

Research

Disparities in Social Determinants of Health Amongst People with Disabilities



SOCIAL DETERMINANT DISPARITIES

Disparities in Social Determinants of Health Amongst People with Disabilities

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Abstract

Social determinants of health are conditions, such as physical and social environments, that contribute to health outcomes. People with disabilities face more health inequities than their nondisabled peers, including in disparities in social determinants of health. Although research indicates people with disabilities face a number of disparities compared to their nondisabled peers, less research has focused on disparities in social determinants of health amongst people with disabilities as a group. The aim of this study was to explore disparities in social determinants of health amongst people with disabilities. To do so, we analysed Personal Outcome Measures[®] interviews from 1,473 people with disabilities in the United States to examine correlates of social determinant of health. Findings revealed a number of characteristics that were correlated with lower social determinants of health among people with disabilities: gender; race; primary communication method; disability type; impairment severity; residence type; and, organizational supports in place. Many of our findings link to larger structural systems and oppressions. Working on an individual scale to provide better services and supports to individual people with disabilities, although important, is not enough. People with disabilities will not have health equity until structural issues, such as racism, sexism, and ableism, are addressed.

Keywords: social determinants of health; people with disabilities; health outcomes; health disparities; personal outcomes; organizational supports; health equity; systems

Disparities in Social Determinants of Health Amongst People with Disabilities

Health disparities are avoidable differences which disproportionately impact certain groups, especially those social minorities who have historically faced discrimination or power imbalances (Abbott & Elliott, 2017; United States Department of Health & Human Services, 2015). As such, health disparities are an indicator of a nation's health (Blane, 1995).

Compared to nondisabled people, people with disabilities have significantly poorer health outcomes, such as shorter life expectancies (Altman & Bernstein, 2008; Iezzoni, 2011; Krahn et al., 2015). Yet, these health disparities are not necessarily due to their impairments or health behaviours alone – people with disabilities face more health inequities and are exposed to more disadvantage than nondisabled people (Emerson et al., 2011). People with disabilities' health disparities are particularly impacted by high instances of poverty among people with disabilities, disability employment disparities, a lack of affordable and accessible housing, and a lack of accessible transportation (Frier et al., 2018).

Health equity requires much more than controlling or preventing disease; health disparities and poor health cannot be explained by health services alone (Currie et al., 2009; United States Department of Health & Human Services, 2015). In fact, research suggests although medical care is important for health, medical care is only responsible for 10% to 15% of preventable mortality in the United States (Braveman & Gottlieb, 2014; Currie et al., 2009). Instead, the conditions in which people live, work, and play – social and physical environments – largely determine peoples' health– (Braveman & Gottlieb, 2014; Currie et al., 2009). According to the World Health Organization (2010a) 'the roots of most health inequalities and of the bulk of human suffering are social: the social determinants of health' (SDOH) (p. 39). As such, to reduce health disparities and promote health equity, attention must be drawn to SDOH.

SDOH are ‘conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks’ (United States Office of Disease Prevention and Health Promotion, n.d., n.p.). SDOH ‘offer a window into the microlevel processes by which social structures lead to individual health or illness, and offers the opportunity to consider the macrolevel processes by which power relationships and political ideology shape the quality of these social structures’ (Raphael, 2006, p. 668).

According to decades of research, a large number of social, economic, and environmental factors contribute to health (United States Department of Health & Human Services, 2015). For example, socioeconomic status significantly impacts peoples’ health and not only produces, but also reinforces disparities (United States Department of Health & Human Services, 2015; United States Office of Disease Prevention and Health Promotion, n.d.; World Health Organization, 2010b). Environments, both natural and built, also serve as SDOH. Examples include: climate change, exposure to pollution, community areas, sidewalks, accessibility, neighbourhood deprivation, and many more (United States Department of Health & Human Services, 2015; United States Office of Disease Prevention and Health Promotion, n.d.). Social structures, such as social exclusion, segregation, discrimination and social stratification, negatively impact health (Raphael, 2006; World Health Organization, 2010b). The current government of a country and/or region and its ideology, as well as policies, also impact peoples’ health (United States Department of Health & Human Services, 2015; World Health Organization, 2010b). Related to governance and policy, healthcare access also significantly impacts health outcomes (Abbott & Elliott, 2017; Frier et al., 2018; United States Office of Disease Prevention and Health Promotion, n.d.; World Health Organization, 2010b). Education and employment also serve as

SDOH (Abbott & Elliott, 2017; Compton & Shim, 2015; Frier et al., 2018; World Health Organization, 2010b). Housing as well as physical and social neighbourhoods serve as SDOH (Kim et al., 2012; Raphael, 2006). Relationships also promote health and reduce health inequities (Frier et al., 2018; Lauder et al., 2007; World Health Organization, 2010b). Finally, access to technology is a SDOH (United States Department of Health & Human Services, 2015; United States Office of Disease Prevention and Health Promotion, n.d.).

