardation" to refer to intellectual disability [32]. The act was amended in 2000 to extend the responsibilities of the council to promote research in the field of rehabilitation [32]. Despite its limitations, the enactment of this legislation was a step in the right direction for India's disability policy.

Disability legislation in India was revolutionized in 1995 by the Persons With Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act. As suggested by the title, it encourages the treatment of disability as a human rights issue, protecting the rights of PWD more fully [30]. Disability was redefined to include low vision, leprosy, and mental illness. Inclusive language is used more consistently throughout the document, although the use of “mental retardation” is maintained [33]. The issues of accessibility in education and employment are addressed and significant measures were taken to ensure that the needs of PWD were met in public schooling [33]. Additionally, 3% of jobs in public service were reserved for PWD (a form of affirmative action) [32]. Perhaps most importantly, Chapter VIII is dedicated entirely to non-discrimination. It requires a barrier free environment and prescribes the implementation of curb cuts, auditory signals at crosswalks, engraving on crosswalks and rail platforms, and accessible public transport, among other things, to accomplish this. It also forbids demotion or lack of promotion in the workplace based on disability, an important provision for ensuring employment rights [33].

Having signed and ratified the CRPD in 2007, India’s legislative body passed the Rights of Persons with Disabilities Bill in 2014 bringing its laws up to compliance with the convention, simultaneously repealing and replacing the 1995 PWD act with more thoroughly inclusive legislation [34]. Article 3 states that the government will “ensure that the persons with disabilities enjoy the right to equality, life with dignity and respect for his or her integrity equally with others.”, blanketing inclusivity into the core of the document’s philosophy [34].

Despite of these legal measures and the work of a multitude of disability rights organizations dating back 50 years, rights for PWD have only progressed marginally, due to the negative cultural attitude towards PWD in India [35]. This stigma is widely shared by the people of India and is rooted in the Caste System, a system of social stratification based on cultural and religious beliefs in Karma and reincarnation that results in the exclusion of an entire class of people as “untouchable” [36]. While it is now outlawed, the Caste system still has a heavy influence in Indian Society, resulting in disability being seen as a result of bad karma. Counseling and education are being used to overcome this stigma, but progress is slow as these beliefs are deeply entrenched in society [36].

Another challenge in improving the conditions PWD are subjected to is the intense poverty that nearly 30% of India’s citizens face [29]. The condition of extreme poverty tends to result in poor health and further deterioration of any pre-existing conditions or disabilities. This is not only due to harsh, unsanitary living conditions, but also to inaccessible health care, whether the inaccessibility results from an inability to travel to health care facilities, or the cost of service itself. This is especially prevalent, as people in poverty are considered to be a lower class, like PWD, providing aid faces a cultural block resulting in PWD living in slums being stigmatized two-times over [35].

While India has ratified the CRPD, the effects of it are slow to come into effect [36], especially in areas with higher poverty rates. The Indian Government will provide finances to states wanting to upgrade their accommodations and public facilities, but it is typically only new buildings that are accessible [36]. As one person put it, “Take a short wander around virtually anywhere in the state’s capital and you are faced with stairs or steep, uneven pavements with stalls intruding on their spaces, running

alongside unruly traffic” [35]. In economically prosperous areas the infrastructure is often very accessible, but as the relative wealth of an area decreases, so does the prevalence of accessible infrastructure.

The stigma surrounding disability has led to a lack of adequate discussion and knowledge on the subject. This disparity in information makes it difficult to both teach about disabilities and provide accessible education. Free education for disabled minors and equal access to education of any level is ensured in The Persons with Disabilities Act of 1995 [34]. Despite this, education for children with disabilities is not in the school curriculum. However, the Indian government is working on a separate curriculum that will provide schools with teachers trained specifically to teach students with special or additional needs, as well as a system that will monitor student progress [35].

Even though over a decade has elapsed since The Persons with Disabilities Act was passed, approximately 90% of India’s disabled children still do not attend school. Only 9% have obtained an education higher than secondary while most do not move past primary school [34]. The inaccessible infrastructure of the school facilities themselves discourage students with disabilities from participating. Desks and chairs for physically disabled students are only reported to be provided in 15% of universities, and few universities provide assistive software, Braille books, or sign language interpreters for visually and hearing impaired students, significantly affecting the level of digital accessibility in higher education [34]. Mental and learning disabilities often remain undiagnosed due to stigma, with some teachers refusing to work with children with disabilities because they believe that they are incapable of learning [35].