Social Determinants of Health and People with Disabilities

Although there is less research specifically about SDOH of people with disabilities, what research does exist suggests that SDOH impact people with disabilities alongside their nondisabled peers (Emerson et al., 2011). In fact, people with disabilities actually have poorer outcomes and face more health inequities than nondisabled peers (Altman & Bernstein, 2008; Iezzoni, 2011; Krahn et al., 2015). As such, they face several SDOH that are specific to their status as people with disabilities. Ableism, which is discrimination of and prejudice towards people with disabilities, in health care systems, health and social support, social exclusion and isolation, and living conditions, negatively contribute to people with disabilities' mental and physical health (Emerson et al., 2011). For example, the majority of health care providers are ableist (VanPuymbrouck et al., 2020); their prejudiced attitudes contribute to under referral, differential treatment, and differences in clinical decision-making, and, as a result, negatively impact people with disabilities' health outcomes (Akhavan & Tillgren, 2015; Krahn et al., 2015; McColl et al., 2008; Peacock et al., 2015; Reichard et al., 2011; Sanchez et al., 2000; U.S. Department of Health and Human Services). In fact, the ableist focus on preventing and curing disability, and conflating disability with illness can result in broader inequities being ignored (Emerson et al., 2011).

Emerson et al. (2011) note, to promote health equity for people with disabilities, systems must

address the drivers of social stratification (e.g. by ensuring that disabled children access effective education, regulate labour markets to ensure that disabled adults can access rewarding and secure employment); address differential exposure to adversity (e.g. social marketing to combat disablist attitudes); address differential vulnerability (e.g. by promoting the resilience of disabled people); and address differential consequences (e.g. by ensuring that all disabled people have equal access to effective healthcare). (p. 146)

To address drivers of health inequity for people with disabilities, it is important to achieve greater clarity about how they operate. Although research indicates people with disabilities face a number of health disparities compared to their nondisabled peers (Altman & Bernstein, 2008; Iezzoni, 2011; Krahn et al., 2015), less research has focused on the SDOH of people with disabilities compared to nondisabled people. This is problematic as health disparities research is key for health equity (Abbott & Elliott, 2017). People with disabilities are a unique population; they not only face health disparities compared to nondisabled people, their health and quality of life are largely dependent on the government services they receive (Burns, 2009b). Less is known if, and how, SDOH impact people with disabilities, including across different disability populations. For example, people with intellectual and developmental disabilities (IDD) tend to face health disparities even compared to people with other disabilities (World Health Organization, 2001). As a result of these differences, SDOH research about nondisabled people cannot necessarily be applied to people with disabilities – ‘scholars caution against generalizing from such research to a population with a substantially different health profile’ (Burns, 2009b, p.

1521). Therefore, the aim of this study was to explore disparities in SDOH amongst people with disabilities in the United States. To do so, we analysed Personal Outcome Measures® interviews from 1,473 people with disabilities to examine correlates of social determinant of health.

Methods

Measure

The data came from Personal Outcome Measures® interviews (The Council on Quality and Leadership, 2017b); the Personal Outcome Measures® is a person-centered quality of life tool that measures self-determination, choice, self-advocacy, and organizational supports. The Personal Outcome Measures® tool not only examines personal outcomes, but also examines the individualized organizational supports in place to facilitate those outcomes. The Personal Outcome Measures® tool includes 21 indicators divided into five factors: my human security; my community; my relationships; my choices; and, my goals.

Personal Outcome Measures® administration occurs in three stages. In the first stage, a certified Personal Outcome Measures® interviewer has an in-depth conversation with the participant with disabilities about each of the indicators. During this conversation, the interviewer follows specific open-ended prompts to guide the discussion and gather data for decision making. During the second stage, the interviewer speaks with someone who knows the participant with disabilities best, and knows about organizational supports, such as a case manager or direct support professional, and asks them questions about individualized supports and outcomes to fill in any gaps. During the third and final stage, the interviewer observes the participant in various settings if necessary, and then completes decision trees about the indicator questions about personal outcomes and individualized organizational supports based on all of the information gathered. Individual record reviews are also conducted as needed. As the measure is

person-centered, if there are any discrepancies across stages, the person with disabilities' answers are the ones used.

The Personal Outcome Measures[®] was developed over 26 years ago based on findings from focus groups with people with disabilities, their family members, and other key stakeholders about what really mattered in their lives. The Personal Outcome Measures[®] has been continuously refined over the past two decades through pilot testing, 26 years of administration, commission of research and content experts, a Delphi survey, feedback from advisory groups, and validation analyses (The Council on Quality and Leadership, 2017b). The Personal Outcome Measures[®] has construct validity (Friedman, 2018), and is reliable, as all interviewers are required to pass reliability tests with at least 85% agreement before being certified (The Council on Quality and Leadership, 2017a).

Participants

The secondary survey data were transferred to the researchers with no identifiers; institutional research board (IRB) determined it was exempt from full review. Data was originally collected over a one-year period (January 2018 to December 2018) from hundreds of organizations in the United States, including local, county, and state governments, that provide any type of the following services to people with disabilities: service coordination; case management; family and individual supports; behavioural health care; employment and other work services; residential services; non-traditional supports (micro-boards and co-ops); and, human service systems. Data were collected from 1,473 people with disabilities (Table 1). The majority of participants were White (66.8%), Men (57.8%), and used verbal/spoken language as their primary communication method (78.3%). The majority of participants (46.1%) lived in provider owned- or operated-homes, family homes (21.3%), or their own homes (15.5%). The

remaining participants lived in host family or family foster care (3.9%), intermediate care facilities for people with developmental disabilities (ICFDD; 2.9%), and other settings (4.8%).

Clinical information was not collected; as such, as a proxy for impairment level, those with complex medical support needs or comprehensive behavioural support needs were considered to have more severe impairments. Complex medical support needs were defined as those people who needed skilled nursing care twelve or more hours per day. Comprehensive behavioural support needs was defined as those people that required twenty-four hour supervision particularly due to risk of dangerous behaviour, such as harm to themselves or others. The proxy item was dichotomous (more severe impairments (1); less severe impairments (0)). 33.4% of the participants had more severe impairments (Table 1).

Individualized organizational supports describe the number of person-centered supports participants receive from human service organizations to facilitate their quality of life based on the 21 Personal Outcome Measures[®] indicators. Participants had an average of 11.0 out of 21 organizational supports in place ($SD = 5.7$).

Variables and Analyses

Utilizing the Personal Outcome Measures[®], the Social Determinants of Health Index was developed in 2018. The Index measures peoples' social determinants so disability service providers can examine the SDOH of those they support and subsequently provide targeted services and supports (Friedman, 2020). According to a factor analysis, the Social Determinants of Health Index is made up of three indicators: (1.) Choice and Engagement; (2.) Person-Centeredness; and, (3.) Health and Safety (Friedman, 2020). Choice and Engagement includes ones' ability to make decisions about life and community as based in self-determination, participation, autonomy, and empowerment as well as ones' ability to engage in community

integration and relationships (Friedman, 2020). Choice and Engagement includes the following indicators: people interact with other members of the community; people participate in the life of the community; people perform different social roles; people choose where to work; and, people choose where and with whom to live. Person-Centeredness includes people deciding what is important to them, having those choices and rights respected, and being able to exercise those rights (Friedman, 2020). Person-Centeredness includes the following indicators: people exercise rights; people are treated fairly; people are respected; and, people experience continuity and security. Health and Safety includes fundamental, person-centred safety and health – both of which can serve as SDOH, either facilitating or hindering ones' health (Friedman, 2020). Health and Safety includes the following indicators: people have the best possible health; and, people are safe.

We calculated Social Determinants of Health Index scores for each participant by averaging people's scores on all 11 indicators (the three factors). We also calculated scores for each individual factor (i.e., Choice and Engagement, Person-Centeredness, Health and Safety) by averaging people's scores for just those applicable indicators which make up that factor.

In order to examine disparities in – correlates of – overall SDOH, we ran a multiple regression with the Social Determinants of Health Index score serving as the dependent variable (DV) and the demographic variables (Table 1) serving as the independent variables (IVs). In order to explore disparities in more depth we also ran three multiple regression analyses in order to examine correlates of each of the three sub-components – factors – of the Social Determinants of Health Index: Choice and Engagement; Person-Centeredness; and, Health and Safety. To do so, Choice and Engagement, Person-Centeredness, and, Health and Safety each served as a DV for a different model; the demographic variables served as the IVs.

Results

On average, participants had 51.4% of SDOH present ($SD = 27.2\%$). On average, people with disabilities scored higher on Health and Safety ($M = 73.4\%$, $SD = 35.2\%$) than Choice and Engagement ($M = 41.3\%$, $SD = 32.3\%$) or Person-Centeredness ($M = 52.9\%$, $SD = 38.5\%$).

Overall Social Determinants of Health

We ran a multiple regression analysis to examine correlates of Social Determinants of Health Index scores (total; DV) with the following IVs: age; gender; race; primary communication method; disability type; decision-making authority; impairment severity; residence type; and individualized organizational supports. The model was significant, $F(33, 1082) = 68.54$, $p < 0.001$, $R^2 = 0.68$.

According to the model, controlling for all other variables, men had more SDOH present than women (10.8% vs 8.3%; Table 2). Controlling for all other variables, people with personality/psychotic disorders and people with physical disabilities had significantly fewer SDOH present (5.7% and 4.9% respectively) than people with any of the other disabilities (10.8%). Controlling for all other variables, people who lived in their own homes had more SDOH present (10.8%) than people who lived in ICFDD (3.3%).

The more individualized organizational supports people received, the more SDOH they had present (see figure 1). For example, controlling for all other variables, someone that has 15 out of the 21 organizational supports in place is expected to have 69.3% of the SDOH present, compared to someone who has 5 out of the 21 organizational supports present who is projected to only have 30.3% of the SDOH present.

Social Determinants of Health: Choice and Engagement

We also ran a multiple regression model to specifically examine disparities in the Choice and Engagement subcomponent of the Social Determinants of Health Index; the model was significant, $F(33, 1082) = 33.44, p < 0.001, R^2 = 0.51$.

According to the model, controlling for all other variables, Black people had significantly lower scores for Choice and Engagement than White people (2.0% vs 5.5%; Table 2).

Controlling for all other variables, people who had physical disabilities had significantly lower scores for Choice and Engagement (-5.8%) than people with any of the other disabilities (5.5%).

Controlling for all other variables, people with more severe impairments had significantly lower scores for Choice and Engagement (2.1%) than people with less severe impairments (5.5%).