2.5 Russia

The Russian Federation that emerged from the collapse of the Soviet Union in 1991 is a dramatically more inclusive and open state than existed previously. As the Russian superpower’s government was restructured from a communist authoritarian state to recognizing open democracy as a valid means of governing, the former environment of secrecy and denial of basic human rights was dissolved, at least on paper.

The Soviet government’s stance on disability was to deny of that disability was ever present. This led to the rights of PWD ultimately being refused. A “two-pronged policy of care and control” for managing disabled Russians was applied very unevenly in the USSR, leading to some PWD lacking any care, and some being institutionalized permanently without any retribution [37]. These and other policies prevented adequate educational and employment opportunities for PWD, keeping them politically weak.

Despite the “openness” of Mikhail Gorbachev’s democratization of Russia, human rights violations against PWD continued to be purveyed by the state into the 2000s. Parents were pressured by doctors to relinquish guardianship of their disabled children so that they may be institutionalized and hidden from the world, given a second-class education, and live an unfulfilling life [38].

Issues with guardianship and power of attorney came to a head in the 2005 landmark European Court of Human Rights case *Shtukaturov v. Russia*. In this case, an individual with a mental disorder pressed charges against the state for violating his

rights as outlined in Articles 6 and 8 of the Convention for the Protection of Human Rights and Fundamental Freedoms. His mother had institutionalized him in a psychiatric hospital against his will [39, 40]. The case resulted in Russia introducing legislation in 2011 to allow people denied of their legal personhood to initiate proceedings to regain it [40].

Russia ratified the CRPD in May of 2012, and the changes necessary to comply with the convention were implemented in October of that year. As a result of this, the number of disabled people in Russia grew from 4.7 million to 13.2 million people in 2013 [41]. By updating the definition of “disability” to the standards as defined in the CRPD, the ratification was the primary instrument of a 6% increase in relative weight of PWD in Russia’s population [41]. By providing an avenue of recognition for their disabled status, the CRPD has allowed these people to more fully exercise their rights and receive benefits, thereby increasing their quality of life.

Despite carrying such population, PWD often find the infrastructure of the world around them to be inaccessible. In cities, “narrow doorways, no elevators, and steep wheelchair ramps that lack accessible handrails” exist [42]. Accessible busses and trains exist, but they are few, infrequent, and little information is provided about them making using one next to impossible. Trains are only accessible through narrow turnstiles that do not allow PWD to pass through to purchase tickets and board. Signs around public transport are not accessible to individuals with visual impairments. Discrimination by transportation service workers is prohibited by law but there is lax enforcement. Refusal to lower wheel chair lifts on buses and denial of entry onto flights based solely on disability has been known to occur [42].

One thing preventing children with disabilities are the infrastructure barriers; accessible transportation is very limited, and a lack of ramps make it difficult for children to enter buildings. Accommodations such as assistive technology and books for students with visual impairments are scarce. While schools specifically for PWD do exist, they are often located far from homes, offer limited academic programs, and lead to segregation between PWD and their peers [43]. While Russian law guarantees a right to education and include a ban on discrimination based on disability, Human Rights Watch discovered that children with disabilities were being denied admission by administrators on the grounds that, “they are unable to learn, are unsafe around other children, or engage in disruptive behavior” [43].

The main barrier for PWD when accessing health care is discrimination from health care services employees. People with auditory impairments have “difficulty communicat[ing] with healthcare professionals and getting emergency services” [42]. Sometimes medical professionals will refuse to talk to or accommodate PWD. In some more extreme cases, PWD are discouraged by health care workers from their right to a family; for example, abortions are encouraged for disabled parents. In one instance, a health care worker tried to separate a visually impaired woman from her infant daughter [42]. PWD also face a lack of adequate accommodations and care for their specific disability [42].