Controlling for all other variables, people who lived in their own homes had significantly higher scores for Choice and Engagement (5.5%) than people who lived in provider owned- or operated-homes, ICFDD, or other settings (-8.8%, -11.3%, and -4.5% respectively).

The more individualized organizational supports people received, the higher they scored for Choice and Engagement (see figure 2). For example, controlling for other variables, someone that has 15 out of the 21 organizational supports in place is expected to have 61.0% of Choice and Engagement present, compared to someone who has 5 out of the 21 organizational supports present who is projected to only have 24.0% of Choice and Engagement present.

Social Determinants of Health: Person-Centeredness

We also ran a multiple regression model to specifically examine disparities in the Person-Centeredness subcomponent of the Social Determinants of Health Index; the model was significant, $F(33, 1082) = 37.16, p < 0.001, R^2 = 0.54$.

According to the model, controlling for all other variables, White people had significantly higher scores for Person-Centeredness (-0.9%) than people who fell into the ‘other’ category of

racers (-19.1%; Table 2). Controlling for all other variables, people who primarily communicated through facial/body expressions had significantly higher scores for Person-Centeredness (8.1%) than people who primarily communicated through verbal communication (-0.9%). Controlling for all other variables, people with personality/psychotic disorder, seizure disorder/neurological problems or other disabilities not listed had significantly lower scores for Person-Centeredness (-10.2%, -7.0%, and -12.5% respectively) than people with all of the other disabilities (-0.9%). Controlling for all other variables, people who lived in their own homes had significantly lower scores for Person-Centeredness (-0.9%) than people who lived in provider owned- or operated-homes, or other settings (5.4% and 9.9% respectively).

The more individualized organizational supports people received, the higher they scored for Person-Centeredness (see figure 3). For example, controlling for all other variables, someone that has 15 out of the 21 organizational supports in place is expected to score 72.6% of Person-Centeredness outcomes present, compared to someone who has 5 out of the 21 organizational supports present who is projected to score 23.6% of Person-Centeredness outcomes present.

Social Determinants of Health: Health and Safety

We also ran a multiple regression model to specifically examine disparities in the Health and Safety subcomponent of the Social Determinants of Health Index. The model was significant, $F(33, 1082) = 8.48, p < 0.001, R^2 = 0.21$.

According to the model, controlling for all other variables, people who primarily used verbal communication had significantly higher scores for Health and Safety (47.3%) than people with 'other' primary methods of communication (34.4%; Table 2). Controlling for all other variables, people who had limited or no vision (legally blind) had significantly higher scores for Health and Safety (58.1%) than people with all of the other disabilities (47.3%). Controlling for

all other variables, people living in their own homes had significantly lower scores for Health and Safety (47.3%) than people who lived in provider owned- or operated-homes (61.0%).

The more individualized organizational supports people received, the higher they scored for Health and Safety (see figure 4). For example, controlling for all other variables, someone that has 15 out of the 21 organizational supports in place is expected to score 84.8% of Health and Safety outcomes present, compared to someone who has 5 out of the 21 organizational supports present who is projected to score 59.8% of Health and Safety outcomes present.

Discussion

Attention to SDOH is critical for health equity. People with disabilities face a number of health disparities that require attention (Havercamp & Scott, 2015). In fact, people with disabilities are often even more disadvantaged than their nondisabled peers (Altman & Bernstein, 2008; Iezzoni, 2011; Krahn et al., 2015). The aim of this study was to further explore those disparities by examining disparities in SDOH amongst people with disabilities in the United States. Findings revealed a number of characteristics are correlated with lower SDOH even among people with disabilities. To reduce health disparities and promote health equity, attention must be paid to SDOH, particularly those disparities faced by people with disabilities.

According to our findings, women with disabilities face greater disparities in SDOH compared to men with disabilities. Although problematic, this finding is not necessarily surprising as discrimination, including sexism, impacts peoples' health and serves as a social determinant (Compton & Shim, 2015; Currie et al., 2009; Kim et al., 2012; Raphael, 2006; World Health Organization, 2010b). Moreover, as with nondisabled women, women with disabilities are more likely to face more disparities compared to men with disabilities, such as

more limited opportunities, more violence, and lower wages (Baldwin & Johnson, 1995; Nario-Redmond, 2010; Ostrove & Crawford, 2006).

Given widespread and systemic racism, especially for people with disabilities of colour (Bell, 2006; Erevelles & Minear, 2010; O'Toole, 2013), it is perhaps not unexpected Black people with disabilities had lower Choice and Engagement scores than White people, and people from races that fell into the 'other' category had lower overall SDOH as well as Person-Centeredness scores. People of colour commonly experience inequalities in healthcare in the United States as a result of racism (Blair et al., 2013; Goodman et al., 2017). For example, because of subtle racism, Murphy-Berman, Berman, & Campbell (1998) found people used excuses (e.g., responsible for their condition, etc.) to rate Black people lower priority and less deserving than White people in health care determinations. As with the general population, amongst people with disabilities, race is not only a SDOH, it also serves as a marker of power in/equities and social structures that influence health (Raphael, 2006). All of which reinforces the need for organizational supports to help promote the SDOH of people of colour with disabilities. Disability service organizations need to be intentional about providing quality supports to people of colour to work to counteract these disparities.

People with seizure disorder had lower person-centeredness scores than people with other disabilities. It may be that as a result of their medical impairment they are often situated in more risk-adverse environments and, as a result, given fewer opportunities to exercise rights, etc. They also received significantly fewer individualized organizational supports than people with other disabilities. Respectful services and supports balance the duty of care with the dignity of risk (Perske, 1972). Similarly, people with personality/psychotic disorder had lower SDOH than

people with other disabilities as well as lower Person-Centeredness scores, both of which may be tied to a lack of dignity of risk.

People who had vision impairments had higher health and safety scores than people with other disabilities. It may be that due to vision status healthcare was more systematic and emergency preparedness more intentional. As well, there may be an interaction with other variables, such as impairment severity. Or there may be other factors at play that resulted in people with vision impairments having higher health and safety scores; more research is needed to explore this finding, as well as if it was sample specific.

People with physical disabilities also had lower overall SDOH as well as less choice and engagement than people with other disabilities. This may in part be due to physically inaccessible environments, which not only serve as social determinants themselves, but can also prevent people with physical disabilities from education, employment, and other opportunities and make it more difficult to interact with others in the community and form social relationships, which can also serve as SDOH. Moreover, people with physical disabilities in our sample also received fewer individualized organizational supports than people with other disabilities, which likely also contributed to these disparities.

While it is important to support people with these disabilities in order to counter these disparities, it is important to remember attention to individuals *alone* places blame upon these individuals for their lack of outcomes. Rather, health equity requires attending to structural systems which produce and reinforce health disparities.

One such way to address structures and systems is by changing cultures. Service providers are often very good at protecting people and ensuring their health and safety. For example, people who lived in provider owned- or operated-homes in this study had significantly

higher health and safety scores than people who lived in their own homes. However, often protection is in conflict with choice and engagement, that is, people are over supported and as a result have fewer opportunities to control their own lives and take risks (Perske, 1972).

Moreover, although research indicates people with IDD have better outcomes in the community (Beadle-Brown et al., 2016; Friedman, 2019; Larson et al., 2013; Simões & Santos, 2017), and this is mirrored in our findings that people with disabilities in ICFDD have fewer SDOH in place, community is not simply a place where people with disabilities visit. Rather, engagement needs to occur – people with disabilities must be embedded within the community. Gidley et al. (2010) explains, according to social inclusion theory, ‘the narrowest interpretation [of social inclusion] pertains to the neoliberal notion of social inclusion as access’ (p. 7). Access in this instance is not necessarily about quality. ‘A broader interpretation regards the social justice idea of social inclusion as participation or engagement,’ (Gidley et al., 2010, p. 7) particularly human rights, opportunity, and fairness. Finally,

the widest interpretation involves the human potential lens of social inclusion as success through empowerment; ... social inclusion asserts and goes beyond both economic equity/access, and social justice notions of equal rights for all, to maximise the potential of each human being thus supporting broader cultural transformation. Employing models of possibility instead of models of deficiency, human potential approaches take a further step beyond access and participation to encourage the interpretation of social inclusion as empowerment. (Gidley et al., 2010, p. 7)

In order to address structures and systems, it is also necessary to ensure there is a robust community infrastructure which everyone can benefit from. Our findings revealed, when

organizational supports are in place, people with disabilities' overall SDOH, as well as their choice and engagement, person-centeredness, and to some extent, their health and safety, skyrocket. For example, someone receiving no individualized organizational supports is expected to only have 11% of the SDOH present, whereas someone with all 21 organizational supports present is expected to have 93% of the SDOH present. The link between SDOH and organizational supports highlights people's SDOH, and by extension their health outcomes and their quality of life, are largely dependent on the services they receive (Burns, 2009a). While this is helpful as it provides a clear pathway to increasing people with disabilities' SDOH, this link is also problematic because of the large gaps in the current service system. A lack of funding, funding models that do not account for quality, long waiting lists, and an epidemic of support staff turnover all impact the services and supports people receive, and by extension, their health outcomes and quality of life (American Network of Community Options and Resources, 2014). As a result, we believe there is significant evidence that the provision and quality of Medicaid, including long-term services and supports (LTSS), should be considered a social determinant of health of people with disabilities. While research indicates healthcare is a social determinant for all people (Abbott & Elliott, 2017; Compton & Shim, 2015; Frier et al., 2018; Kim et al., 2012; Raphael, 2006; United States Office of Disease Prevention and Health Promotion, n.d.; World Health Organization, 2010b), Medicaid in particular, which supports the majority of the LTSS of people with disabilities, is especially critical for people with disabilities (Braddock et al., 2017). As such, there needs to be a recognition that funding is an investment, and that cuts to Medicaid may directly hinder the health outcomes of people with disabilities.

When interpreting our findings, a number of limitations should be noted. Our data was not representative of people with disabilities in the United States, as the majority of the sample

was White. As this was a secondary data analysis, we did not have the ability to ask additional questions or add additional research variables. We also did not explore interactions between variables.