2.6 South Sudan

Having faced the horrors of the continent's longest running civil war, and persisting racially motivated violence, poverty, displacement and other conditions of social inequality continue to plague more than half of South Sudan's population [44]. These conditions affect PWD disproportionately due to lack of access to social services such as transportation, education programs, and medical care (there are an average of two doctors per 100,000 population) [44]. However, there are many government and nonprofit groups that are dedicated to making progress and improving the quality of life available to PWD.

The Transitional Constitution of the Republic of South Sudan, established as an update to the interim constitutional document drafted in 2005, specifically mentions disability and the rights of PWD in three contexts: guarantee of the right to education in Article 29 of the Bill of Rights, the dissemination of rehabilitation and benefits to disabled war veterans in Schedule A: National Powers, and the guarantee of equitable access to civil services in Part 9, Article 139 [45]. However, it does not provide an official definition of discrimination or assert that the government will protect PWD from discriminatory practices in access to public facilities and businesses.

Despite the setbacks that come along with enduring violence, the Government of South Sudan has been steadily making a concerted effort to generate progress. The goal is to develop a strong democratic nation that realizes freedom, equality, justice, peace and prosperity for all through a National Development Plan issued by the state at its inception in 2011 [46]. The plan outlines the government's goals of developing the kind of strong institutions required to have a transparent and accountable administration that can protect its people and provide social services to those who need them [46]. It also establishes the Ministry of Gender, Child, Social Welfare, Humanitarian Affairs and Disaster Management, which is to become the primary organization responsible for producing legislation and managing programs that ensure the welfare of those whose ability defend themselves is compromised [46].

In 2013, the Ministry of Gender, Child, Social Welfare, Humanitarian Affairs and Disaster Management produced the South Sudan National Disability and Inclusion Policy, a progressive document which claims to "address and respond to multiple vulnerabilities faced by PWD and promote and protect their rights and dignity in an inclusive manner" [47]. In order to accomplish this goal in such a politically turbulent environment, the policy lays out objectives to ensure access, encourage participation in society, and promote respect and the protection of the rights of PWD [47]. The policy also identifies barriers and goals for improving access to education for the disabled, acknowledging the difficulties that come with lack of infrastructure, widespread poverty and negative cultural perceptions of PWD. While South Sudan has not signed the CRPD, this policy makes specific mention of its influence and implements many of its principles to be more inclusive [47]. Perhaps most importantly, it seeks to mainstream disability and adopt a human rights based approach to the subject, ensuring nondiscrimination [47].

Infrastructure for providing accessibility in South Sudan lacks in all areas, from the architecture itself, to the roads, to the lack of access to clean water in rural areas. Public buildings often do not have ramps or lifts, and any lifts that do exist lack audio or

Braille instructions, making them inaccessible to those with visual impairments [47, 48]. Information on public transportation is inaccessible for both print and digital forms. However, the largest barrier for PWD in physical access is the inability to reach facilities; roads are the largest obstacle. They are both poorly maintained and the travel distance from rural areas is often too great for PWD to embark on safely.

According to article 31 of the Transitional Constitution, PWD's are entitled to health services, both traditional and specific to their condition [47]. However, many are deterred from receiving health care by the problems in infrastructure listed above. The lack of ambulances deters access to hospitals. For those able to reach facilities, inadequate drug supplies reduce treatment options. In addition to the lack of trained medical professionals, knowledge and information on disabilities is sorely lacking in the health care systems of South Sudan, leaving few with the skills to treat people, including PWD. This in turn leads to many health care workers holding negative attitudes towards PWD, resulting in substandard or no treatment. As for mental health, the lack of information often prevents treatment and access to medication [47].

While the Transitional Constitution grants a right to education to all South Sudanese citizens, "regardless of disability or gender" [47], due to a multitude of reasons many PWD have yet to obtain this right. Discrimination is still prevalent in South Sudan in the forms of violence, both physical and verbal in nature. This impedes education access for many South Sudanese PWD on the basis of discrimination and negative perceptions of disability, long distances that must be traveled on deteriorating roads to reach schools; lack of assistive devices and specialized schools and teachers; and inaccessible infrastructure within schools such as ramps and toilets [47]. In 2014, Inclusive Education Policy was instituted by the South Sudanese government to promote education for all citizens by providing accommodations and inclusion for students with both physical and mental disabilities [48]. Despite this initiative, South Sudan is far from providing accessible education to all.