Many of our findings link to larger structural systems and oppressions. As a result, working on an individual scale to provide better services and supports to individual people with disabilities, although important, is not enough. People with disabilities will not have health equity until structural issues, such as racism, sexism, and ableism, are addressed. There must also be a service system that recognizes and values people with disabilities, especially people with disabilities of colour, women with disabilities, and other social minorities with disabilities, and allocates funding accordingly – quality is an investment. Fortunately, there are decades of research indicating that investing in SDOH transforms the lives of people, that is, the investment pays off (Abbott & Elliott, 2017; United States Department of Health & Human Services, 2015). While broaching structural problems decades or centuries in the making is not going to be easy, it is necessary. Addressing the many health disparities people with disabilities face will require a multipronged approach that addresses robust service delivery problems, directing attention to issues that trickle down (e.g., unpaid care labour, direct support staff wages, etc.), and the many forms of prejudice and discrimination that impact not only the ways people are treated but also decision-making about government priorities. Much work is necessary but unearthing the disparities that exist is one of the first steps in attending to them.

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Table 1
Demographics of Sample

Variable	%	<i>n</i>	<i>M</i>	<i>SD</i>
Age (in years)			44.5	15.9
Gender				
Men	57.8%	851		
Women	42.2%	622		
Race				
White	66.8%	984		
Black	21.8%	321		
Latinx	3.3%	48		
Other (including Asian and Indigenous American)	2.4%	35		
Primary communication method				
Verbal	78.3%	1103		
Facial/body expressions	18.2%	256		
Other (including communication device and sign language)	3.5%	50		
Disability type				
Intellectual/developmental disability	78.7%	1157		
Seizure Disorder/Neurological Problem	16.0%	235		
Anxiety disorder	13.9%	205		
Mood disorder	13.7%	202		
Autism Spectrum Disorder	13.4%	197		
Other Mental Illness/Psychiatric Diagnosis	12.3%	181		
Cerebral Palsy	12.2%	179		
Behaviour challenges	10.5%	155		
Impulse-Control Disorder	6.5%	96		
Personality/psychotic disorder	6.5%	95		
Physical Disability	5.8%	86		
Down Syndrome	5.7%	84		
Limited or No Vision- Legally Blind	3.6%	53		
Hearing Loss- Severe or Profound	2.6%	38		
Brain Injury	2.1%	31		
Other disabilities not listed	4.1%	61		
Decision-making authority				
Independent decision making	24.2%	329		
Assisted decision making	30.9%	420		
Full/plenary guardianship	42.7%	581		
Other	2.3%	31		
Impairment severity				
Less severe	66.6%	804		
Severe impairments	33.4%	404		
Residence type				
Provider owned- or operated-home	46.1%	650		
Family home	21.3%	294		
Own home	15.5%	214		
Host family / family foster care	3.9%	54		
ICFDD (state and private)	2.9%	40		
Other	4.8%	67		
Organizational supports in place (total)			11.0	5.7

Note. Participants could be from more than one race or have more than one impairment.

Table 2
Regression Coefficients

Variable	Total Social Determinants of Health	Social Determinants of Health Sub- Components		
		Choice and Engagement	Person- centeredness	Health and safety
(Constant)	10.8%	5.5%	-0.9%	47.3%
Age (in years)	-0.005%	0.1%	-0.1%	-0.1%
Women (ref: men)	-2.5%*	-1.6%	-3.3%	-3.2%
Race (ref: White)				
Black	-0.8%	-3.5%*	2.7%	-0.9%
Latinx	-0.3%	-4.3%	2.6%	4.1%
Other	-9.6%**	-2.1%	-18.2%**	-10.9%
Primary communication method (ref: Verbal)				
Facial/body expressions	2.0%	-2.5%	9.0%***	-1.0%
Other	-1.1%	-0.2%	3.7%	-13.0%*
Disability type				
Anxiety disorder	-1.9%	-3.1%	-2.4%	2.1%
Autism Spectrum Disorder	0.6%	-0.2%	0.7%	2.2%
Behaviour challenges	-1.9%	-0.8%	-3.5%	-1.3%
Brain Injury	-3.2%	-8.9%	6.0%	-7.2%
Cerebral Palsy	-0.6%	0.8%	-1.5%	-2.4%
Down Syndrome	0.7%	0.2%	2.1%	-0.6%
Hearing Loss- Severe or Profound	-2.0%	-6.4%	-1.5%	7.9%
Impulse-Control Disorder	-1.6%	0.05%	-4.9%	0.8%
Intellectual/developmental disability	1.9%	2.4%	2.7%	-1.2%
Limited or No Vision- Legally Blind	2.8%	4.8%	-3.8%	10.8%*
Mood disorder	-0.7%	1.2%	-1.6%	-3.6%
Other Mental Illness/Psychiatric Diagnosis	-0.9%	1.7%	-3.7%	-2.1%
Personality/psychotic disorder	-5.1%**	-3.1%	-9.3%**	-1.9%
Physical Disability	-5.9%**	-11.3%***	1.2%	-6.4%
Seizure Disorder/Neurological Problem	-1.4%	2.5%	-6.1%**	-1.3%
Other disabilities not listed	-3.3%	4.8%	-11.6%**	-6.9%
Decision-making authority (ref: Independent decision making)				
Assisted decision making	0.2%	-1.8%	1.4%	2.9%
Full/plenary guardianship	1.5%	1.1%	1.1%	3.6%
Other	0.8%	7.0%	-2.9%	-7.0%
Severe impairments (ref: Less severe impairments)	-2.1%	-3.4%*	-1.1%	-0.7%
Residence (ref: Own home)				
Family home	0.3%	-3.8%	4.1%	2.7%
Host family / family foster care	0.0%	-1.8%	0.6%	3.6%
Provider owned- or operated-home	-1.7%	-14.3***	6.3%*	13.7%***
ICFDD (state and private)	-7.5%*	-16.8%**	-0.4%	1.5%
Other	-0.7%	-10.0%*	10.8%*	-0.4%
Organizational supports in place (total)	3.9%***	3.7%***	4.9%***	2.5%***

Note. *p < 0.05. **p < 0.01. ***p < 0.001. HCBS = Home and community-based services. ICFDD = Intermediate care facilities for people with developmental disabilities.

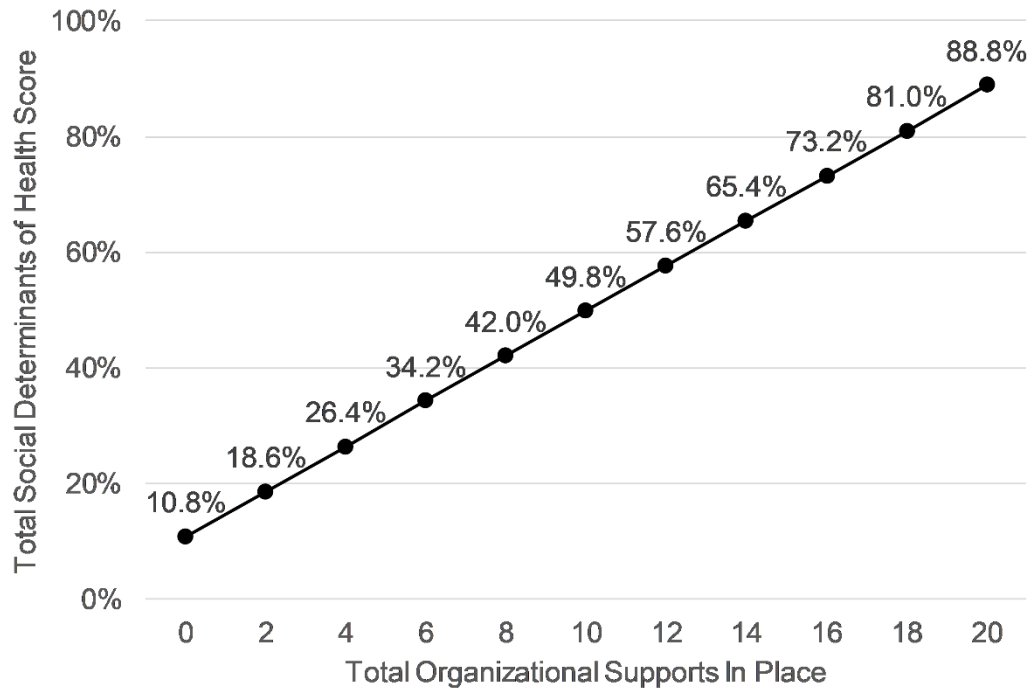


Figure 1. The relationship between organizational supports and total social determinants of health (controlling for all other variables).

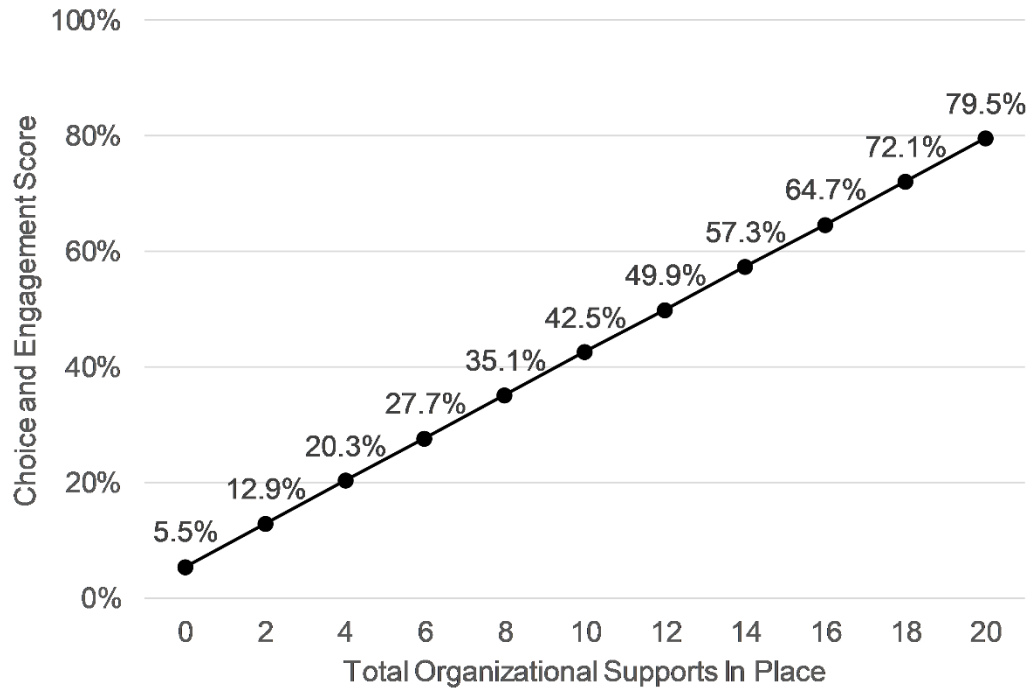


Figure 2. The relationship between organizational supports and choice and engagement scores (controlling for all other variables).