3 Digital Accessibility Findings

A website maintained by each state's government was analyzed using manual accessibility evaluation by one inspector, in order to maintain consistency of results. The website selected was the titular site for these various states, which usually details government information and services, an essential feature for PWD to access. From this website, only one page was tested: the homepage for each. We used The Web Content Accessibility Guidelines 2.0 (WCAG 2.0), published by the World Wide Web Consortium (W3C) to conduct our research [49]. A non-normative document created by the W3C was used to interpret WCAG, the Understanding WCAG 2.0 document [50], and the strictest interpretation of the standard was used in this case. As soon as an error was found for each criterion, this was marked, so multiple errors per page were not gathered. There are several weaknesses to this approach.

Firstly, the full site was not analyzed. Secondly, all errors on each page were not gathered, as mentioned above, when an error was found per criterion, it was marked in the data as having error. Thirdly, severity of each violation was not gathered, so some of the impact on PWD may not be fully represented by this study. To minimize the

interpretative nature of functional requirements (WCAG 2.0 is less a checklist and more a set of functional requirements), several success criterion were limited. For 1.3.1, heading hierarchy only was assessed. Several criteria were skipped, including all AAA criteria, and 1.4.3, 2.4.4, 2.4.5, 2.4.6, 3.2.3, 3.3.4, 4.1.1, and 4.1.2. So, in total 30 success criteria were evaluated. The website identified for South Sudan website was unable to be evaluated as it went down midway through the study (Table 1).

Table 1. Study results from digital accessibility evaluation.

Country	Passes	Fails	N/A	CRPD status
Canada https://www.canada.ca/en.html	23	-	7	Ratified
United States https://www.usa.gov/	19	3	8	Signed
South Africa http://www.gov.za/	16	9	5	Ratified with optional protocol
India https://india.gov.in/	19	3	8	Ratified
Russia http://government.ru/en/	19	4	7	Ratified without optional protocol
South Sudan http://www.goss.org/	-	-	-	None

4 Conclusion

While this paper details many effects of the CRPD, it is by no means a complete analysis, and instead hopes to contextualize how the CRPD interacts with legislation and regulations within other states and how that impacts digital accessibility. It is important to acknowledge that ratification status of The CRPD is not the only means to indicate a dedication to ensuring the rights of PWD. Although it seems to have a positive impact on digital and physical access, other laws and regulations outside of the protocols of the CRPD have similar effects. Furthermore, the effects of changing socio-political attitudes and the legislative trends that follow them are not to be overlooked in this regard. The CRPD also has an impact on the atmosphere of digital accessibility. It is seen in that the ratification status of the CRPD has a positive effect on the extent to which something is made accessible digitally, as it can be seen that the CRPD aims to make all aspects of life for PWDs more accessible. It would be logical to assume that if the ratification status increases, then digital accessibility would correspondingly improve.

This raises many other questions: Do international standards for digital information and electronic information technology appear in conversation by UN groups and other international bodies often enough? What makes some states have more/better digital governance than others? Are higher access standards a signature of more digitally mature states, and what means do they use to provide information to the public? It should also be brought into question why certain states have not implemented the

CRPD to a further extent even though they have the resources to do so. The prime example being the US. Furthermore, does change in government administration bring changes to the socio-political atmosphere that affect the daily lives of PWD? If so, then the CRPD implementation would surely have a positive effect during transitional periods of government, acting as a sort of baseline for the rights of PWD.

While many of the states analyzed have ratified the CRPD, the actualized impact of the convention is lacking in developing nations, where it often needed most. While these states have an intent to fulfill its accords, they often lack the funding and logistics to make progress in ensuring the rights of PWD in overall environmental accessibility and protection from discrimination. In more developed states however, the convention appears to have resulted in immediate and effective positive change, creating more accessible and inclusive environments for PWD. Even developed states that have not ratified the CRPD, such as the United States, have superior actualized disability rights than developing nations, making the maturity of the state, rather than ratification status, the core variable in the insurance of disability rights. This signifies that the overall effect of the CRPD is determined by a combination of factors that include available resources and logistics, ratification status, political and social attitudes, and pre-existing legislature.

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