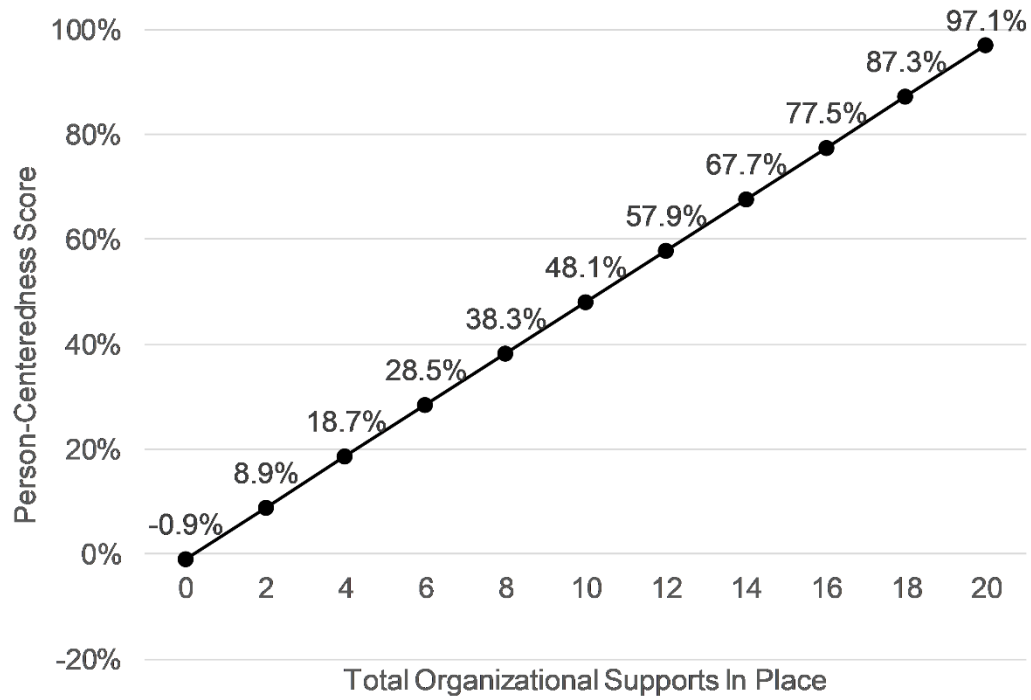


Figure 3. The relationship between organizational supports and person-centeredness scores (controlling for all other variables).

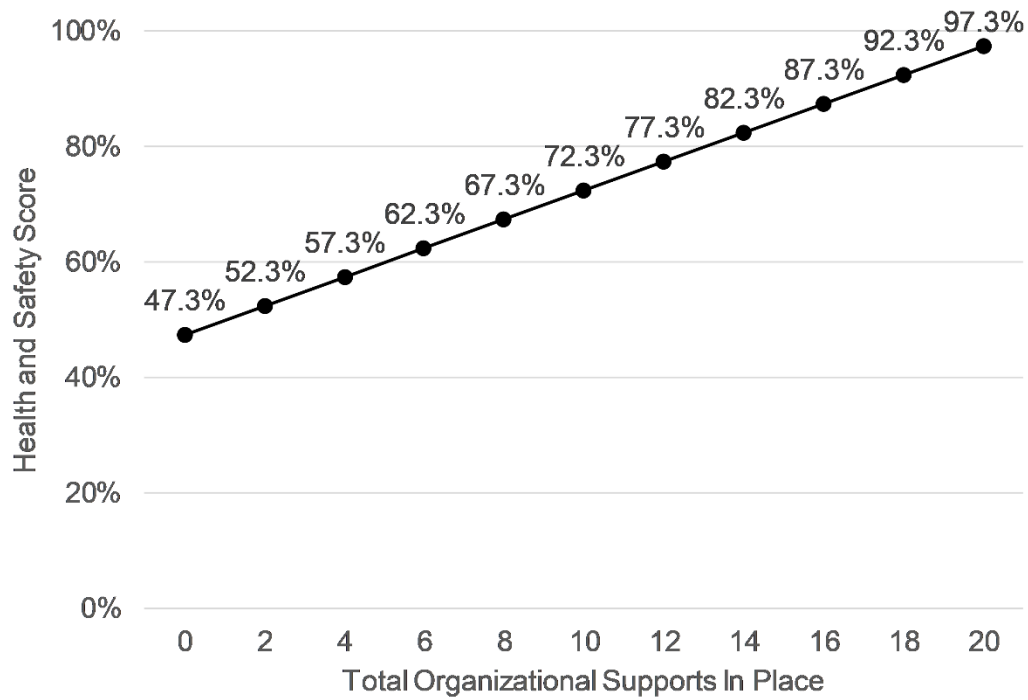


Figure 4. The relationship between organizational supports and health and safety scores (controlling for all other variables).